

# Light My Bricks : The Louvre LED Lighting Kit



Here is the instruction document for the Lego Louvre LED lighting kit. Please read and follow the steps carefully to ensure this lighting kit is installed properly.

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## Package Contents:

- 2 x **LED Strip Lights**
- 2 x **Blue Bit Lights**
- 1 x **6 Port Expansion Board**
- 1 x **Standard Battery Pack** (requires 3 x AA batteries not included)

## *Connecting Cables*

- 1 x 5cm
- 1 x 15cm

## *Extra Lego Pieces*

- 2x **1 x 6 Plate**

Any colour will do as the plates are hidden inside the model. These are attached to the **LED Strip Lights**.

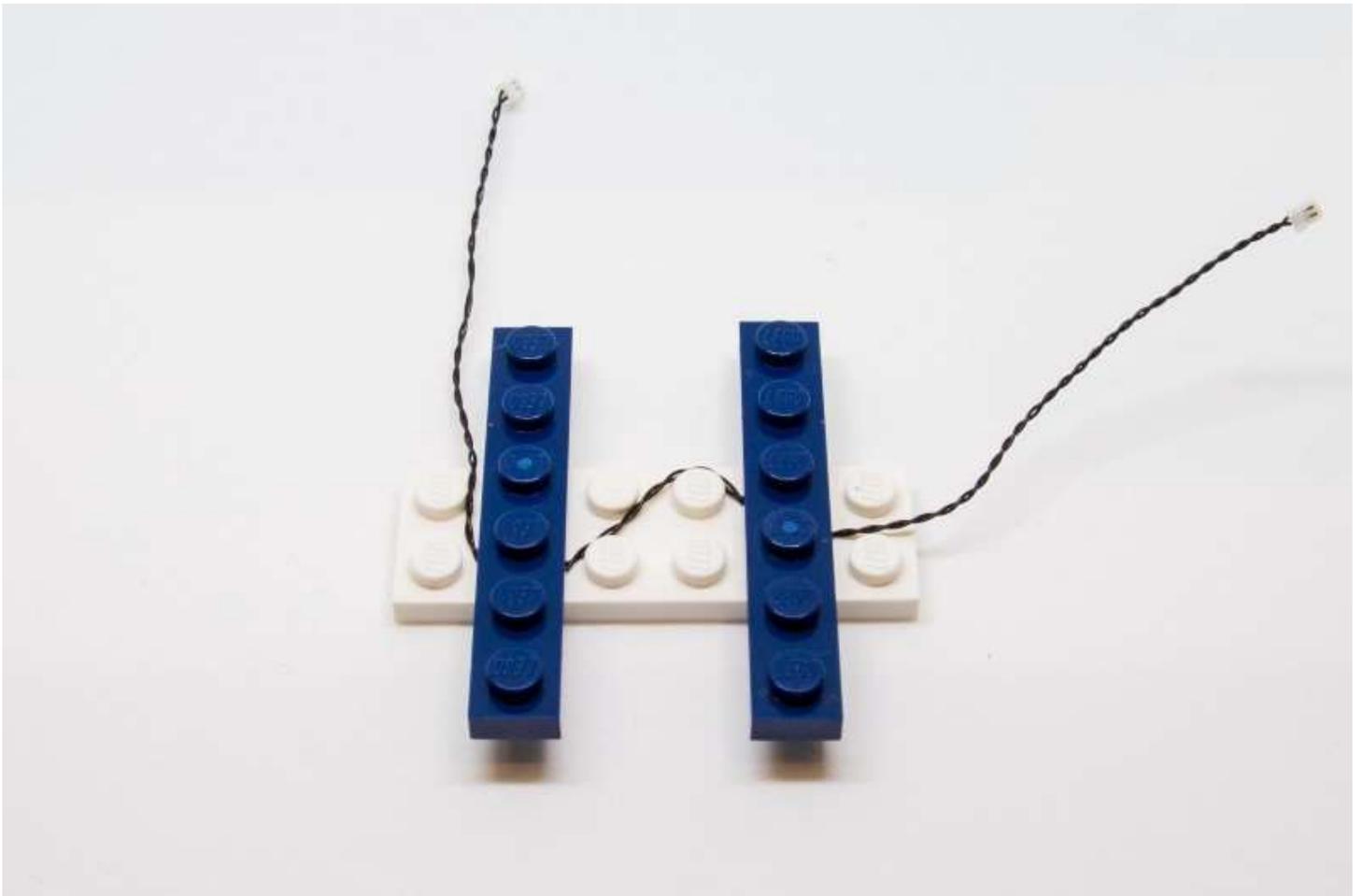
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## Important things to note:

### Laying cables in between and underneath bricks

Cables can fit in between and underneath LEGO® bricks, plates, and tiles providing they are laid correctly between the LEGO® studs. Do NOT forcefully join LEGO® together around cables; instead ensure they are laying comfortably in between each stud.

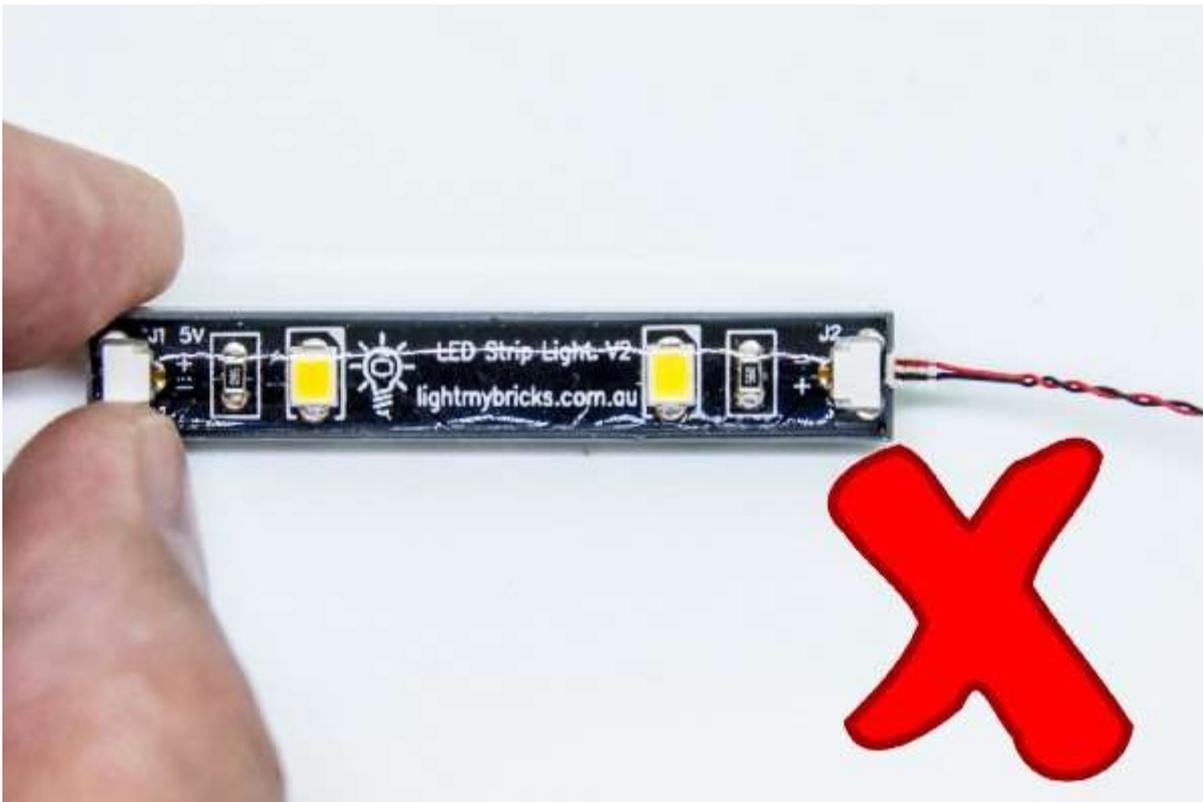
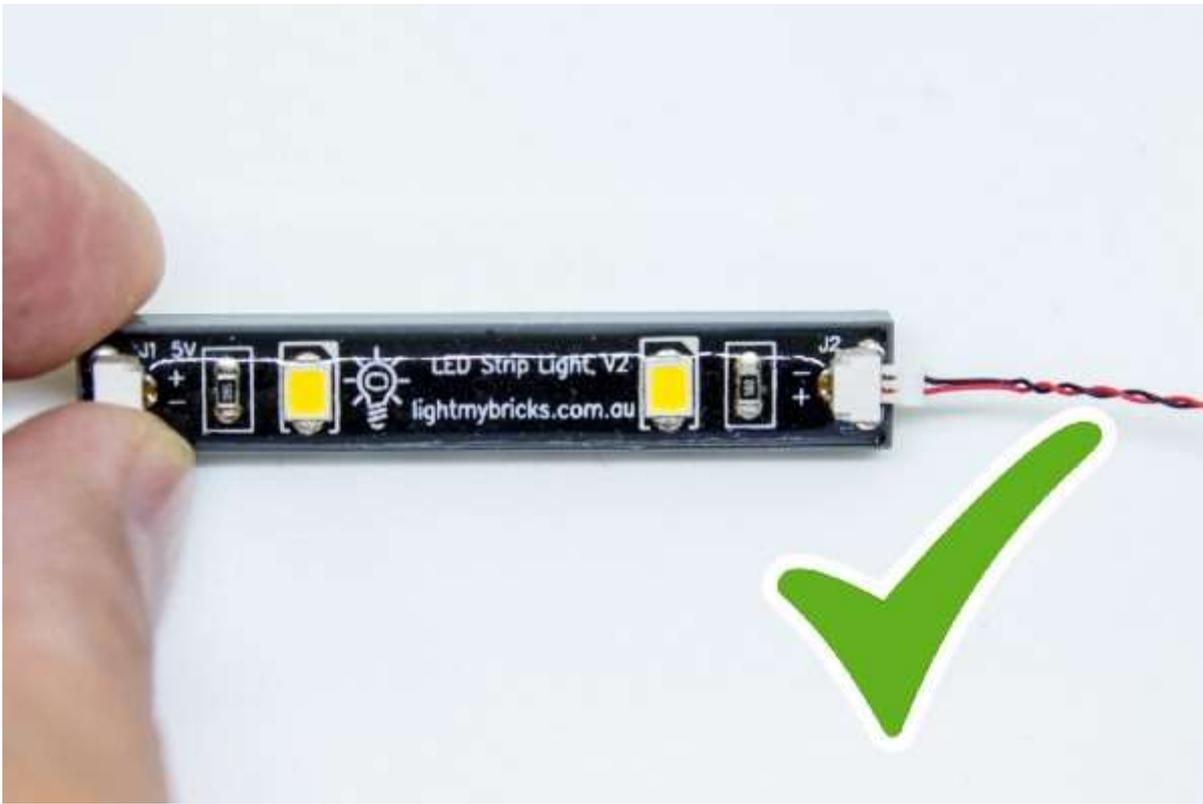




*CAUTION: Forcing LEGO® to connect over a cable can result in damaging the cable and light.*

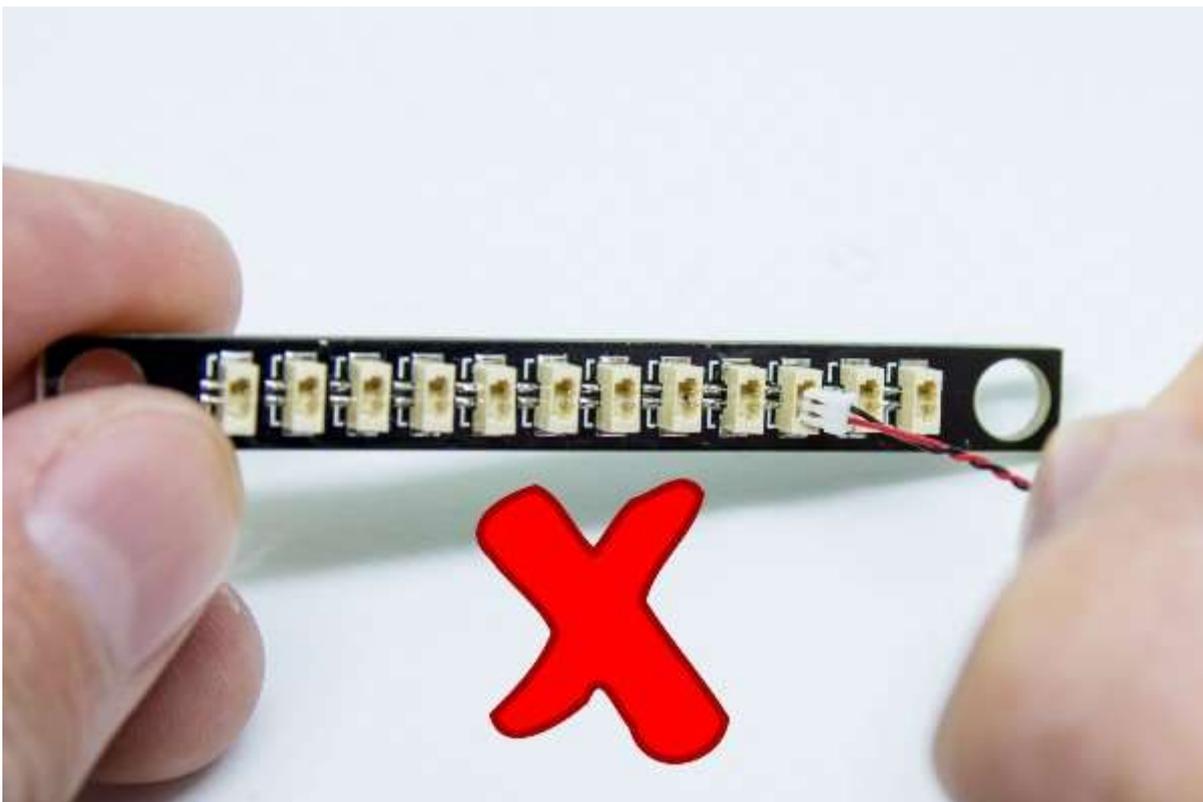
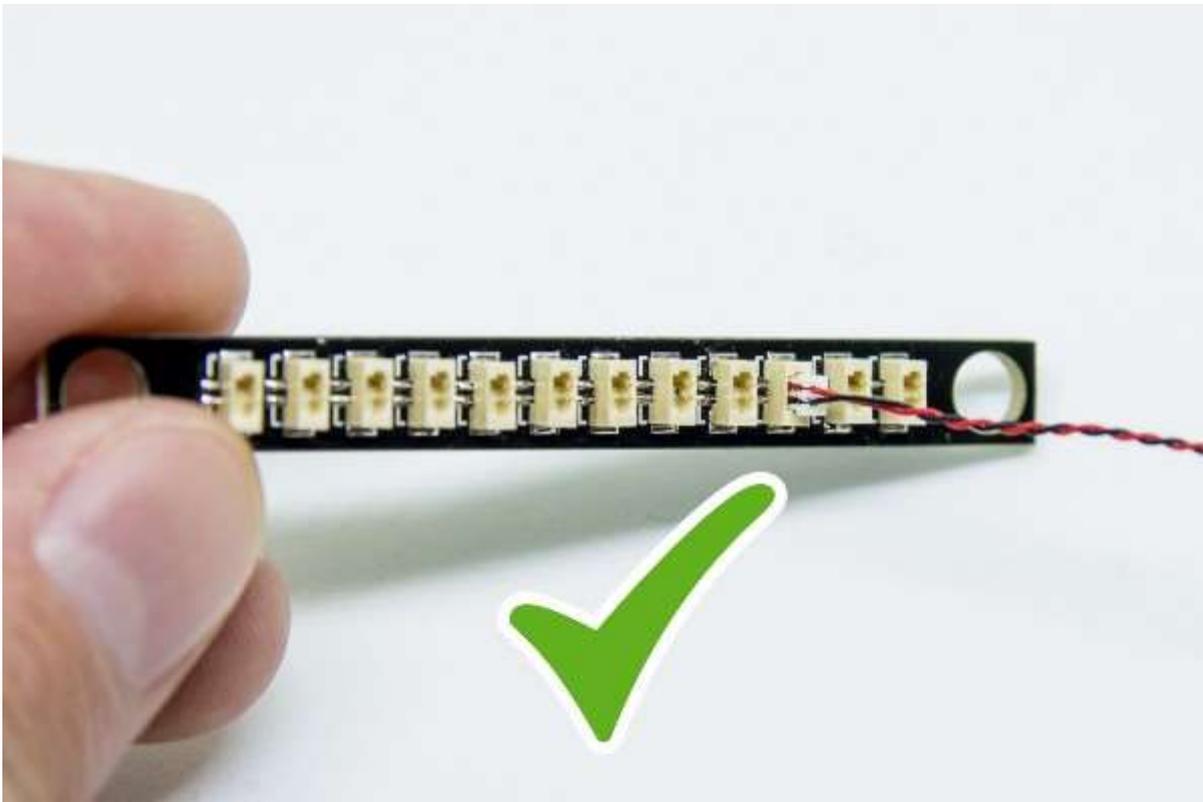
### **Connecting cable connectors to Strip Lights**

Take extra care when inserting connectors to ports on the Strip Lights. Connectors can be inserted only one way. With the Strip Light facing up, ensure the side of the connector with the wires exposed is facing down. If a plug won't fit easily into a port connector, don't force it. Doing so will damage the plug and the connector.



### Connecting cable connectors to Expansion Boards

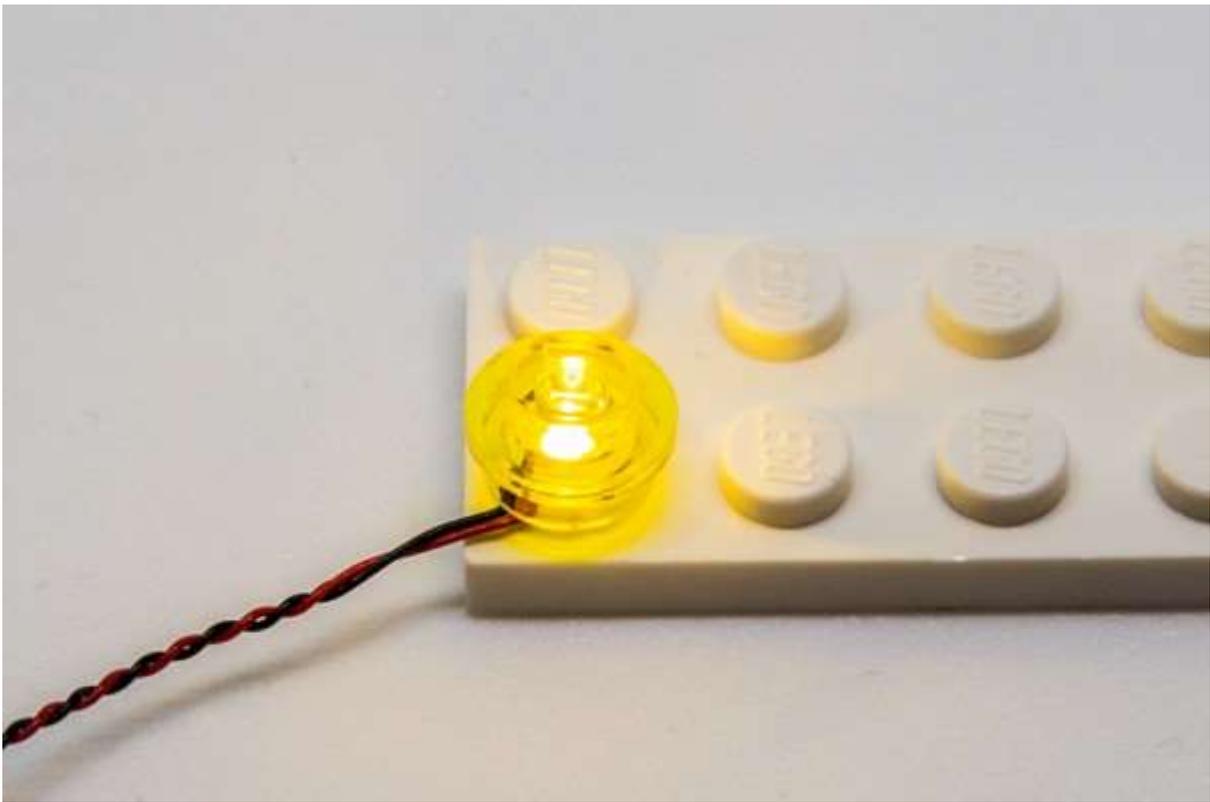
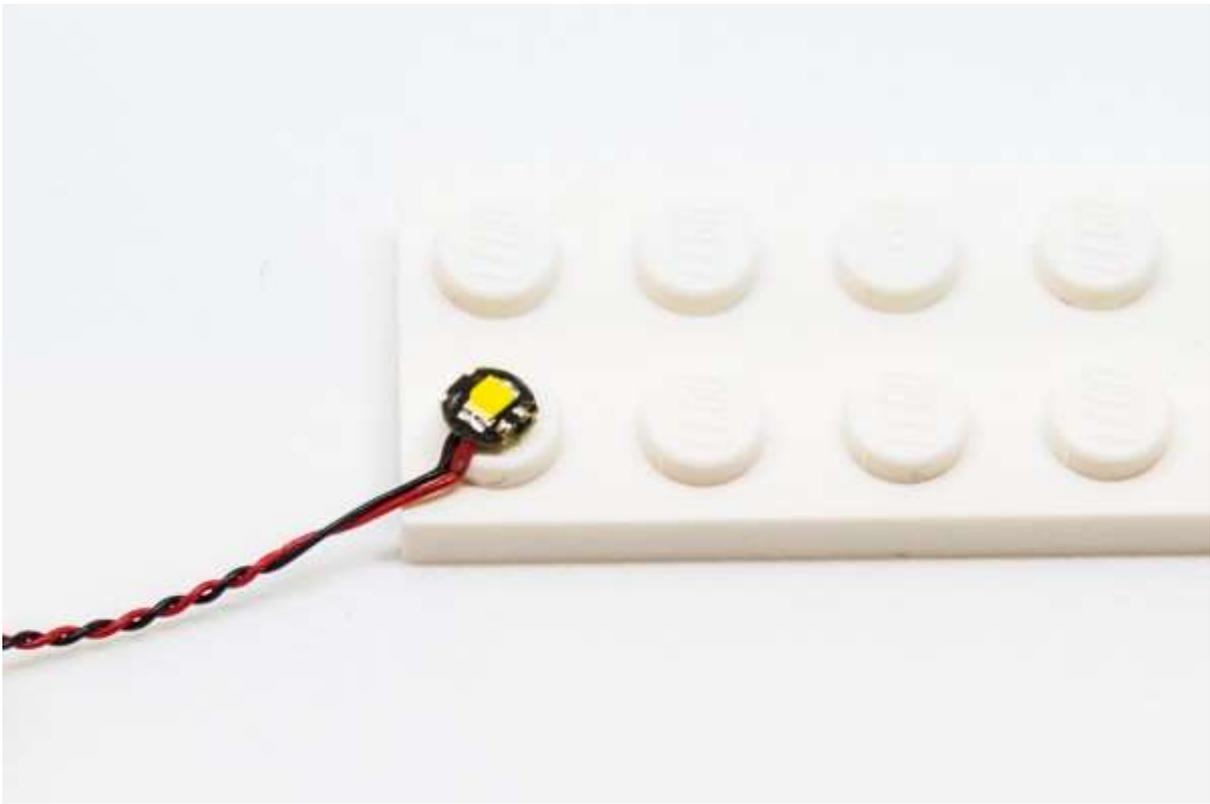
Take extra care when inserting connectors to ports of Expansion Boards. Connectors can be inserted only one way. With the expansion board facing up, look for the soldered "=" symbol on the left side of the port. The connector side with the wires exposed should be facing toward the soldered "=" symbol as you insert into the port. If a plug won't fit easily into a port connector, do not force it.

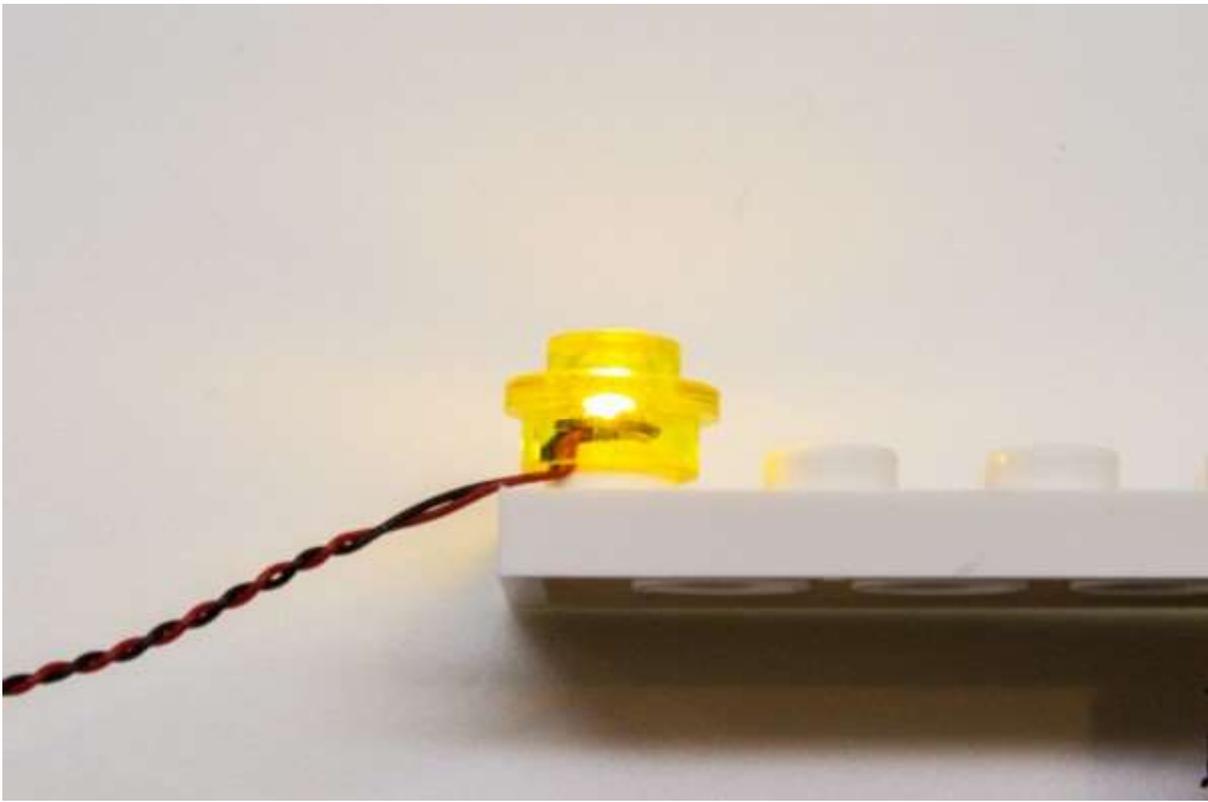


***WARNING: Incorrectly inserting the connector can result in bent pins inside the port or possible overheating of the expansion board when connected.***

### **Installing Bit Lights under LEGO® bricks and plates.**

When installing Bit Lights under LEGO® pieces, ensure they are placed the correct way up (Yellow LED component exposed). You can either place them directly on top of LEGO® studs or in between.





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OK, Let's Begin!

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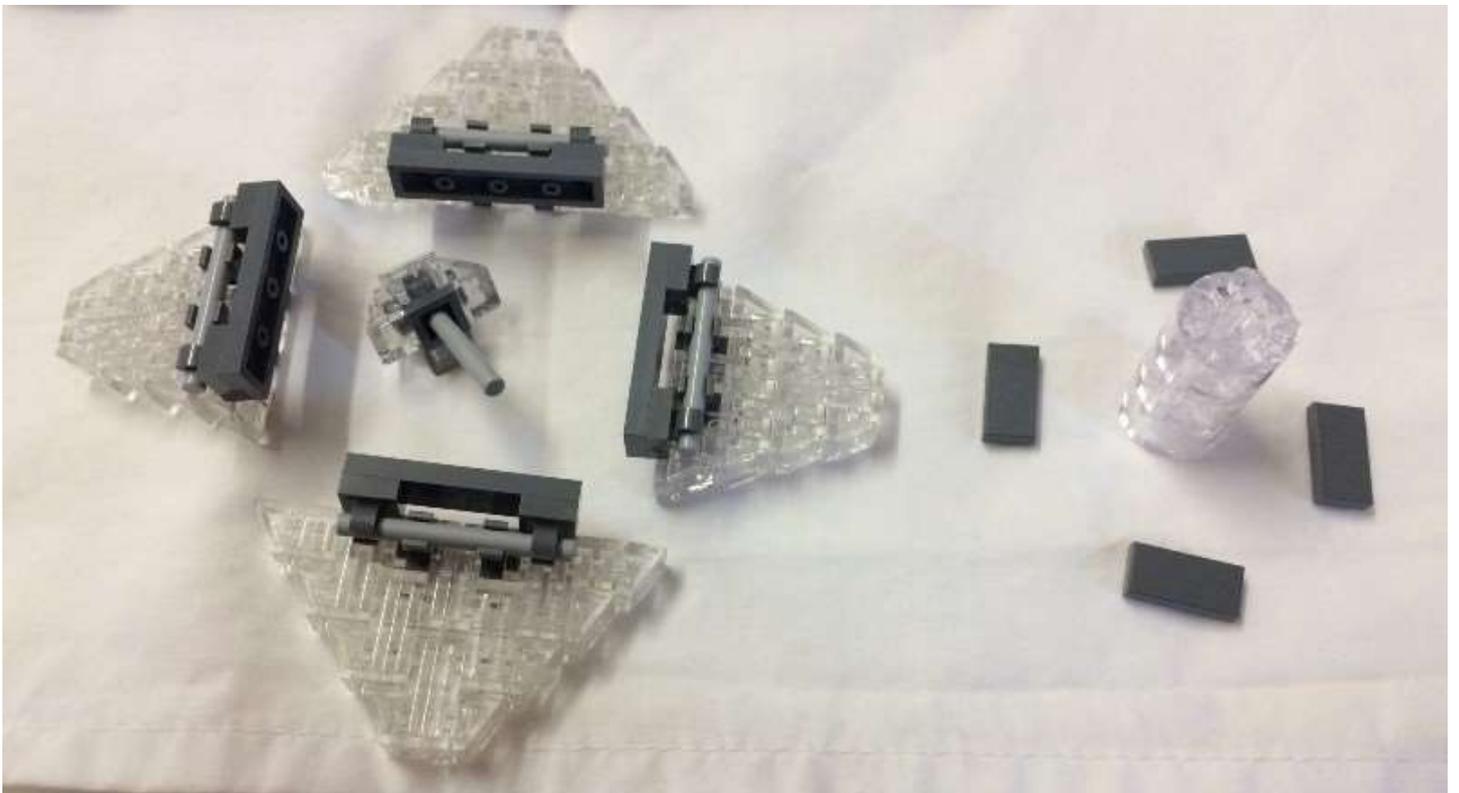
### **Instructions for installing this kit**

We will start by installing the two blue bit lights under the pyramid at the front of the model and run the wires from these lights towards the back and then inside the building. Then we will connect the two lights to the 6 port expansion board inside the building. From there, we will fix the strip lights to a high position inside the building. We will connect the strip lights together and connect them to the 6 port expansion board. From here, it's just a matter of hooking up a battery pack and putting the model back together!

Remove the centre piece from the top of the pyramid and the four sides of the pyramid. When I do this, the rods and the plate at the base of the walls come out also. This is preferred as it will give you the room required to work inside.



Remove the 1 x 2 tiles and the transparent round bricks left from under the pyramid structure.



What you should see now is a 6 x 6 area of dark grey bricks where the pyramid was as seen in the picture below.



Now we need to remove three of the “water” pieces on the left hand side of the model.



Remove the two 1 x 2 plates and the sloped tiles fixed to them. You want the highest one from the left hand side and the lowest one from the right hand side.



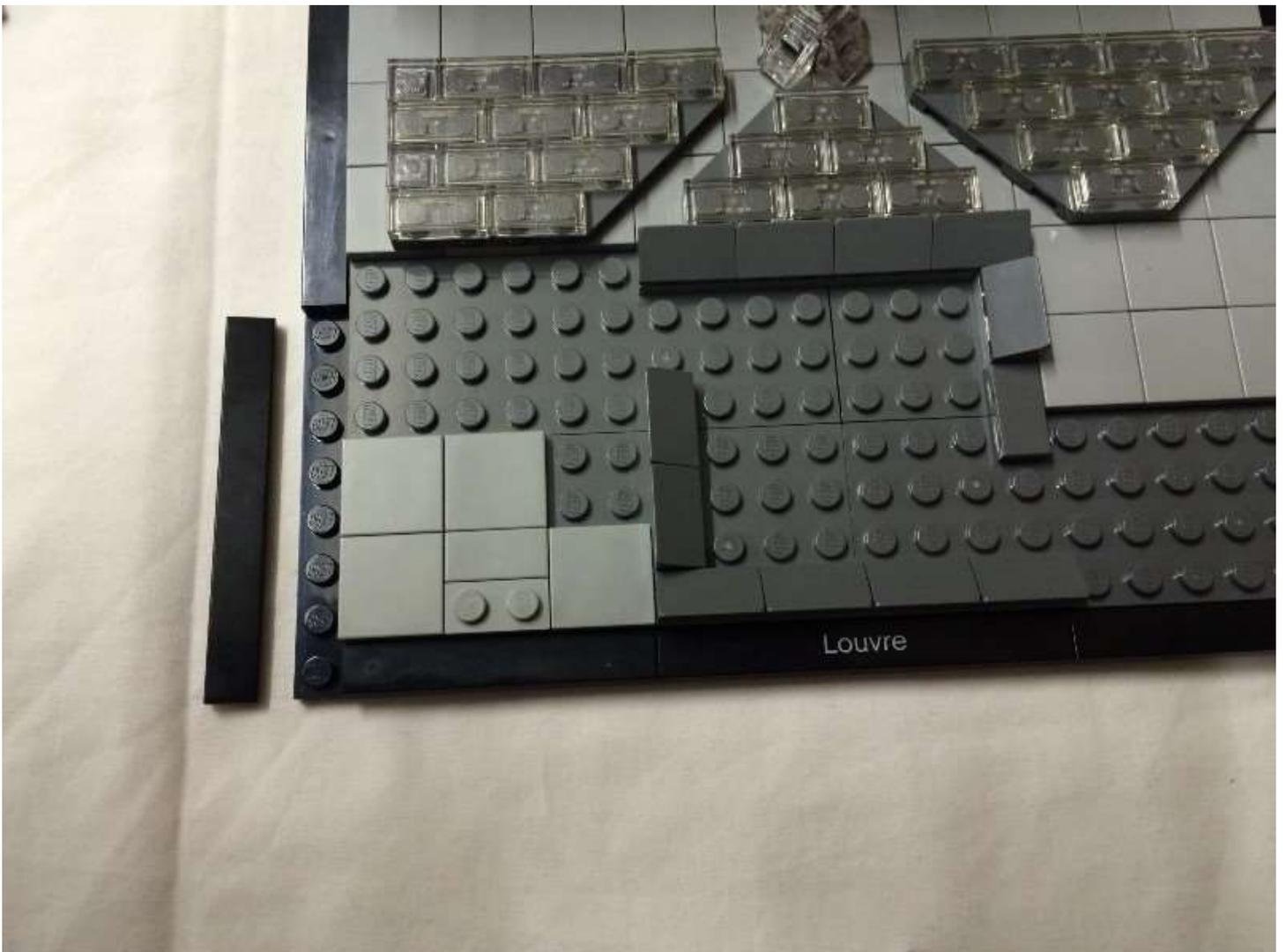
We want to make a path to run our wires from inside the pyramid towards the left and right side of the model. Remove the bottom most 6 tiles on the right hand side of the model. I have started with the two immediately next to the plate and slope tile we removed.



Remove the remaining four tiles so that you can see the studs from the plates underneath going all the way to the edge of the model.



We want to do the same sort of thing on the left hand side but higher up where the gap is from the 1 x 2 plate and slope plate we removed earlier. Looking from there to the left, we want to remove the 2 x 4 plate, the 1 x 2 plate, the 1 x 2 tile and the remaining four 2 x 2 tiles.

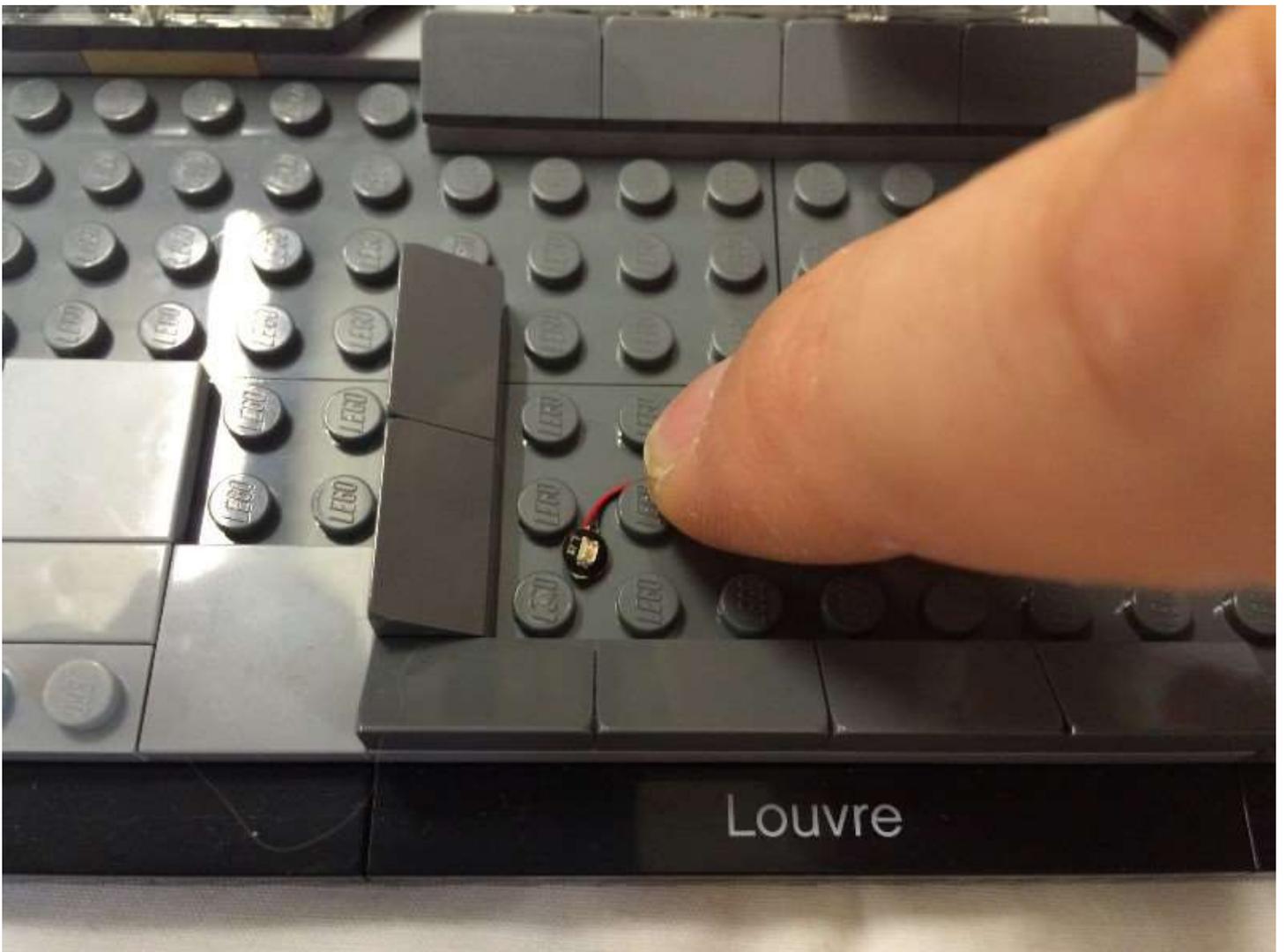


Your model should now look like the picture above. You'll see that I have also removed the 1 x 8 plate from the left edge of the model. Go ahead and remove all three from both sides of the model (6 in total).

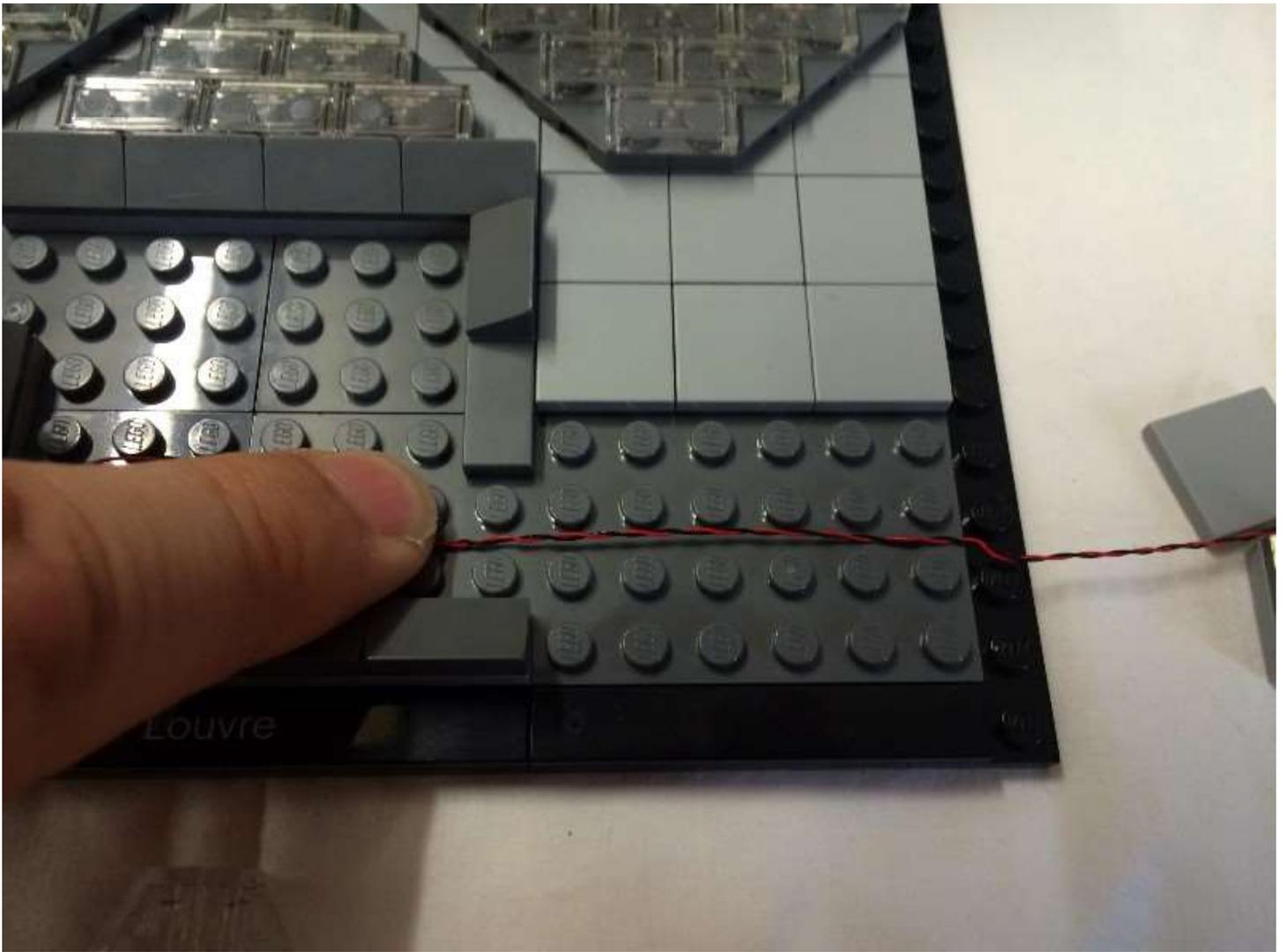
OK.....let's put some lights in! These two bit lights will end up sitting reasonably flat and facing upwards. Run the bit light in from the right had side with the wire in the middle of the studs we have exposed now that the plates are removed. Bend a slight a curve into the wire at the globe end so it looks something like the picture below. Follow the path of the wire between the studs as best as you can.



When you press your finger on the wire close to the LED end, the LED should rest somewhere near the middle of the four studs in the lower left hand corner. It doesn't need to be perfect, but if you can get close to this, things will be easier later on.



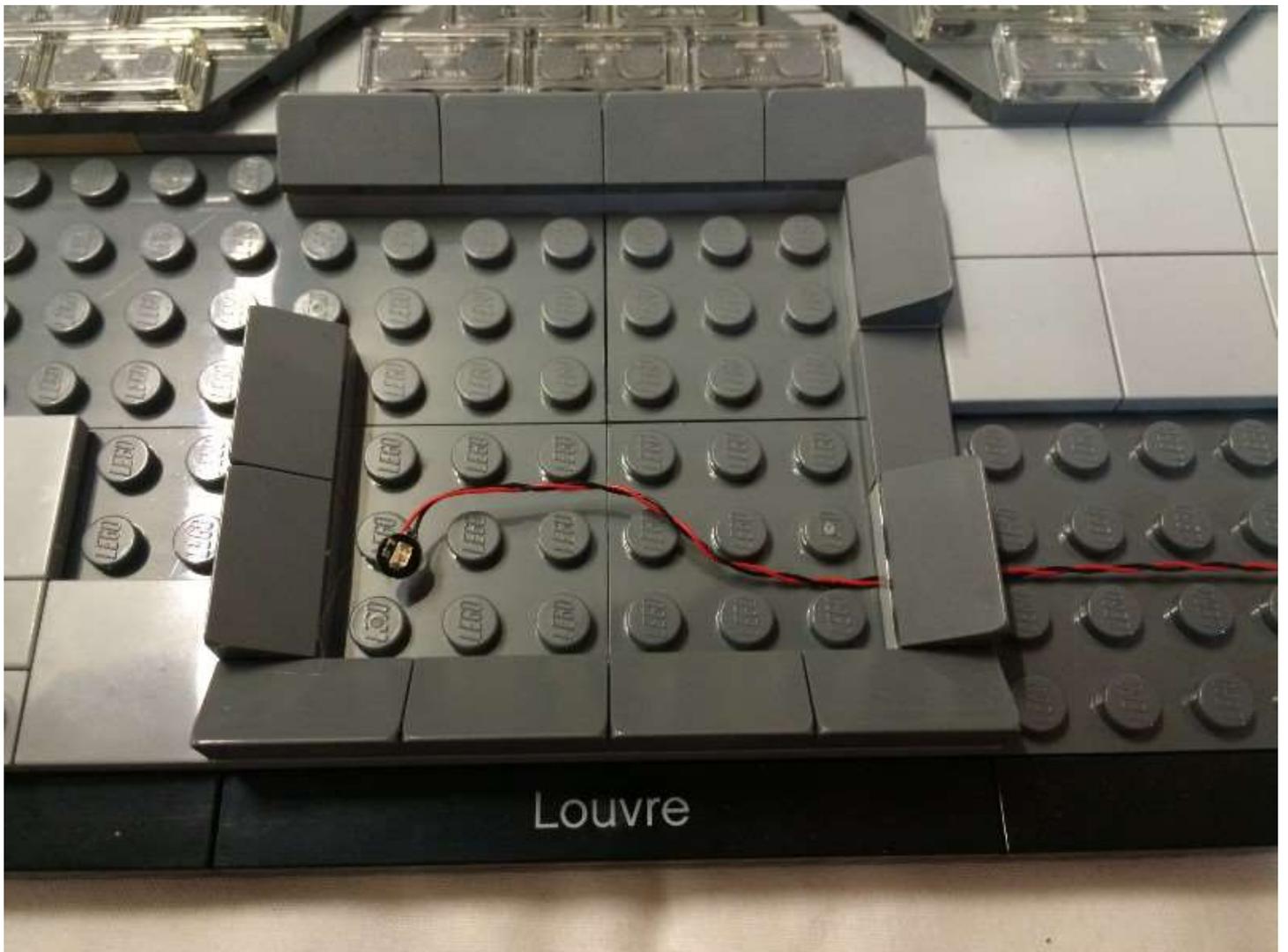
Now we are going to put the 1 x 2 plate and sloped tile back and secure the wire under it. Position the wire in the centre of the two studs that the plate goes on top of and hold it in place with your finger.



Put the 1 x 2 plate and sloped tile back in place.



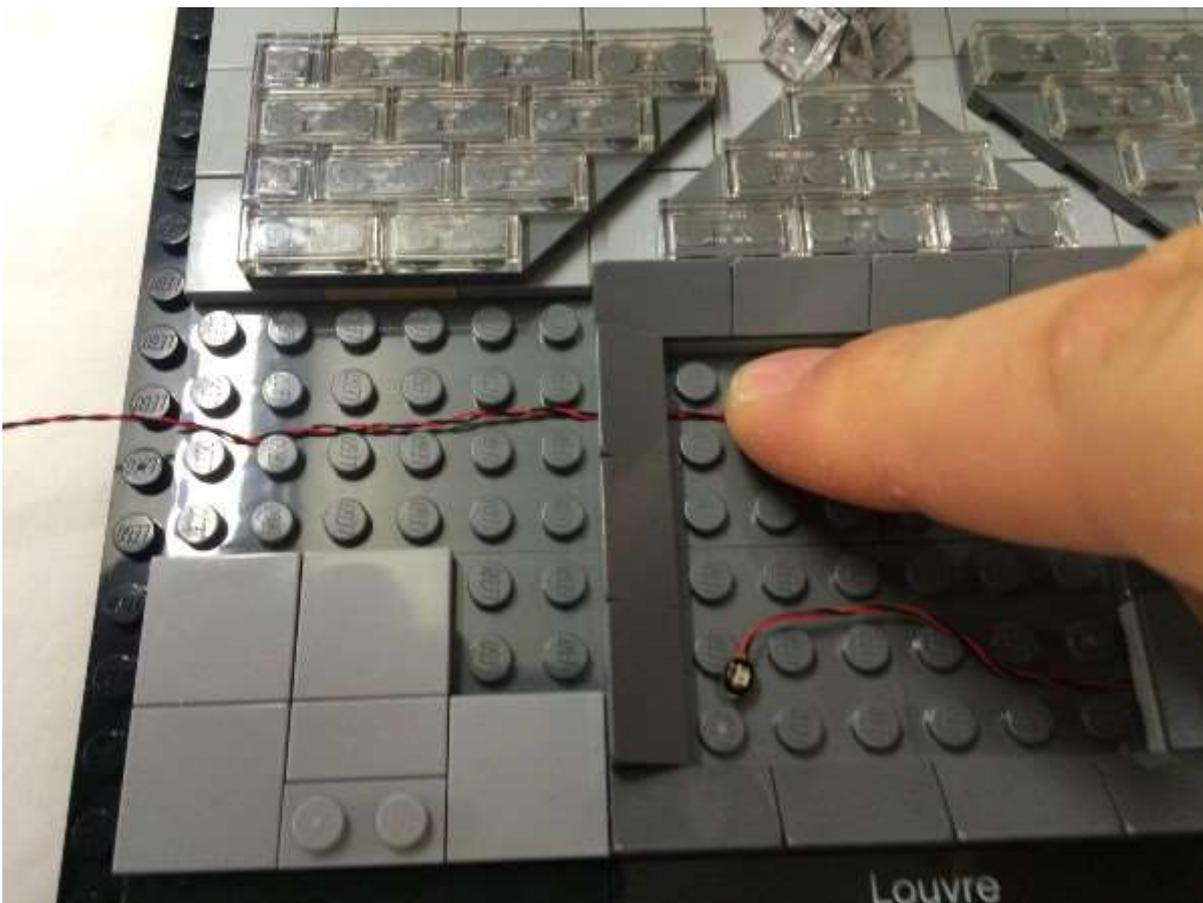
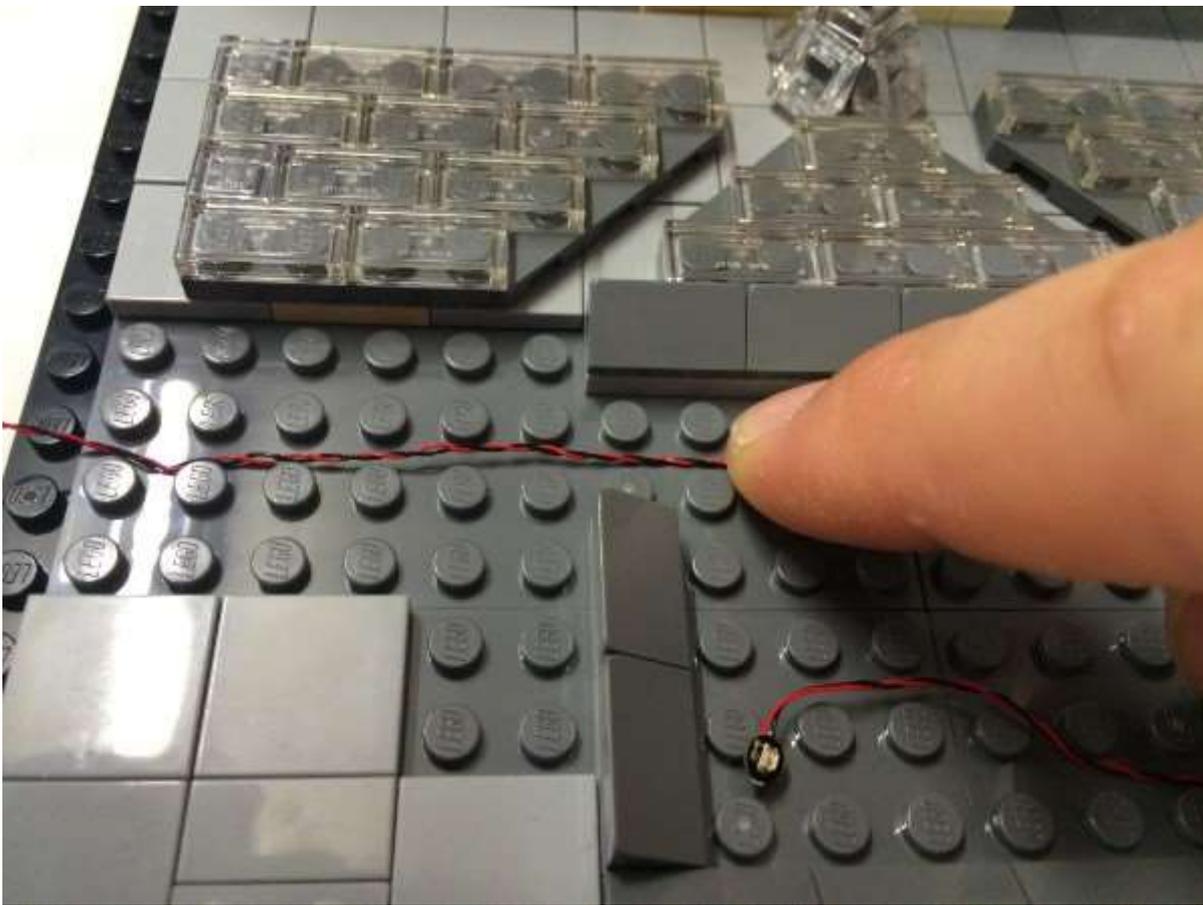
If your LED and wire look like the picture below, then you have done well and we are ready to move on.



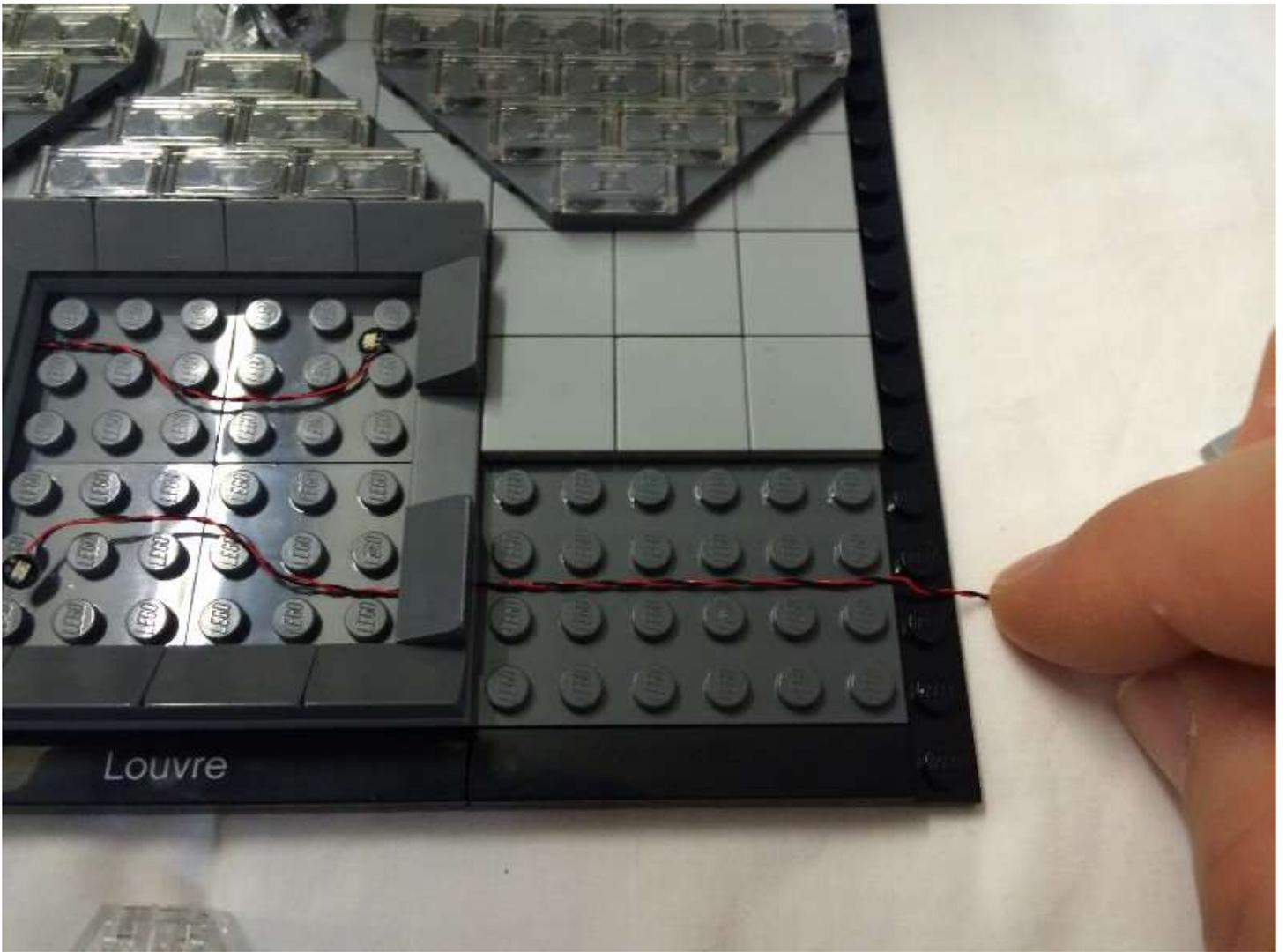
We are going to follow roughly the same method for the LED that comes in from the left hand side. Run the wire in, remembering to curve the end near the LED and we want it to sit roughly in the middle of the top four studs in the top right hand corner.



Centre the wire where it comes out of the pyramid section and hold it in place with your finger. Put the 1 x 2 plate and sloped tile back in place securing the wire underneath it.

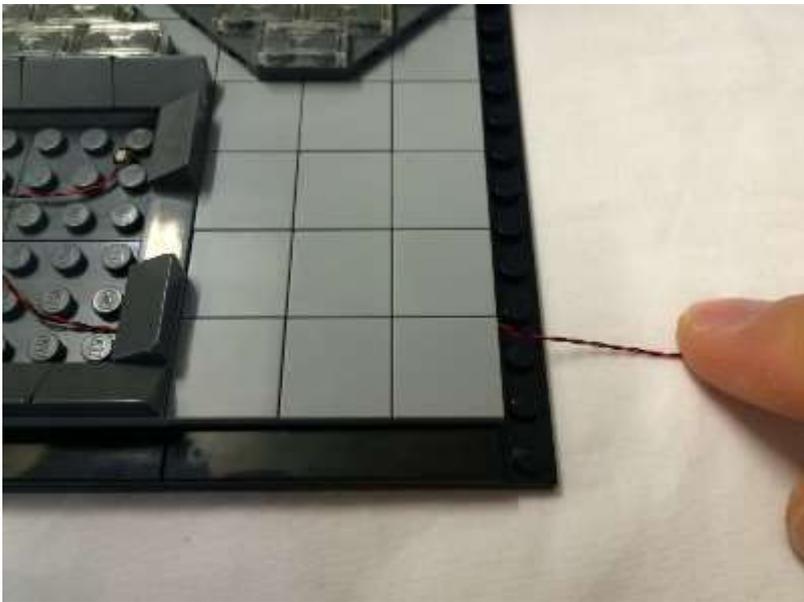
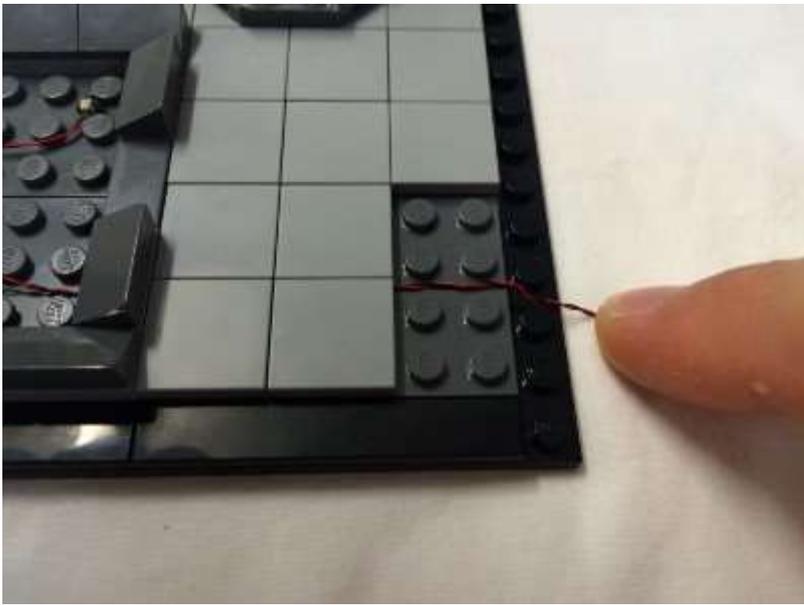


Back to the right hand side. Gently pull the wire on the right hand side so that it comes straight out and stays in the middle of the studs. You only need to apply enough pressure to keep it straight.

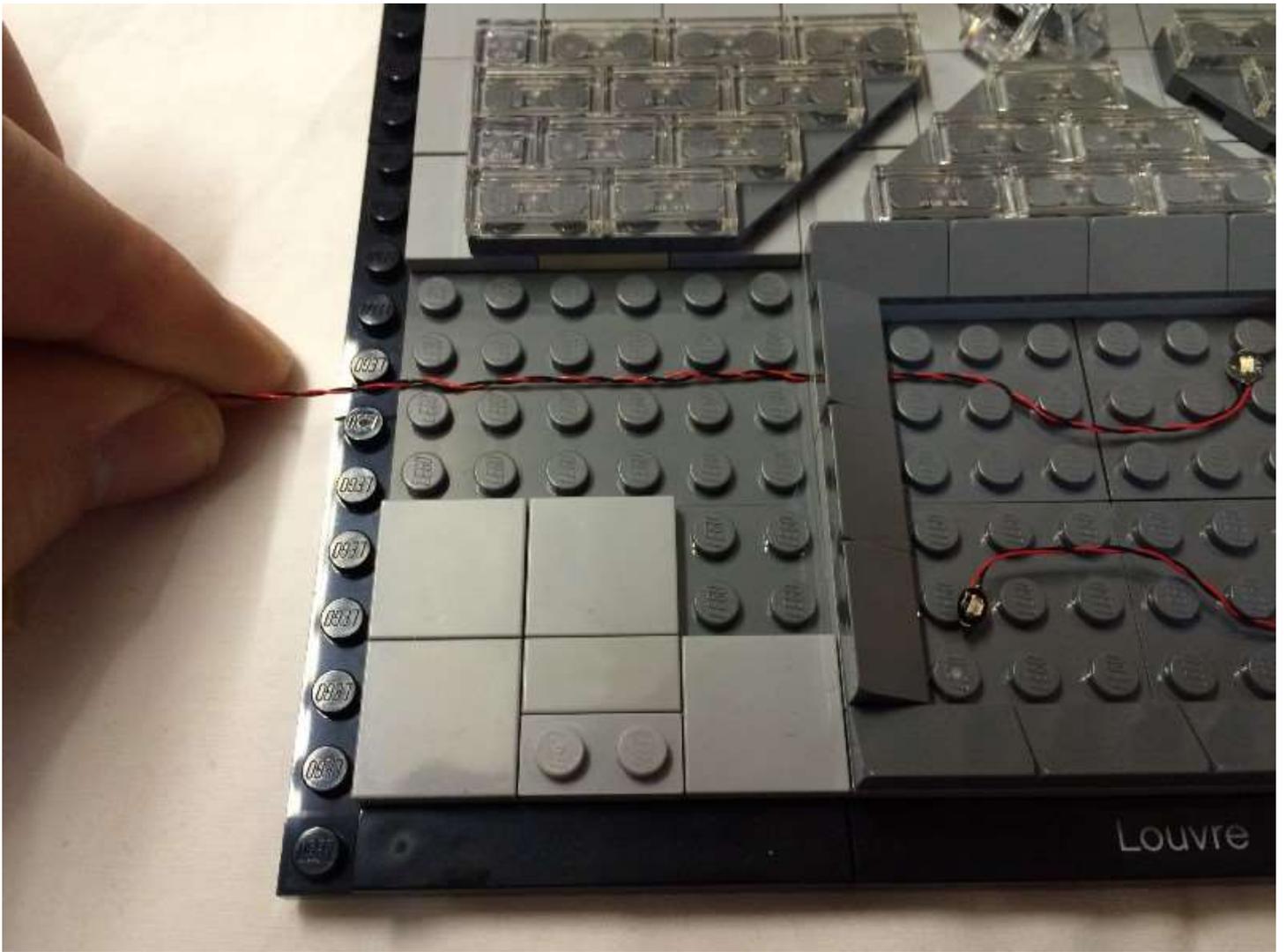


Replace the six tiles concealing the wire in the middle.

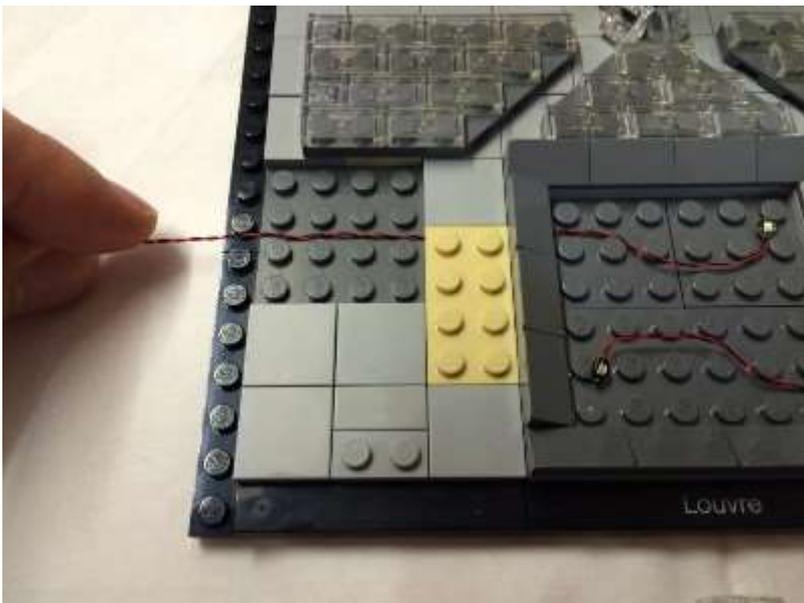


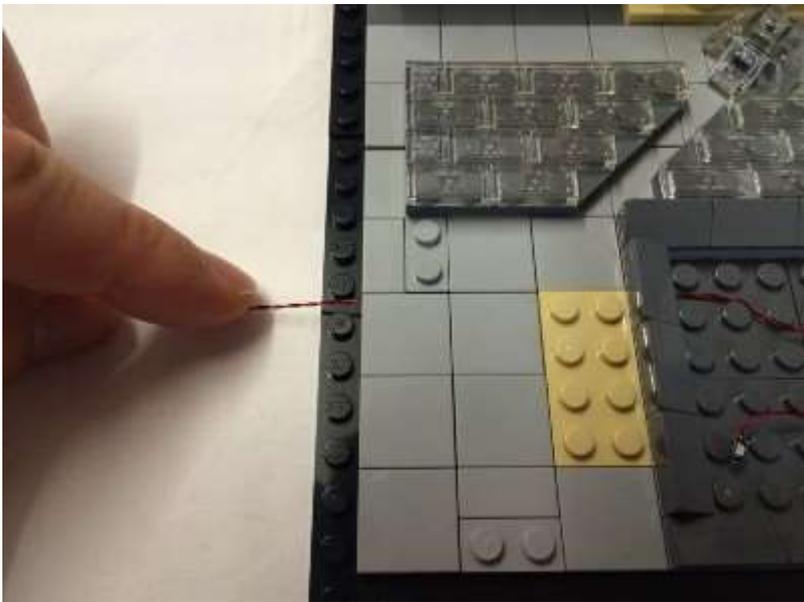


Now back to the left hand side! Gently pull the wire on the left hand side so that it comes straight out and stays in the middle of the studs. You only need to apply enough pressure to keep it straight.

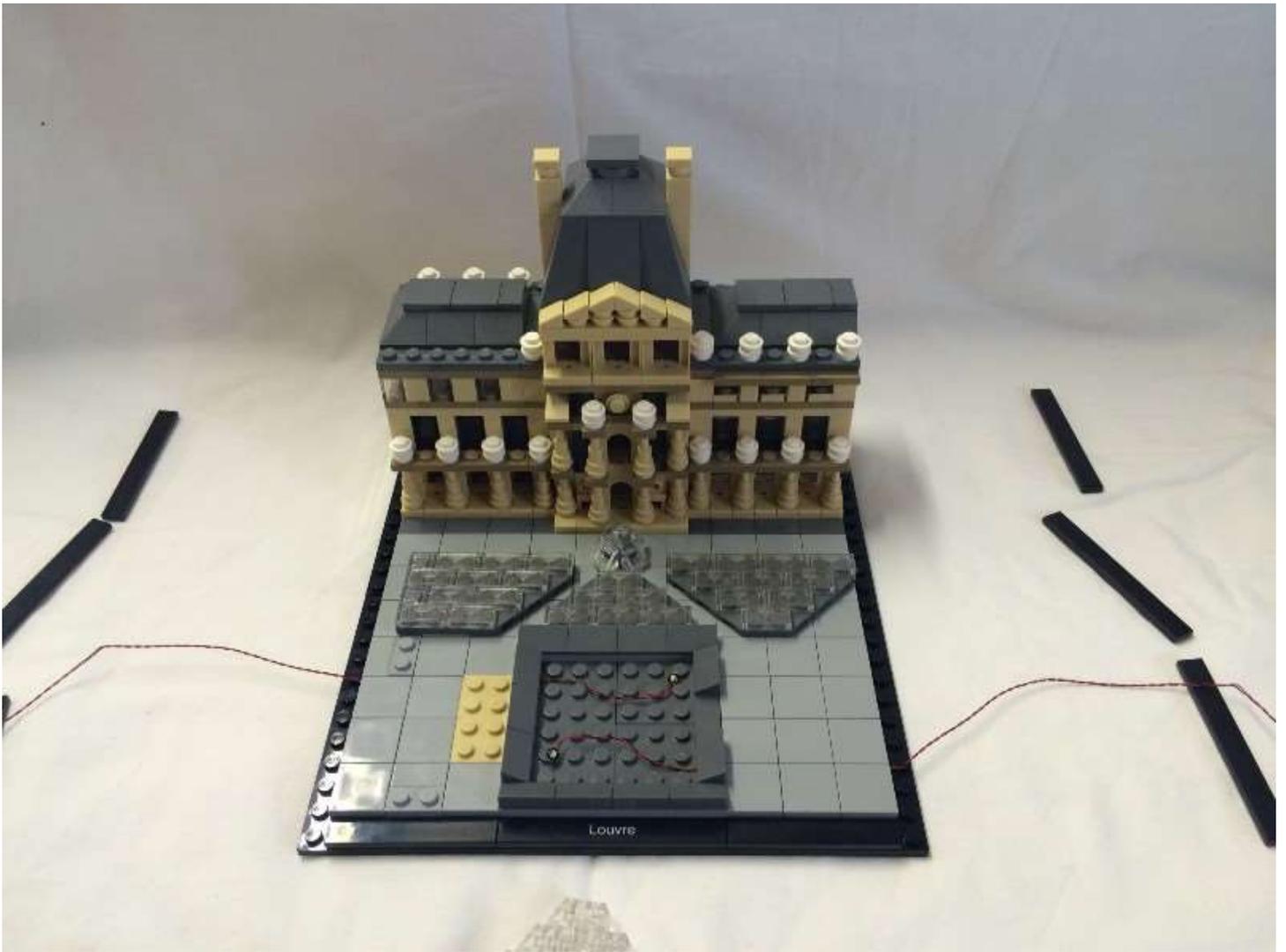


Replace the tiles and plates concealing the wires between the studs.

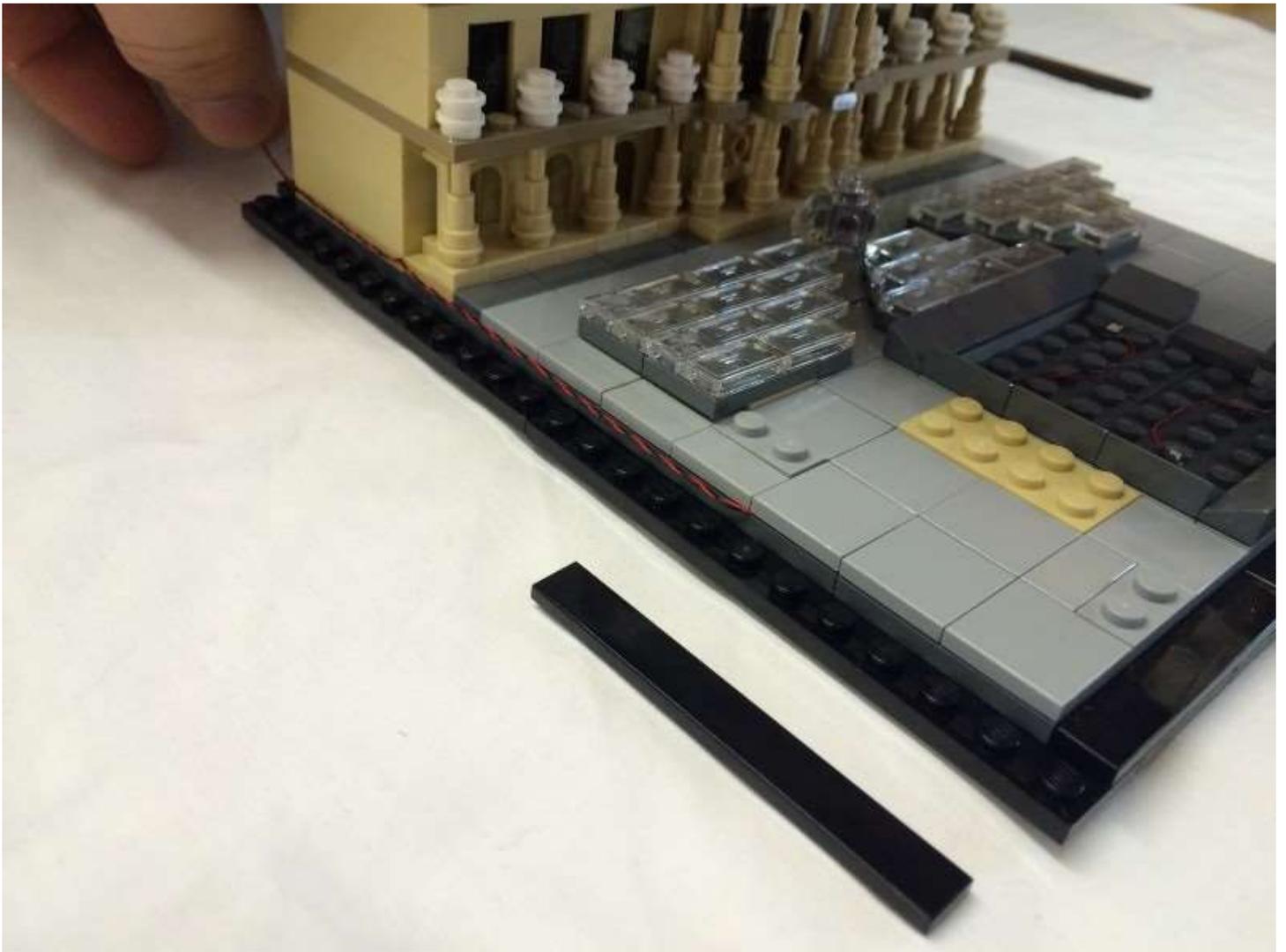




Now we are going to run the wires towards the back of the model and feed them in to the building. I'm going to detail one side of the building but you exactly the same thing for each side.



Gently pull the wire along the edge of the model (on top of the exposed black studs) until it runs straight towards the back.



When the 1 x 8 tile (shown above) is replaced, it will pull the wire down and back towards the front. Allow the wire to do this. We want the wire to rest in between the studs and plates next to them. Gently place the 1 x 8 black tile back where it came from.



Notice that the wire nearest the plate you just put on sits nice and low next to the studs? That is ideal for the next section as well. Gently place the second 1 x 8 tile back where it belongs.

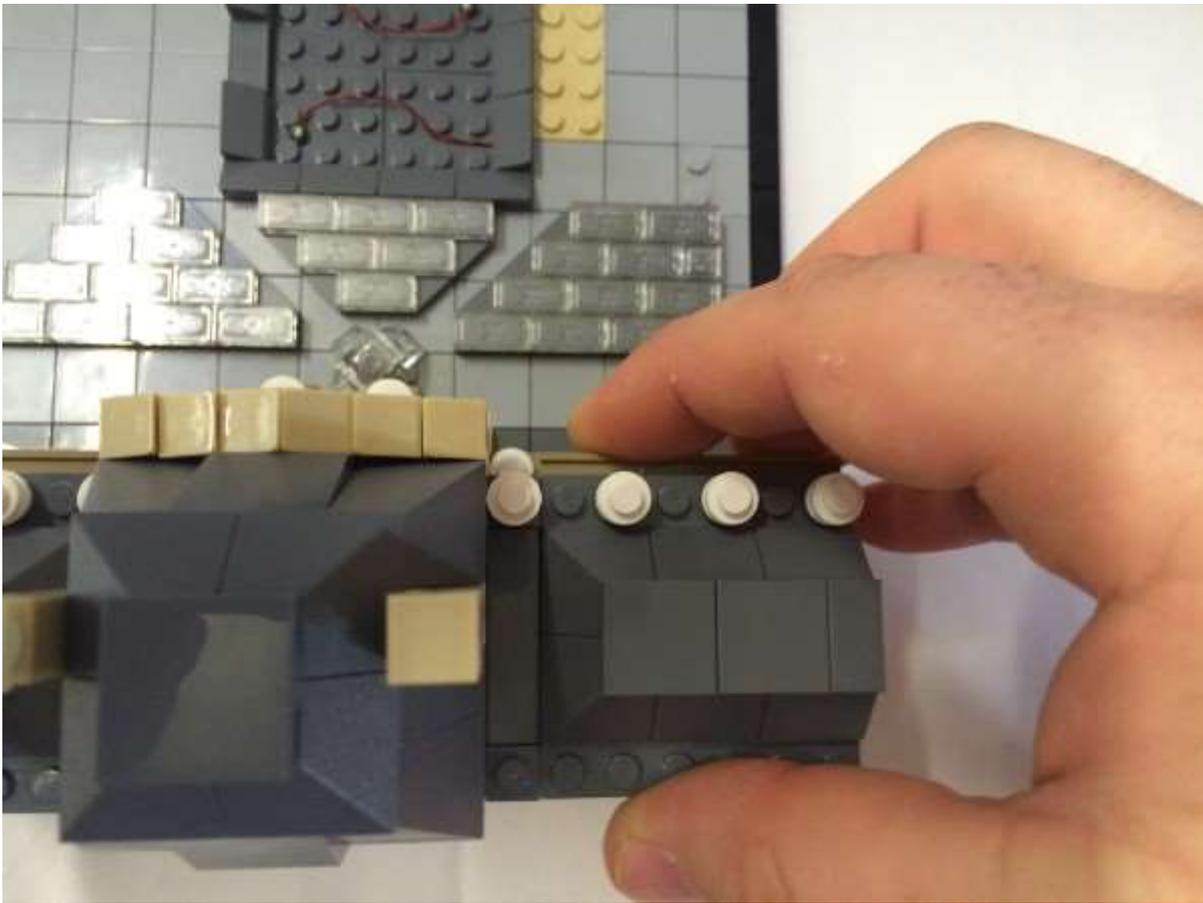


Repeat the steps above for the other side of the model.

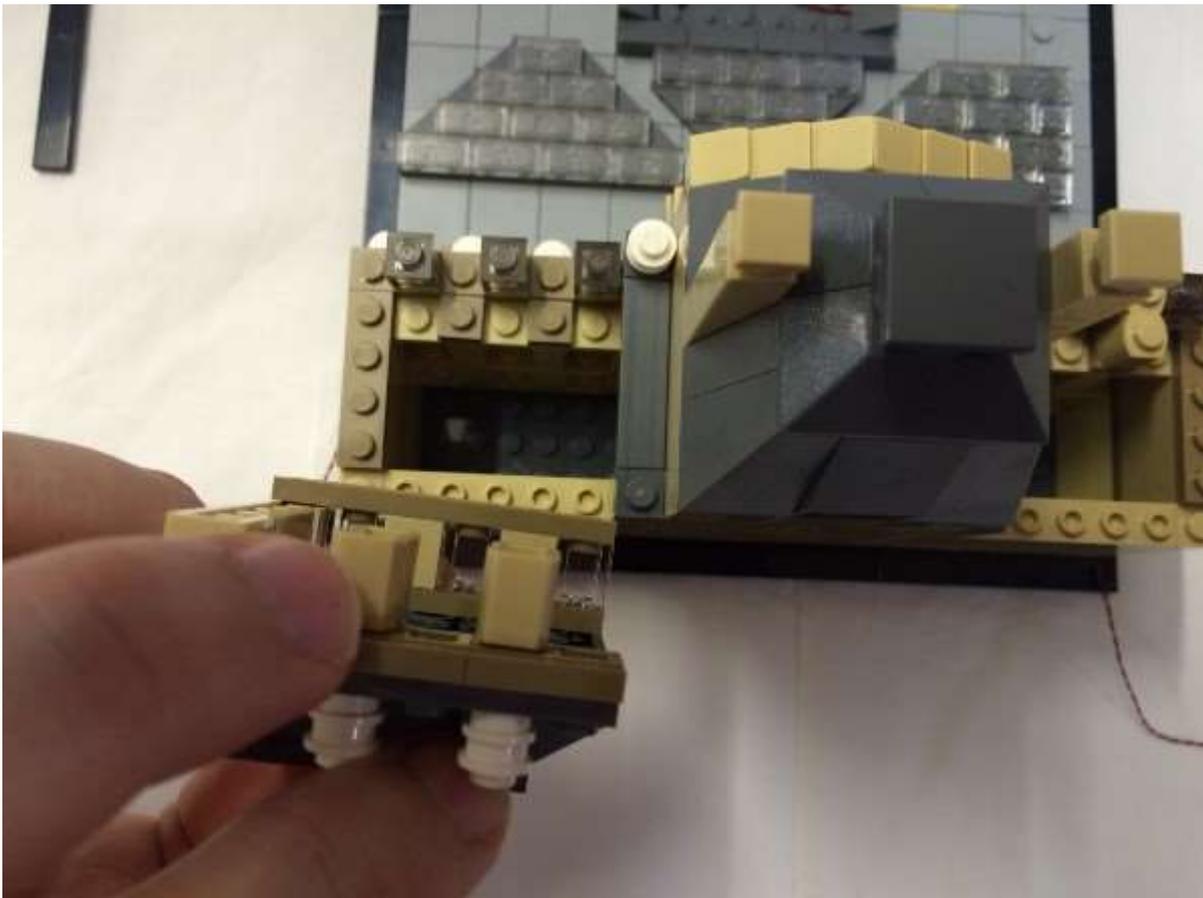
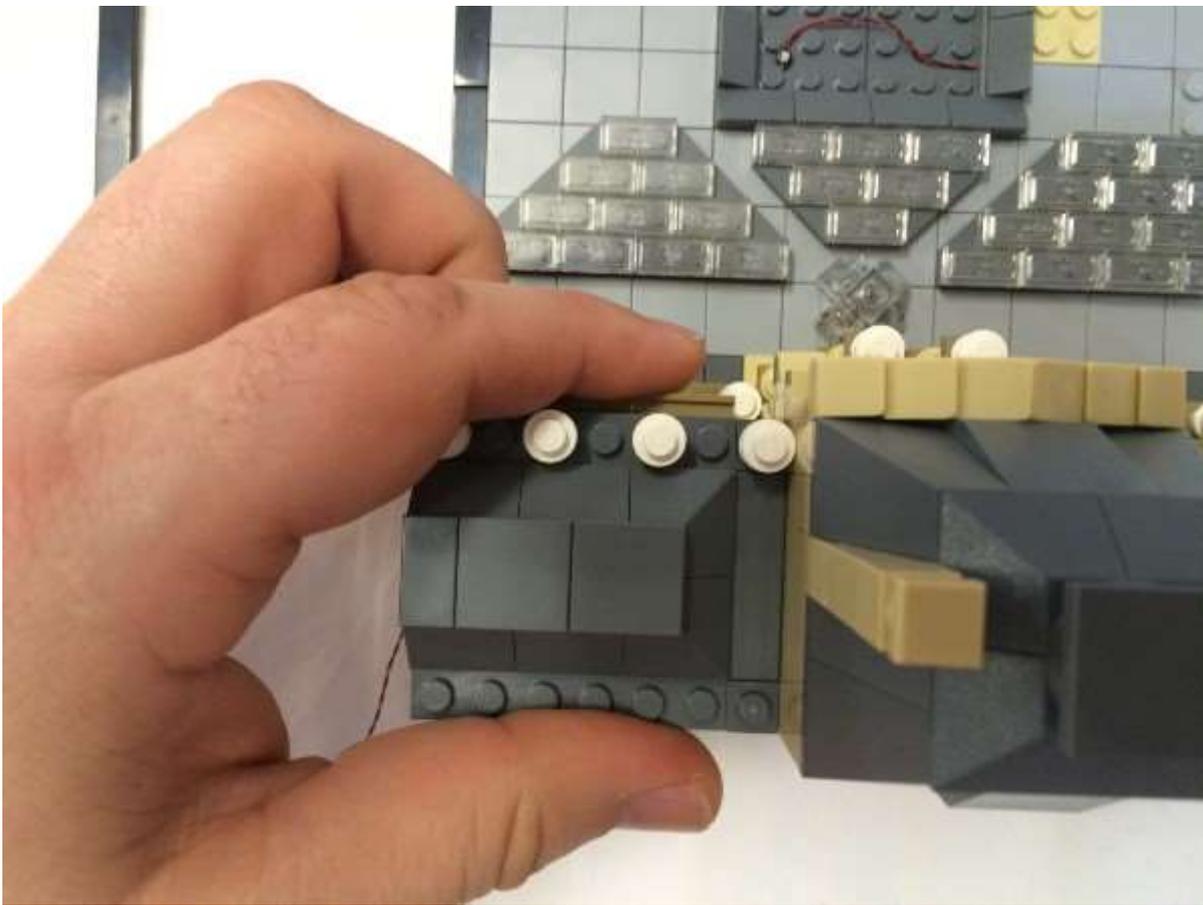
Now we are going to feed the wires inside the building and connect them up. We need to work from the back of the model to do this so turn it around.



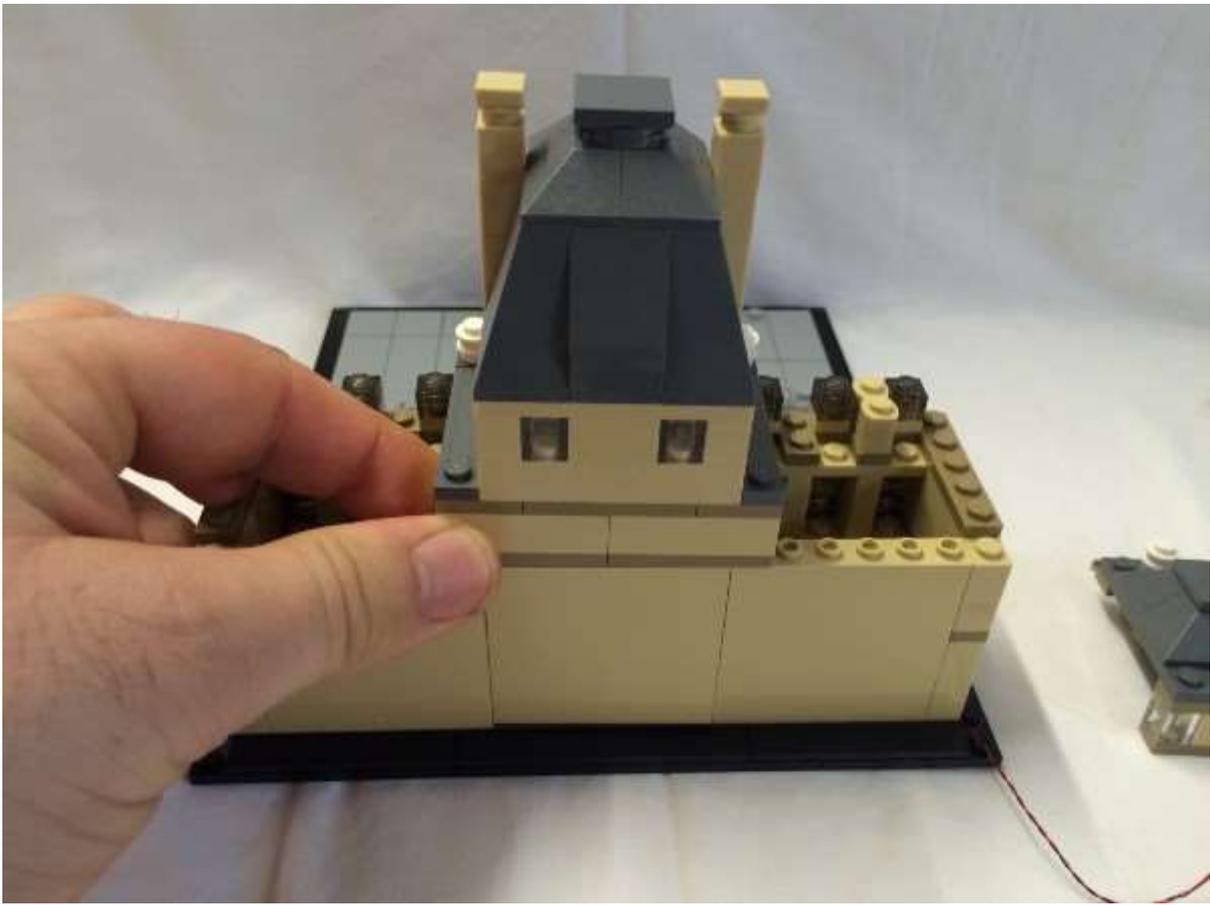
We need to remove all three roof sections. Looking down on the model, I place my index and middle finger across the brown plates with the lip on them. With my thumb positioned at the back applying gentle downward pressure, I lift from the front like I'm peeling the roof off. Do this slowly and don't be concerned about what pieces come off with the roof and what ones stay attached to the building.

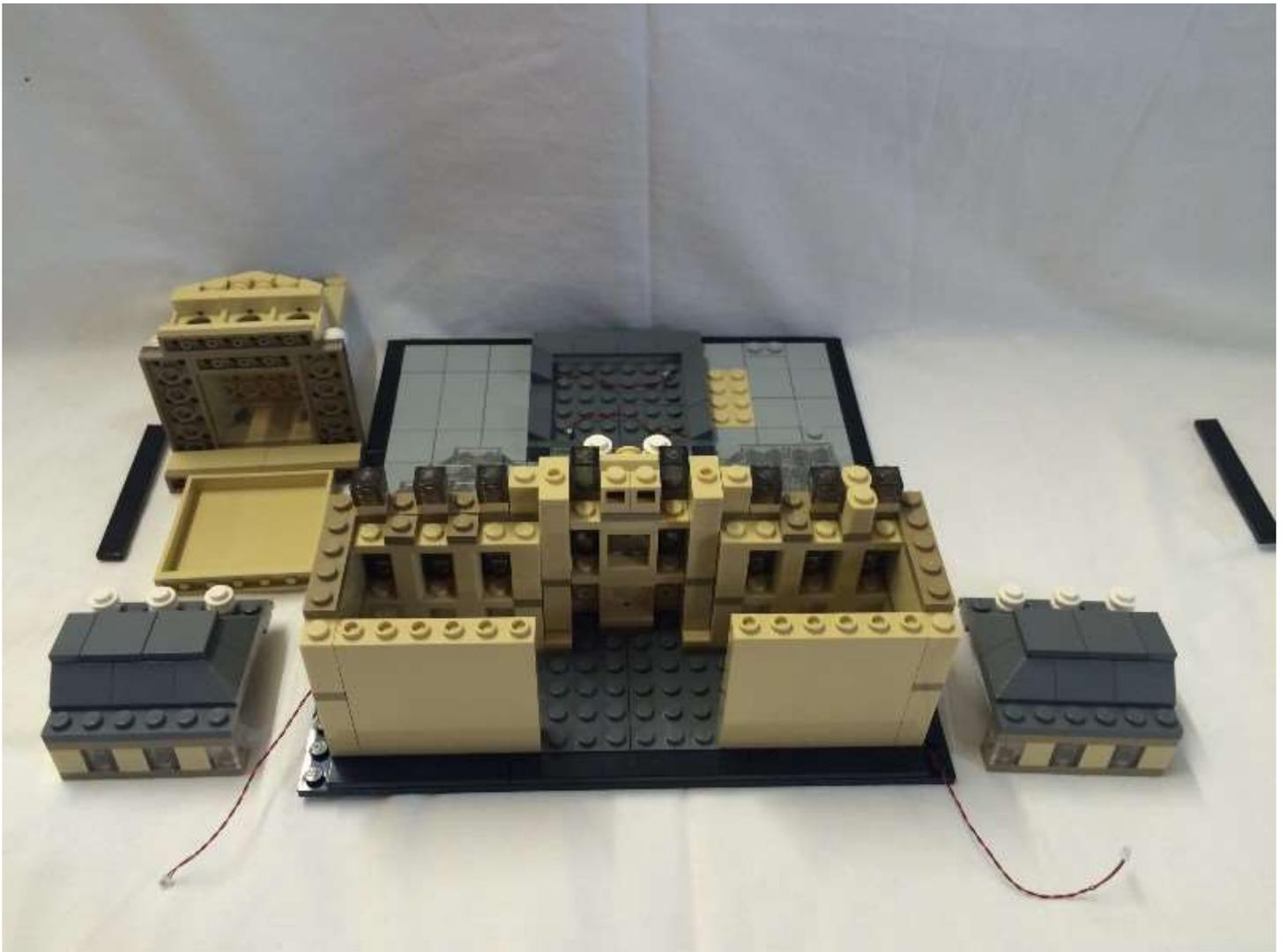


Repeat the above steps for the roof section on the left hand side.

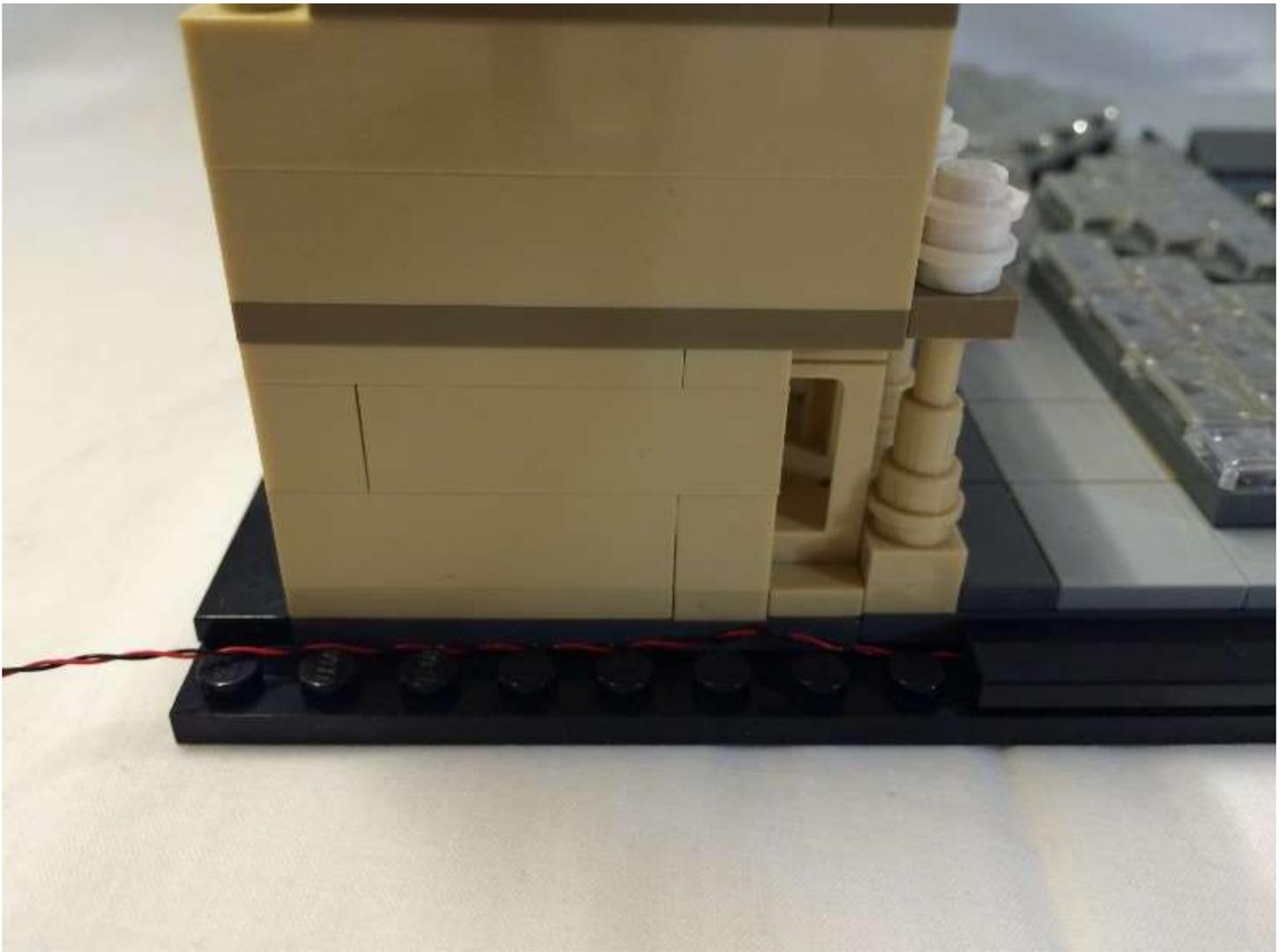


Now remove the centre roof section. I like to pry the back section away from the large left and right panels at the back. Give it a bit of a jiggle if you need to and lift up. The front of this model is not particularly secure so it should come away quite easily.

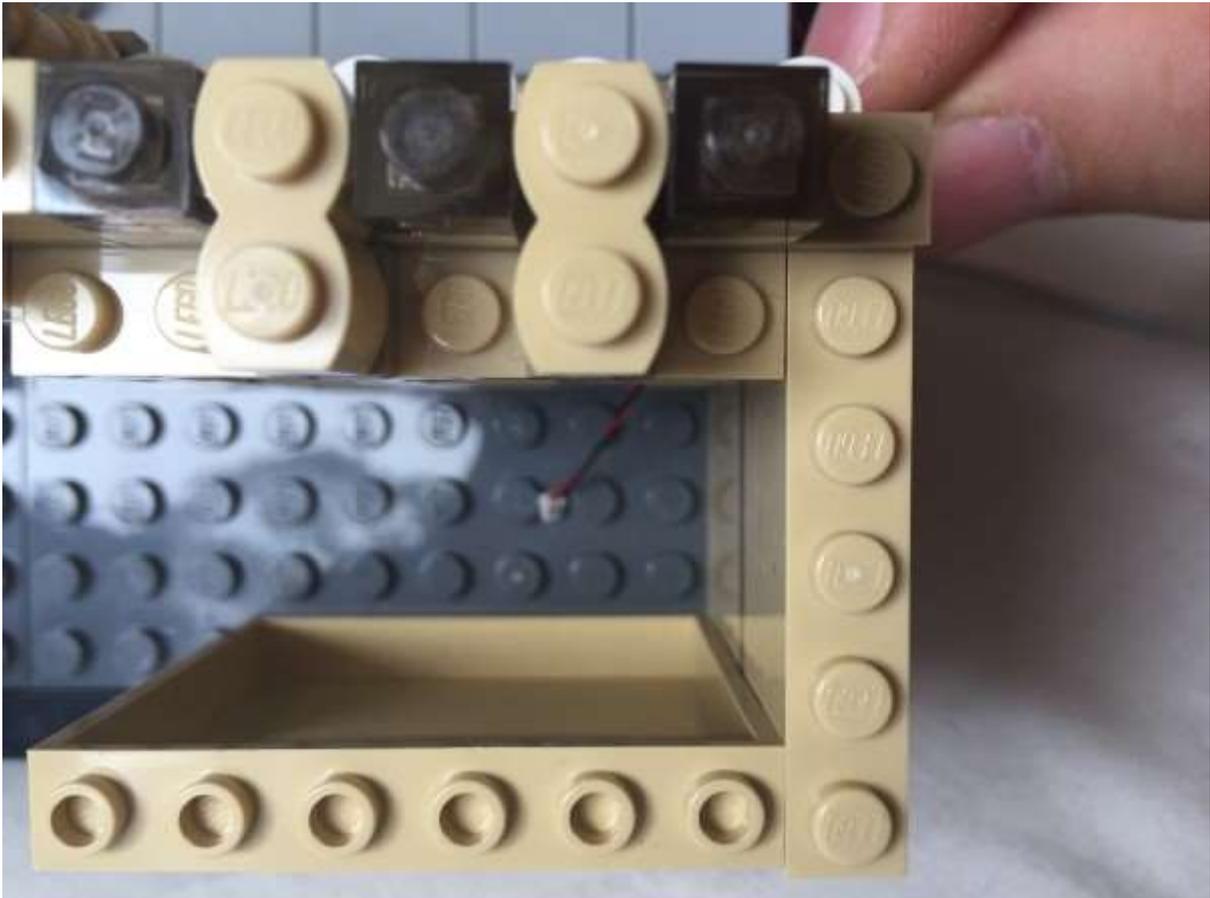
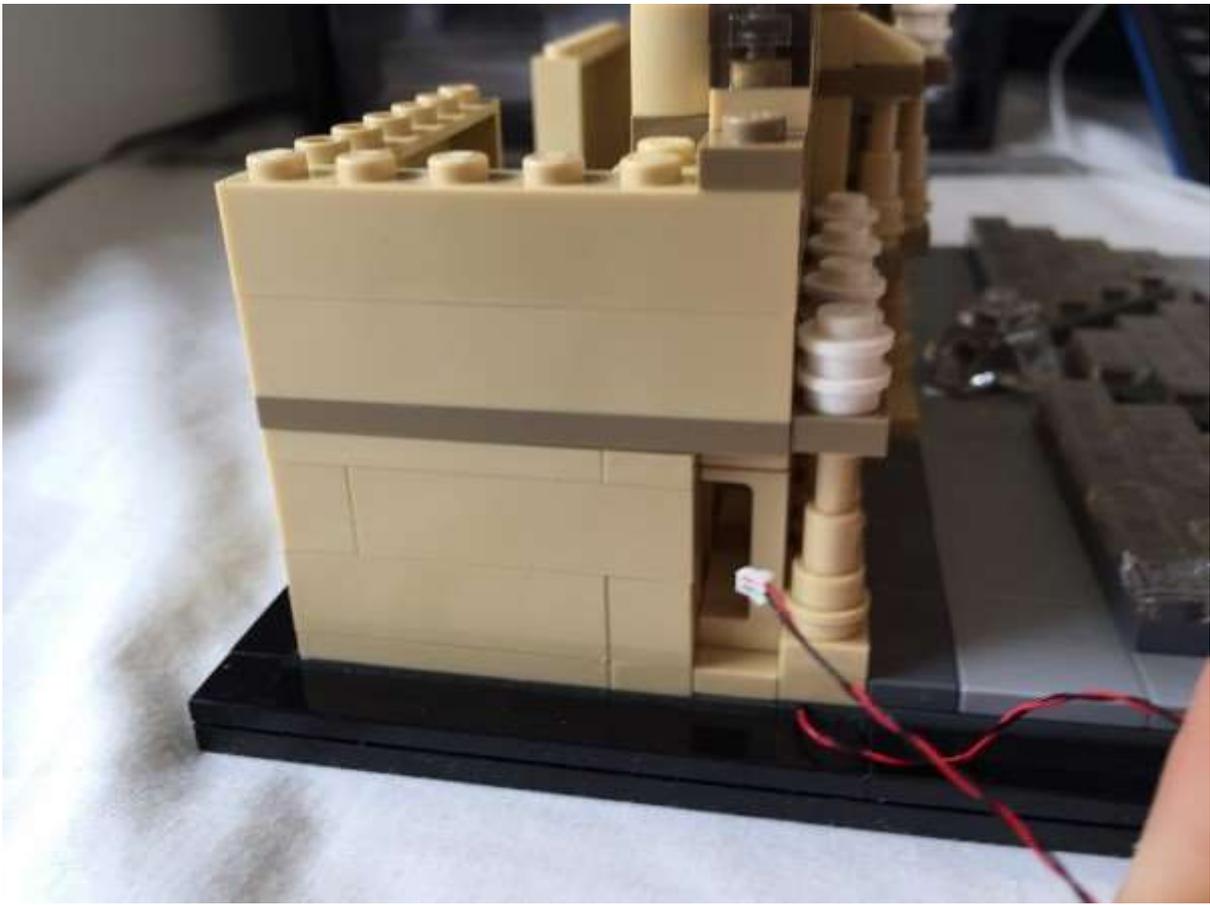




Time to feed the bit light wires into the sides of the building. I'm going to detail one side of the building but you exactly the same thing for each side.



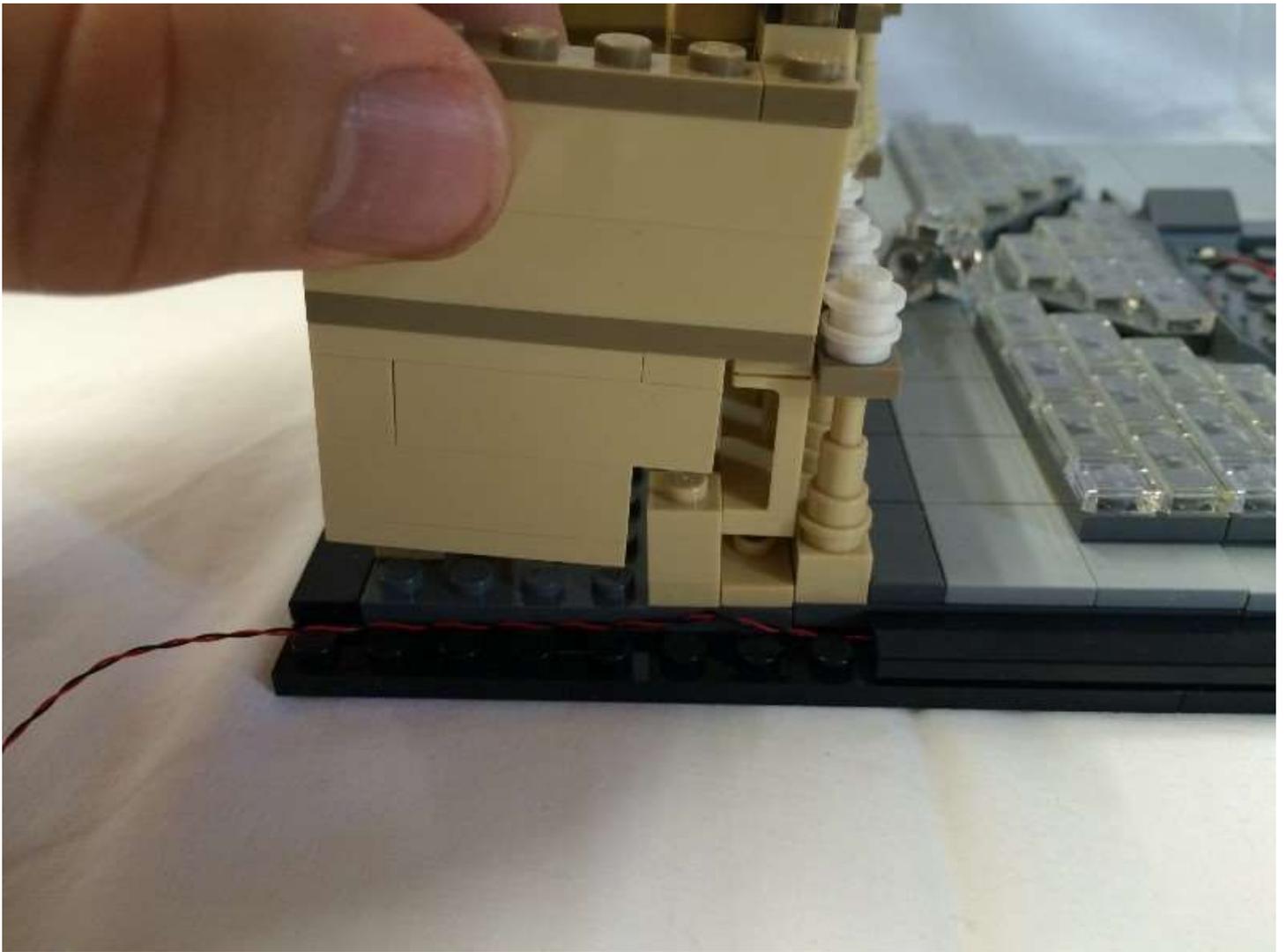
There are a couple of options here. the quickest and simplest method is to feed the wire in behind the pillar, behind the window piece and through to the back.



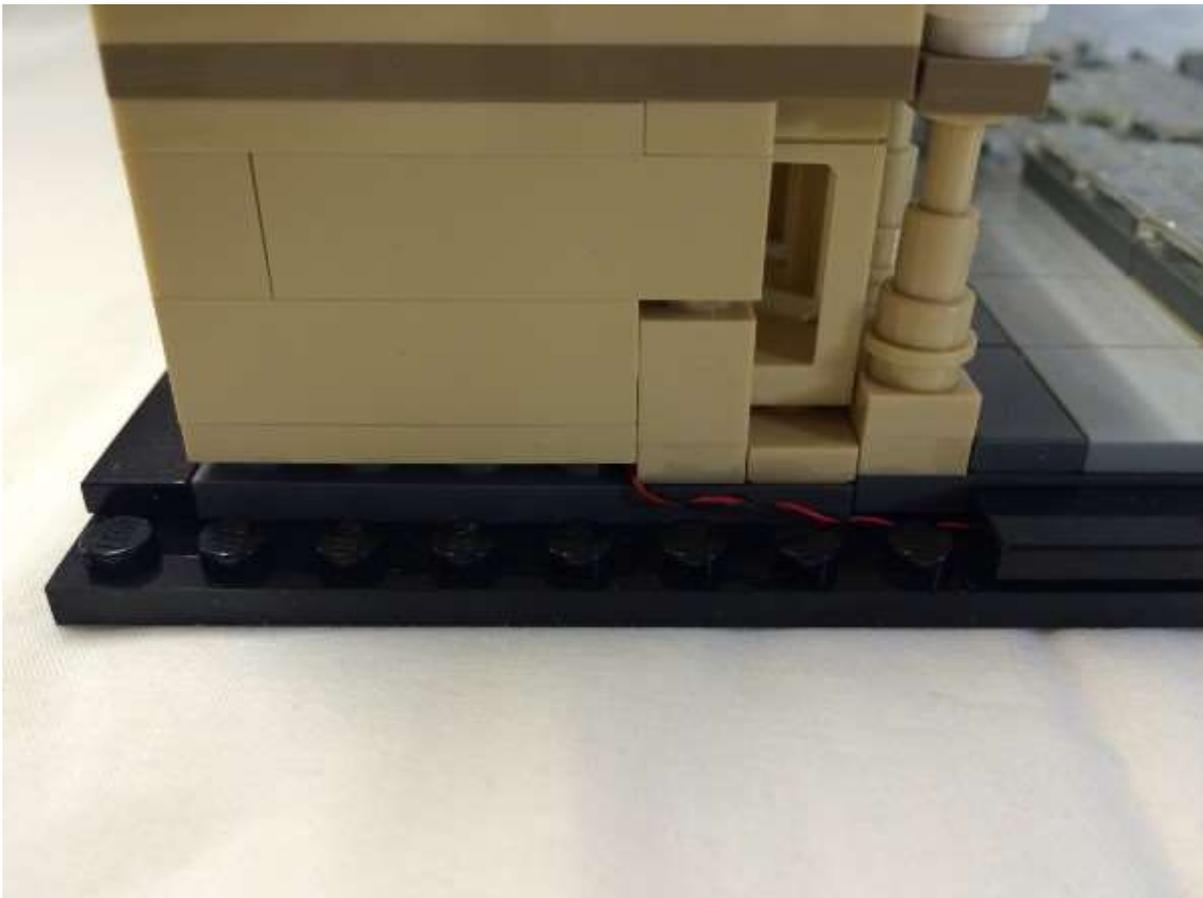
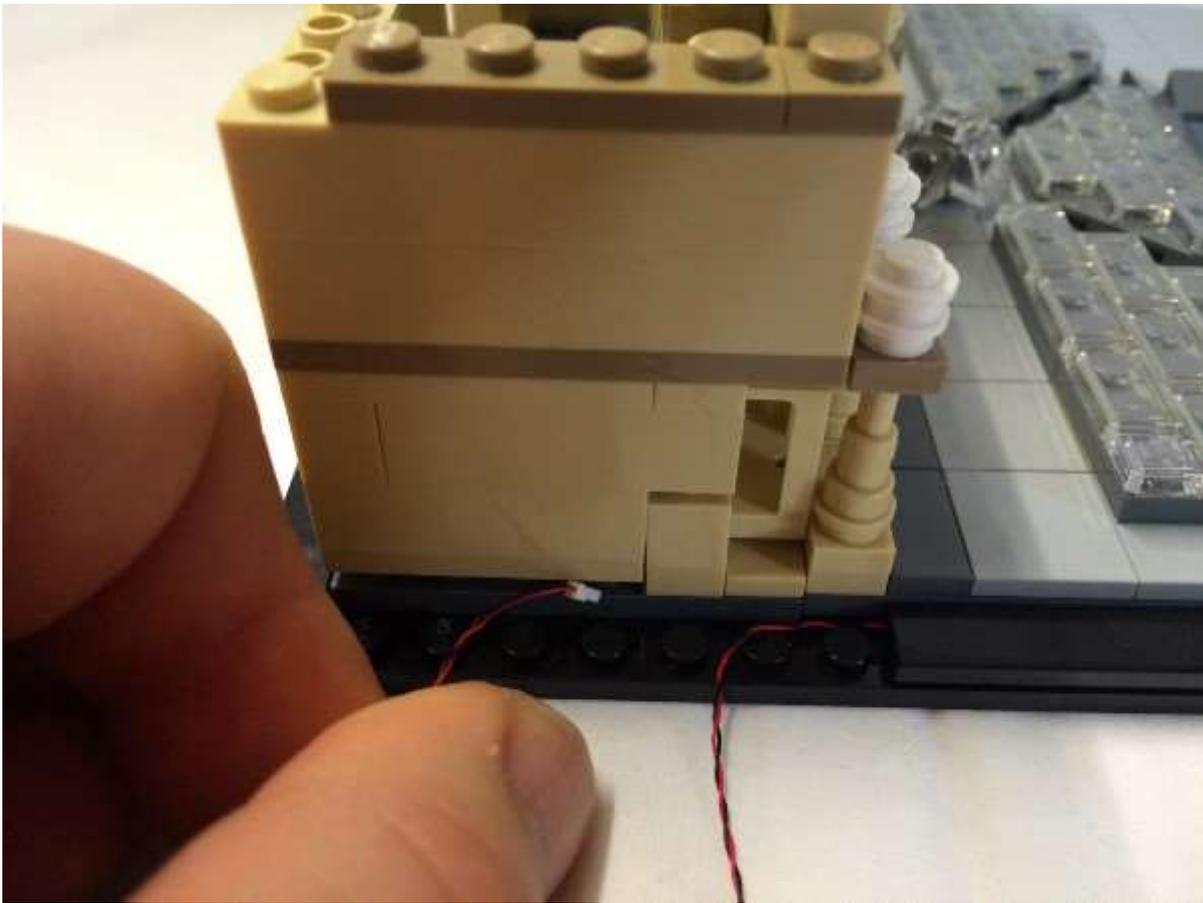


You'll notice that this method does leave some wire clearly visible. If this doesn't bother you, then this is the way to go!

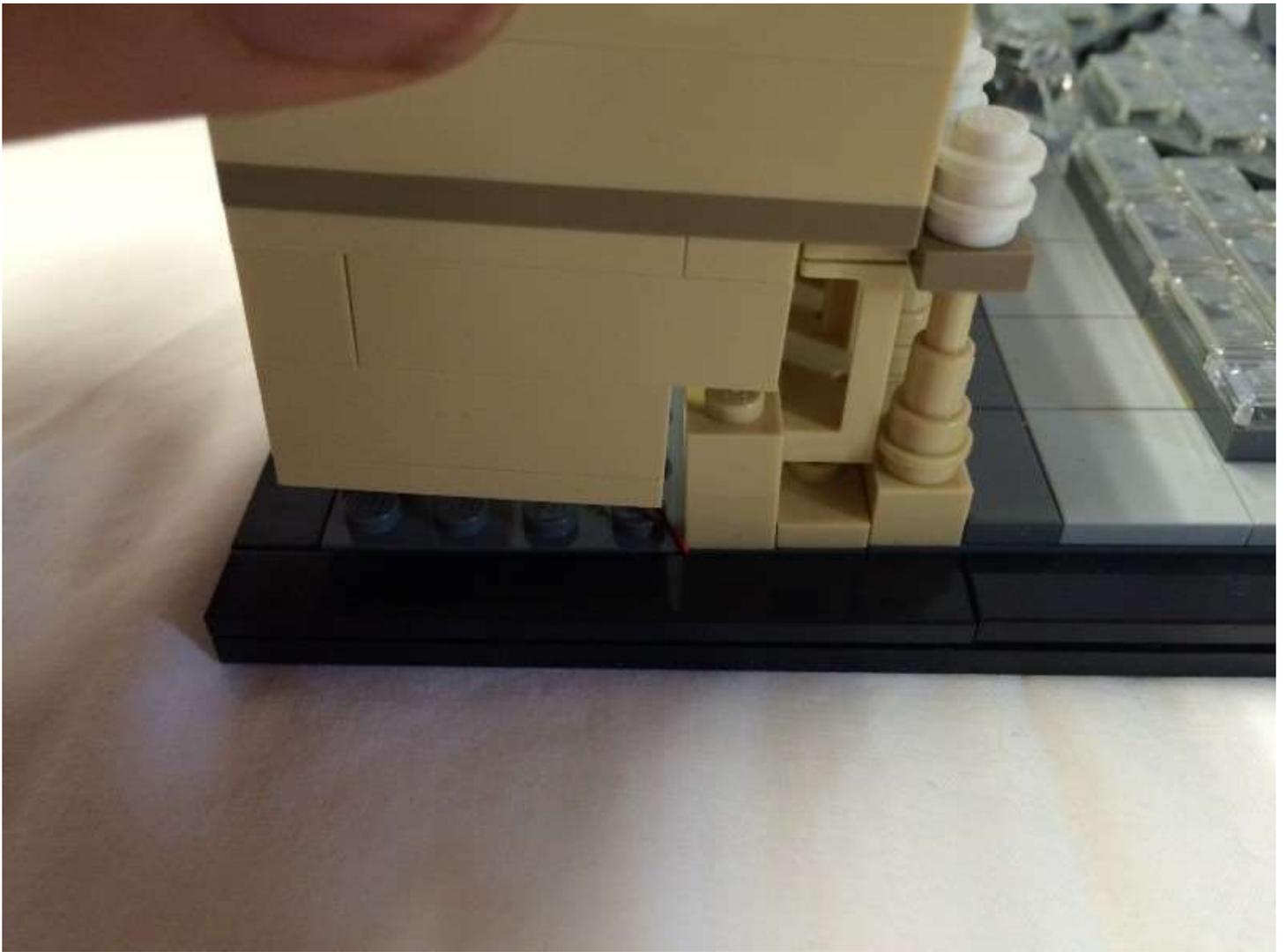
Alternatively, there is a 1 x 4 tan brick and a 1 x 1 tan brick near the bottom of the wall. We are going to feed the wire in between these two bricks. Gently lift the wall away from the base. If you have a brick separator, it might come in handy for this bit. I have found that the 1 x 1 brick tends to stay in place while the 1 x 4 brick comes away with the rest of the wall.



Feed the end of the wire into the gap between the bricks and gently pull it through to from the other side of the wall. Let the wall rest back in place but do not push it down and lock it in to position just yet.

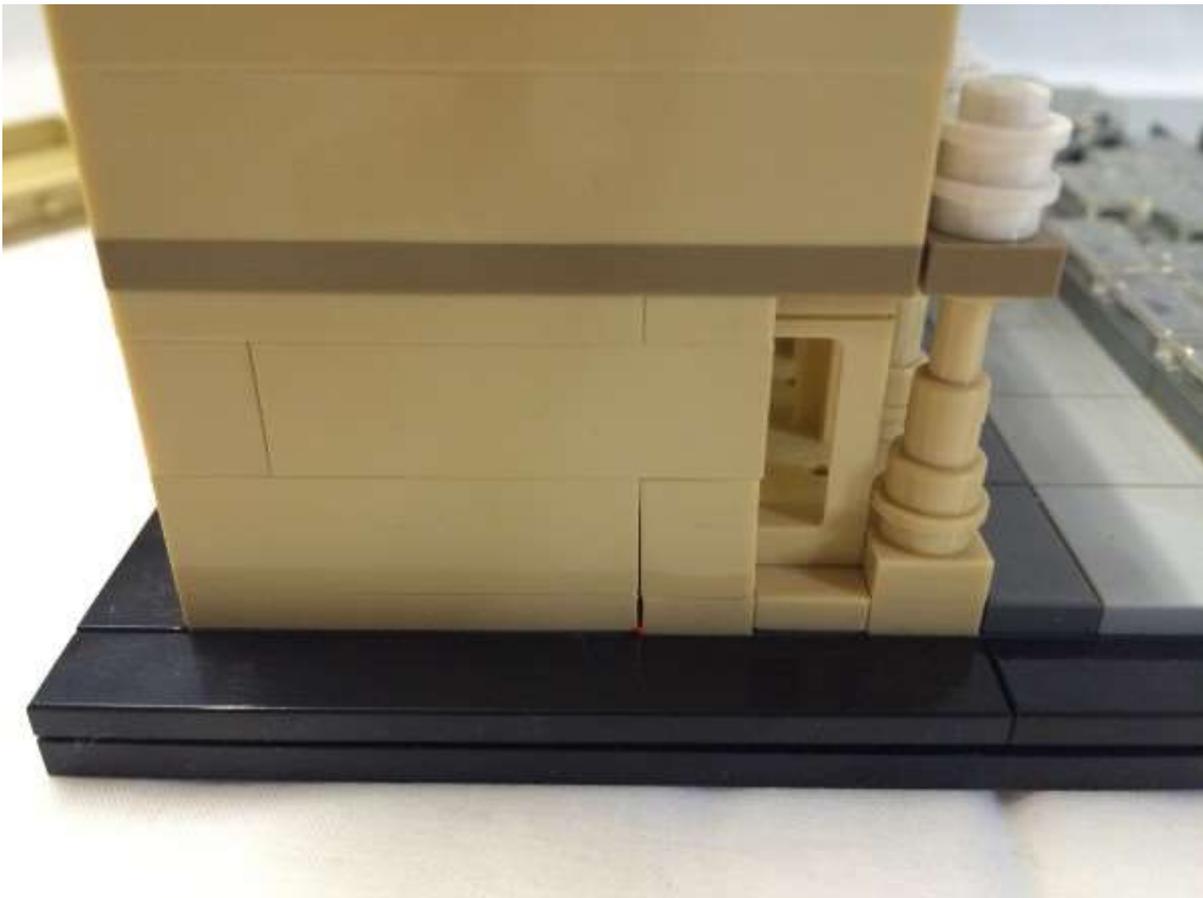


We need to fit the last 1 x 8 tile now. Similarly to the first one, when we put this tile back on, the wire may get pulled back and down. We want to allow this to easily happen. Lift the building wall again and gently replace the 1 x 8 tile.



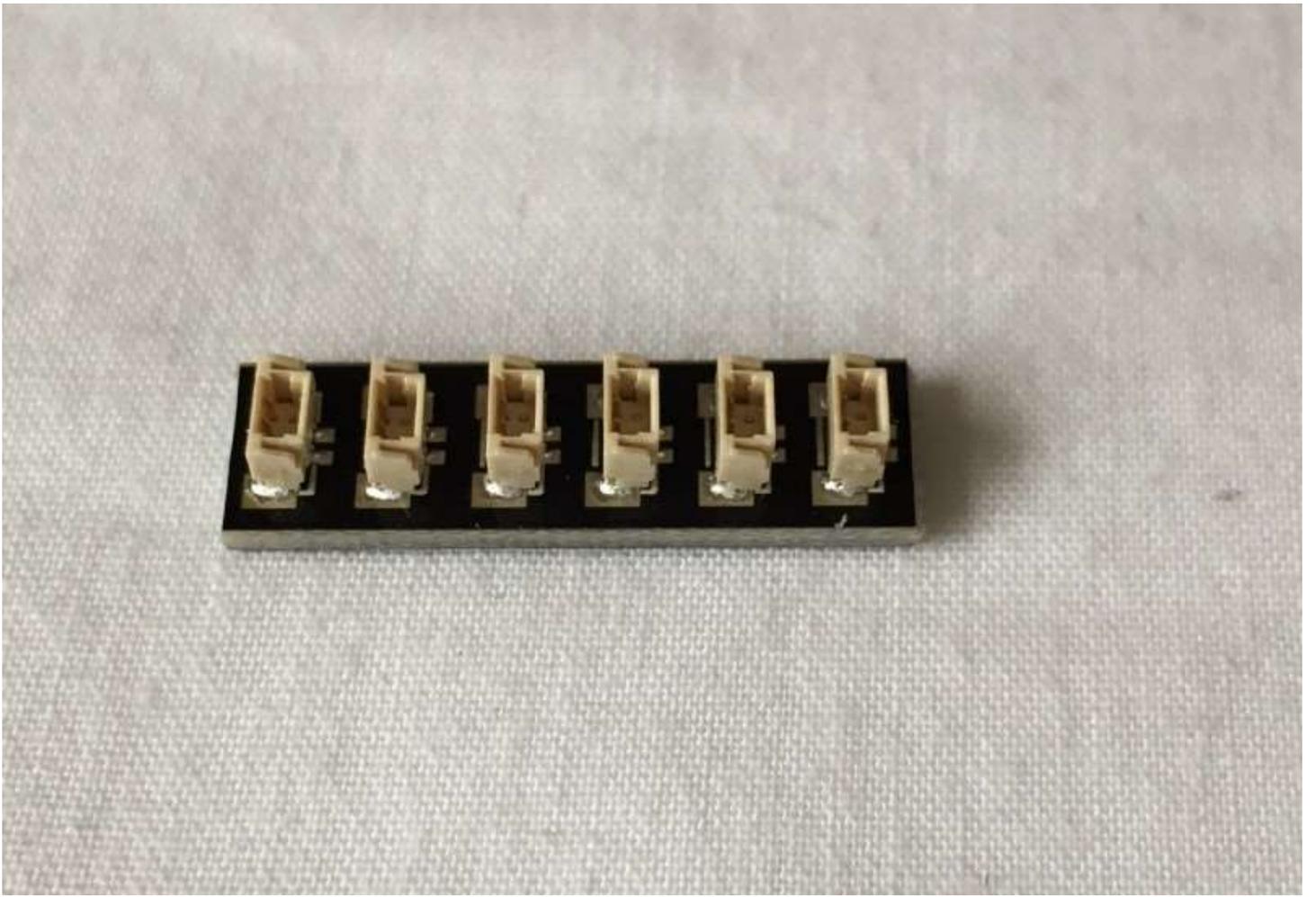
From the inside of the wall, gently pull the wire so that it lies against the side of the 1 x 1 tan brick. Move the wall back into place and let it rest in position.

If your wires are in between the tan bricks, secure the wall back into place.

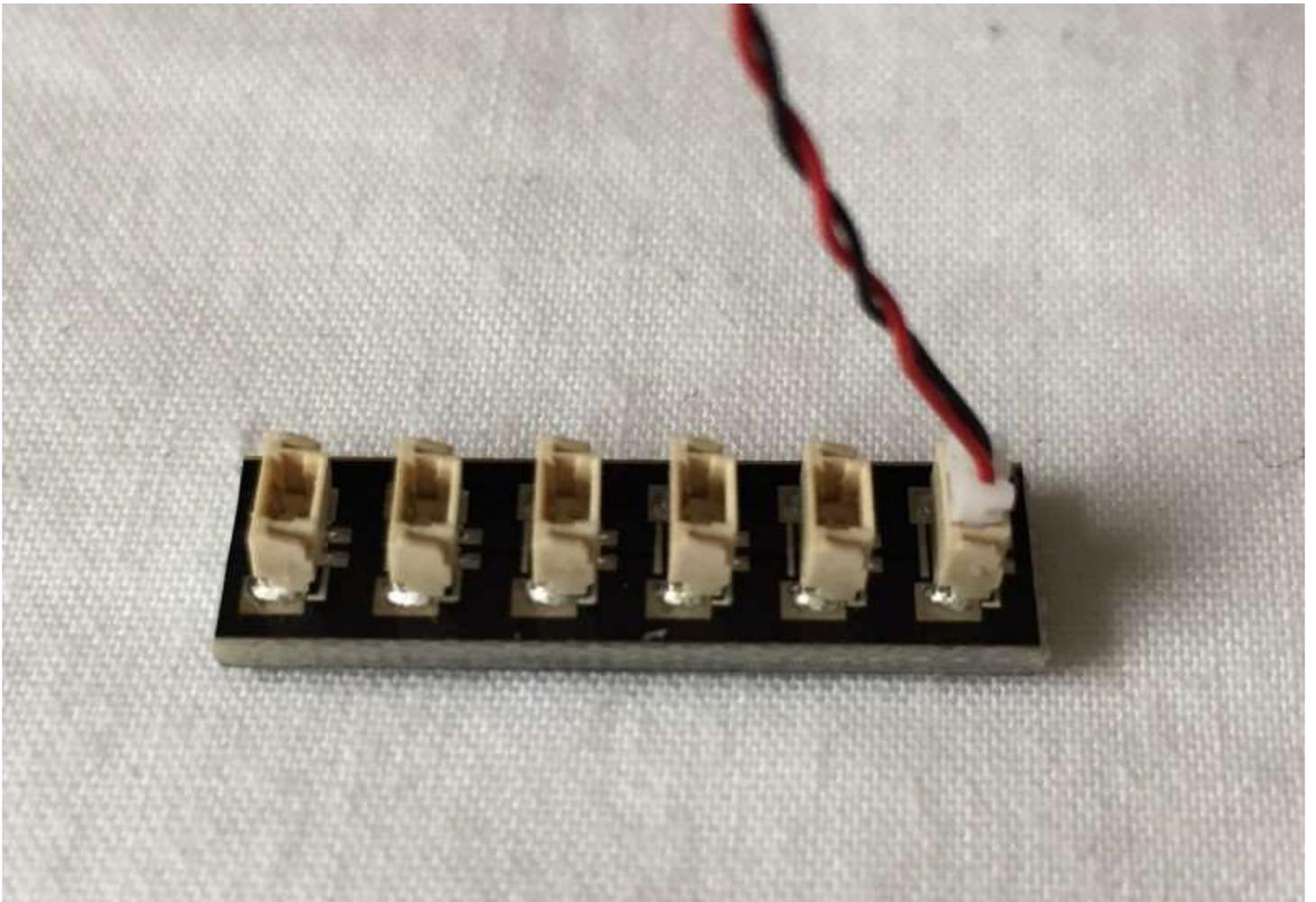


Repeat these steps for the other side of the model.

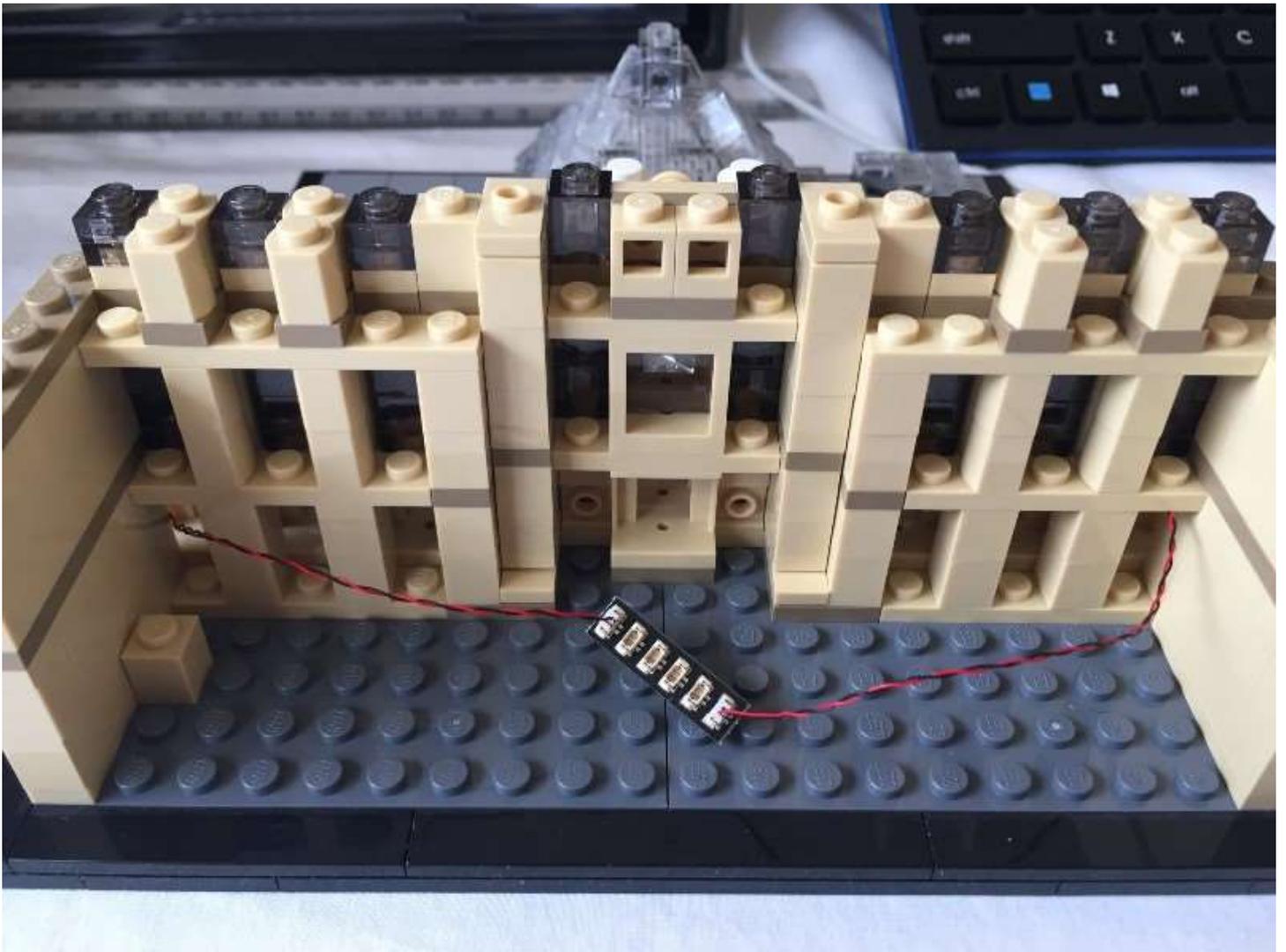
Grab the **6 port expansion board**.



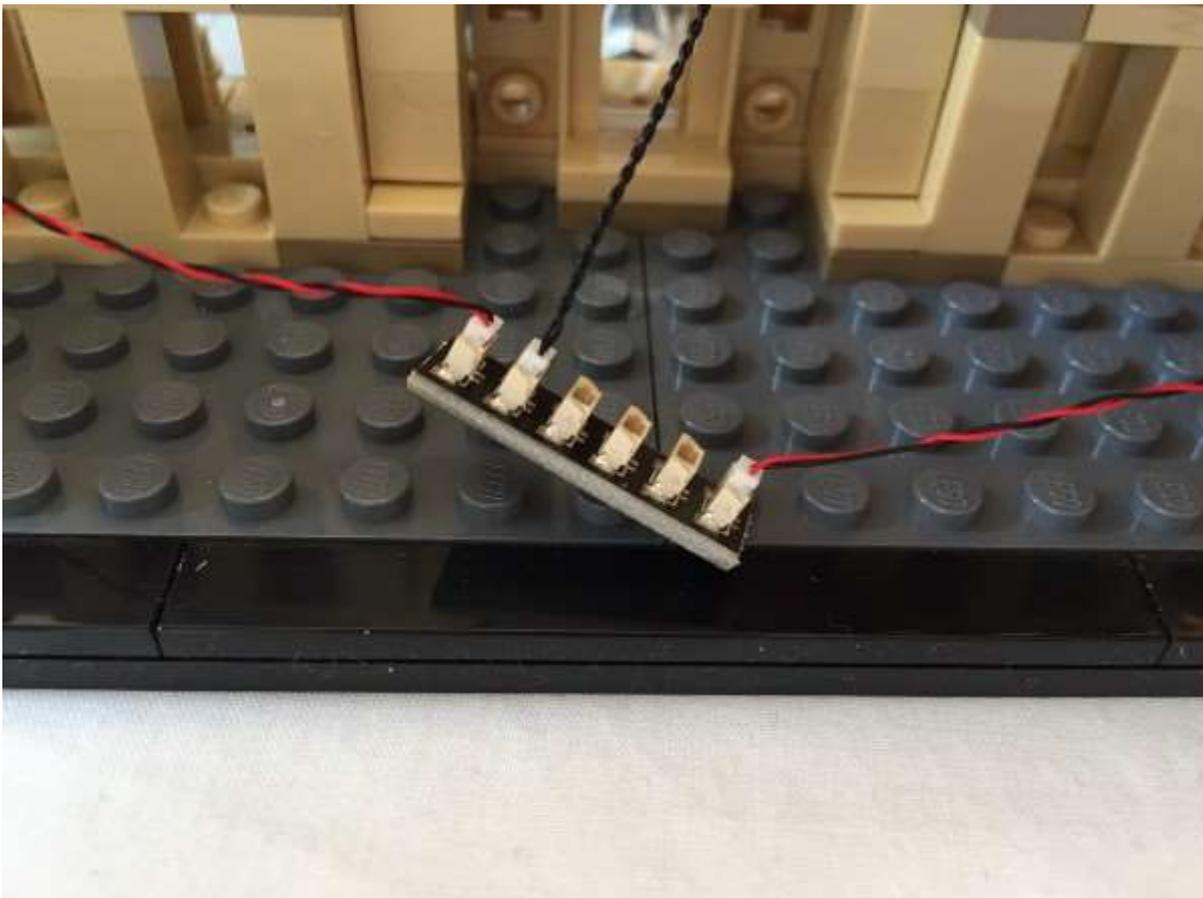
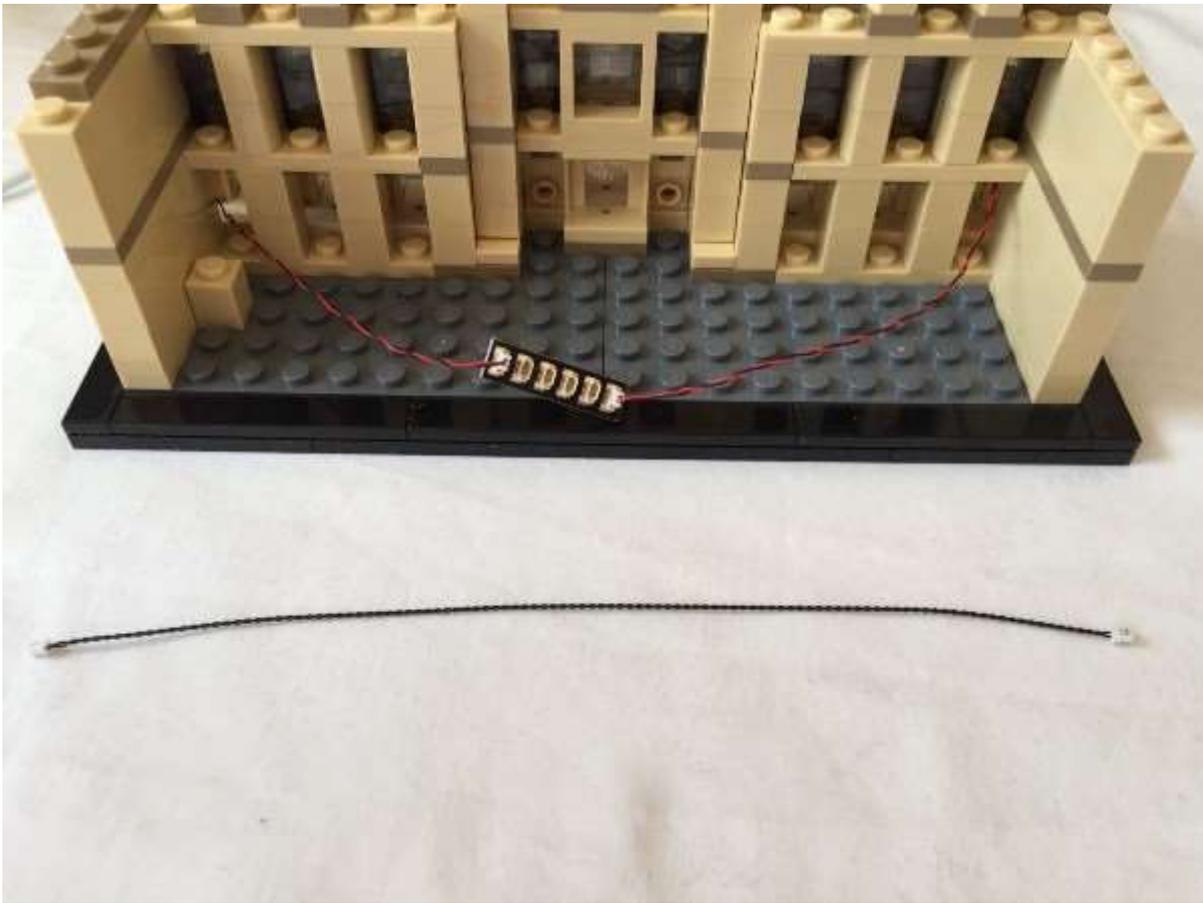
Connect both of the plug ends of the **Blue bit light** wires to this expansion board.



With both wires connected and the two remaining rear panels removed, your model should resemble the picture below.

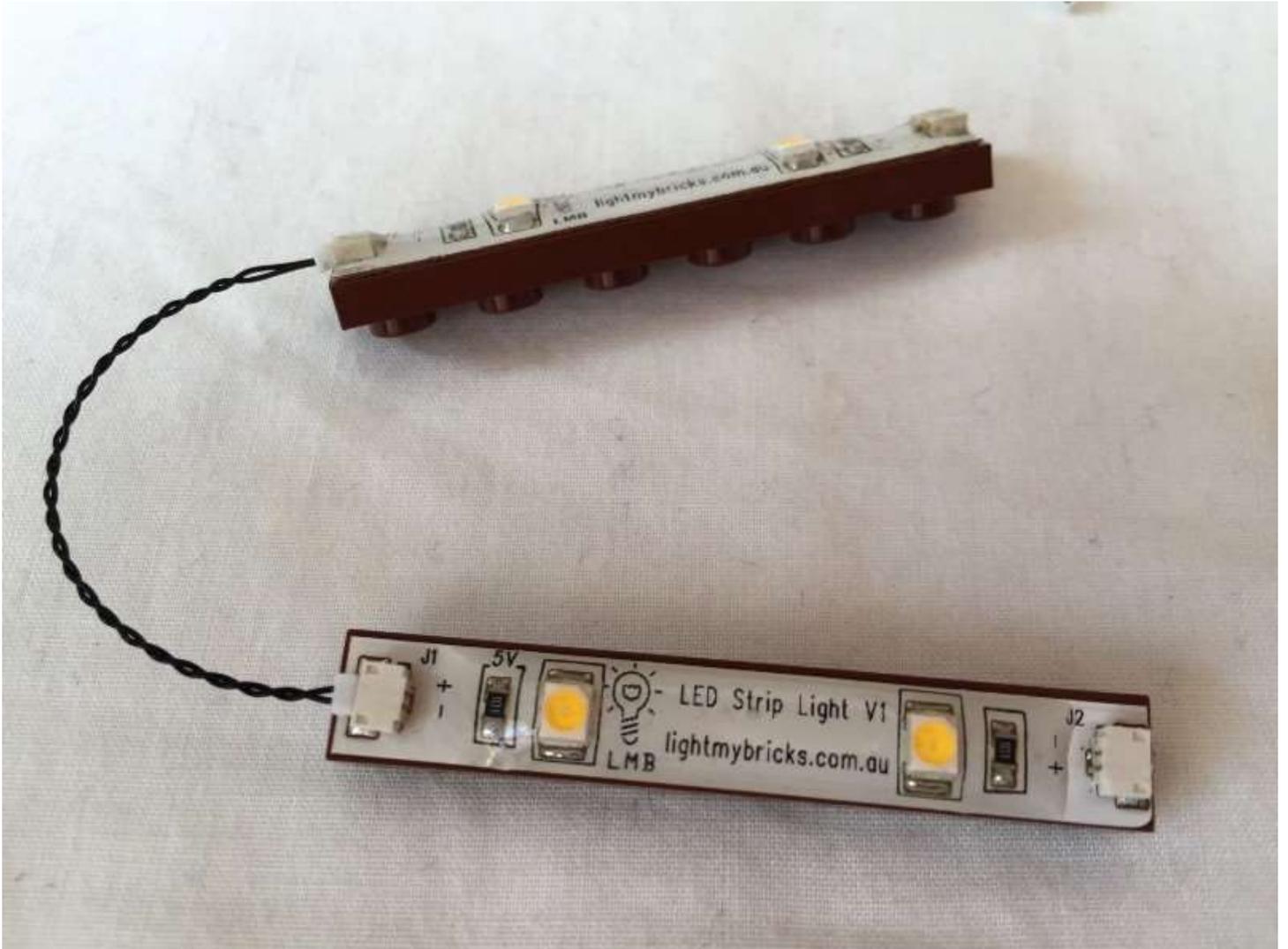


Find your **15cm connecting cable** and connect it to the **6 port expansion board**.

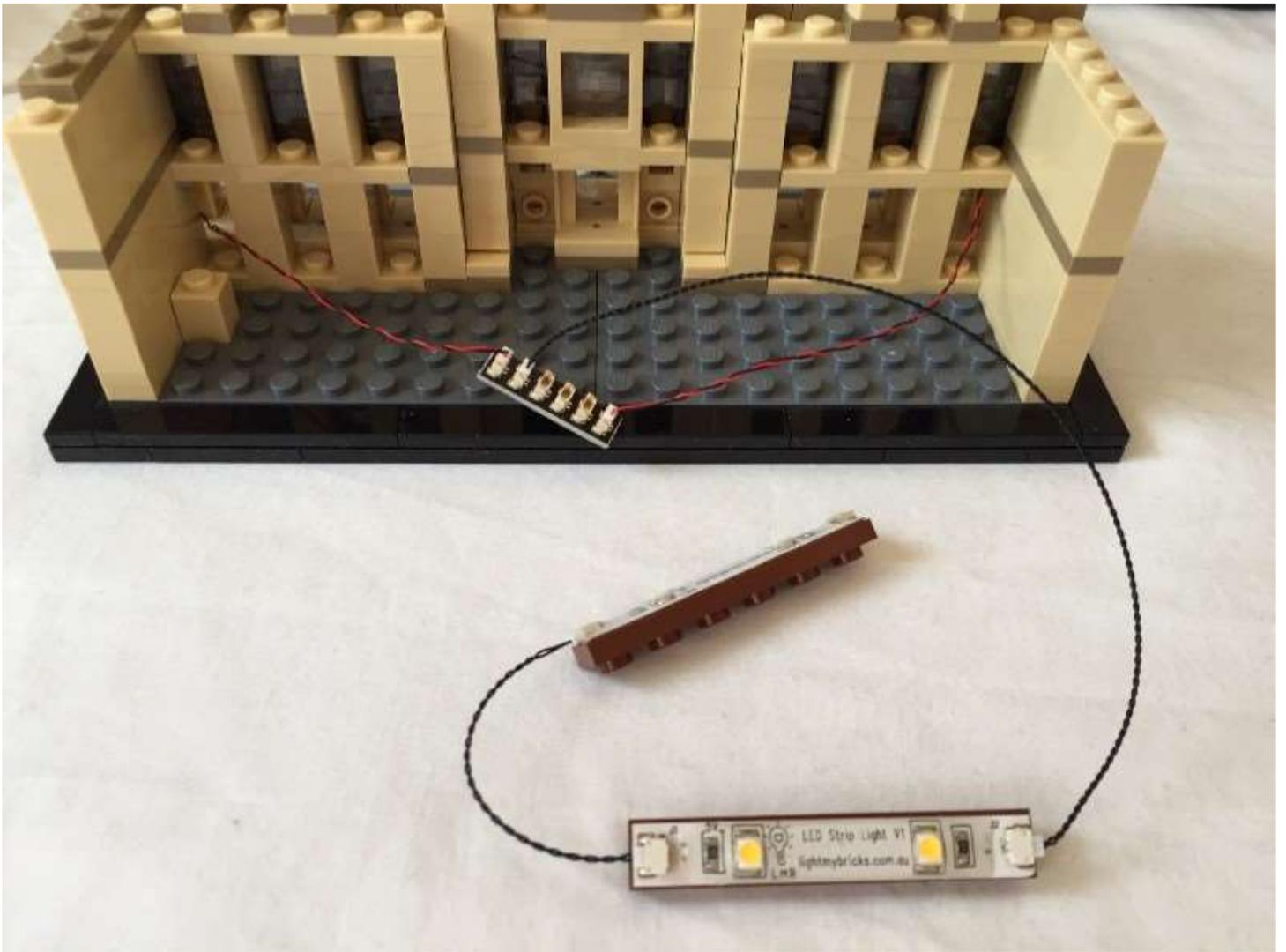


Find your two strip lights and attach them to 1 x 6 plates as seen in the “IMPORTANT Things to Note” section at the beginning of this guide.  
(1 x 6 plates are not included but can be purchased separately if you don’t already have your own)

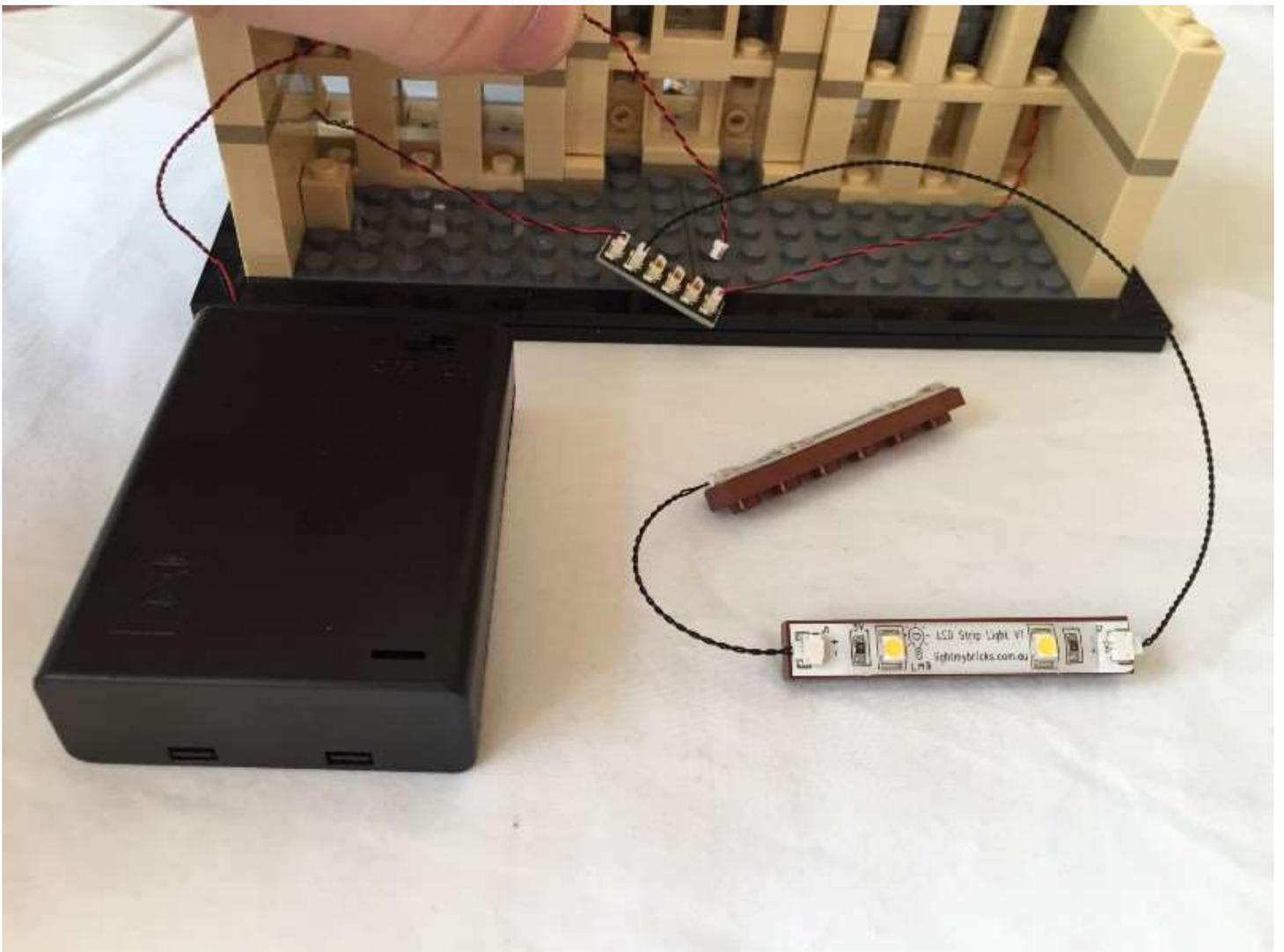
With your remaining **5cm connecting cable**, connect the two **LED Strip Lights**.



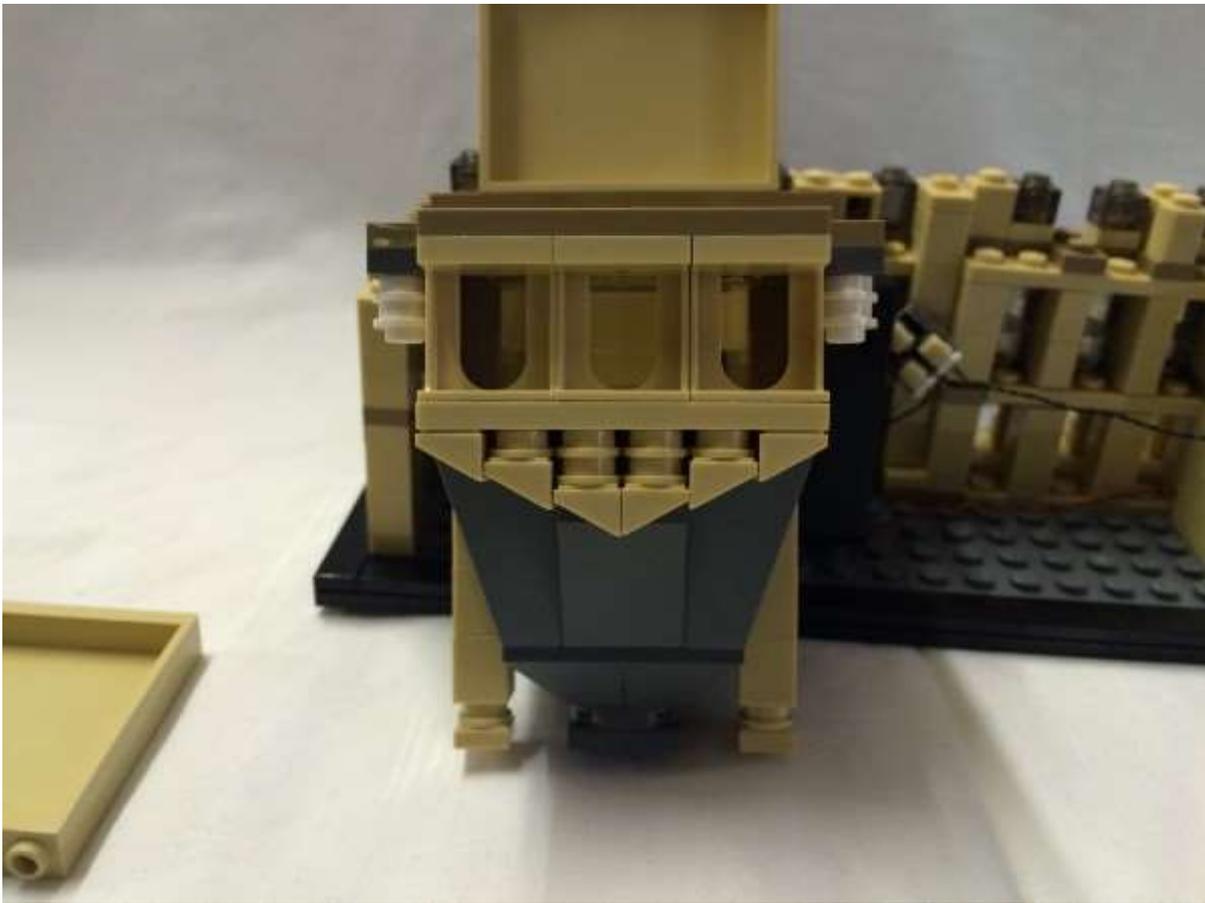
Now you can connect one of the **LED strip lights** to the **15cm connecting cable**.



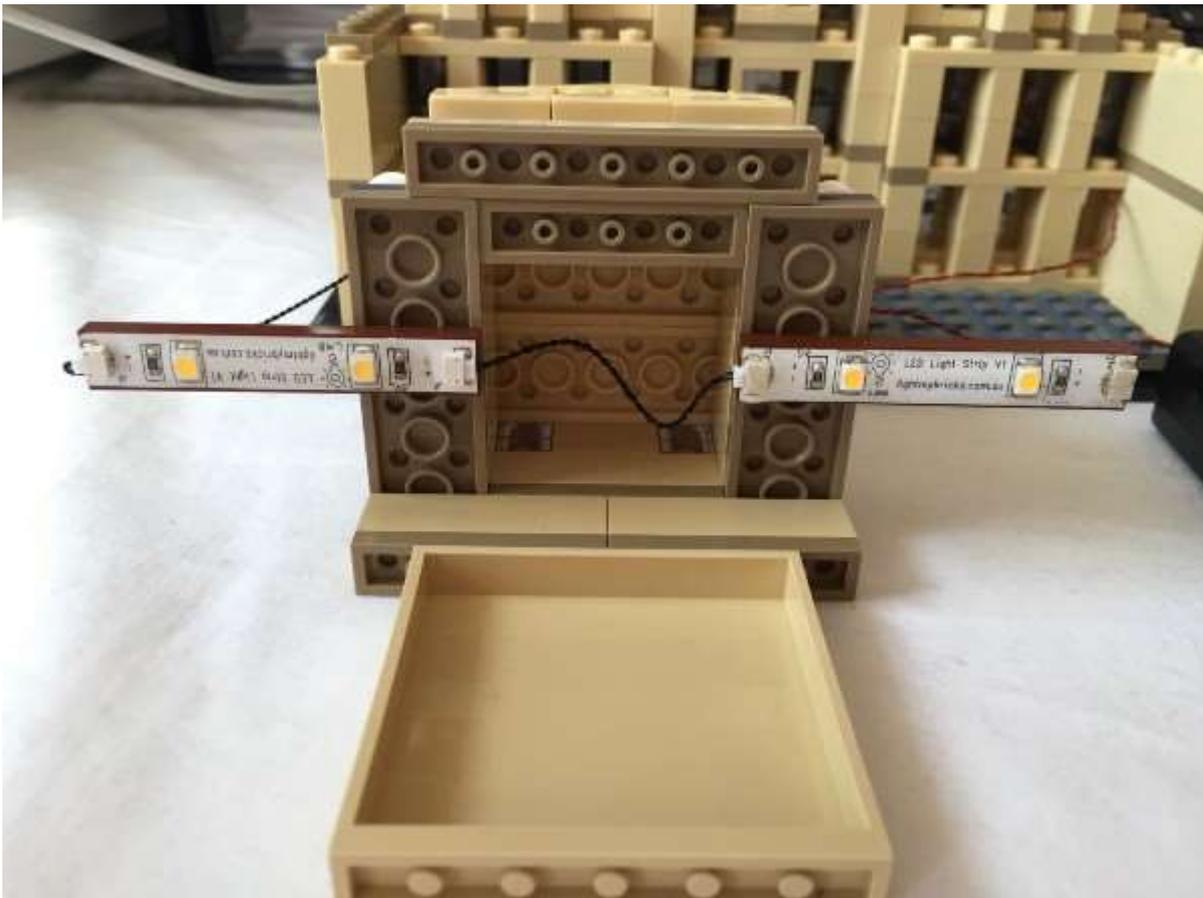
Connect the battery pack to the **6 port expansion board**.



Grab the centrepiece from the building and put it in front of you where you can work with it.



Attach the 1 x 6 plates with the strip lights attached exactly as shown in the picture.

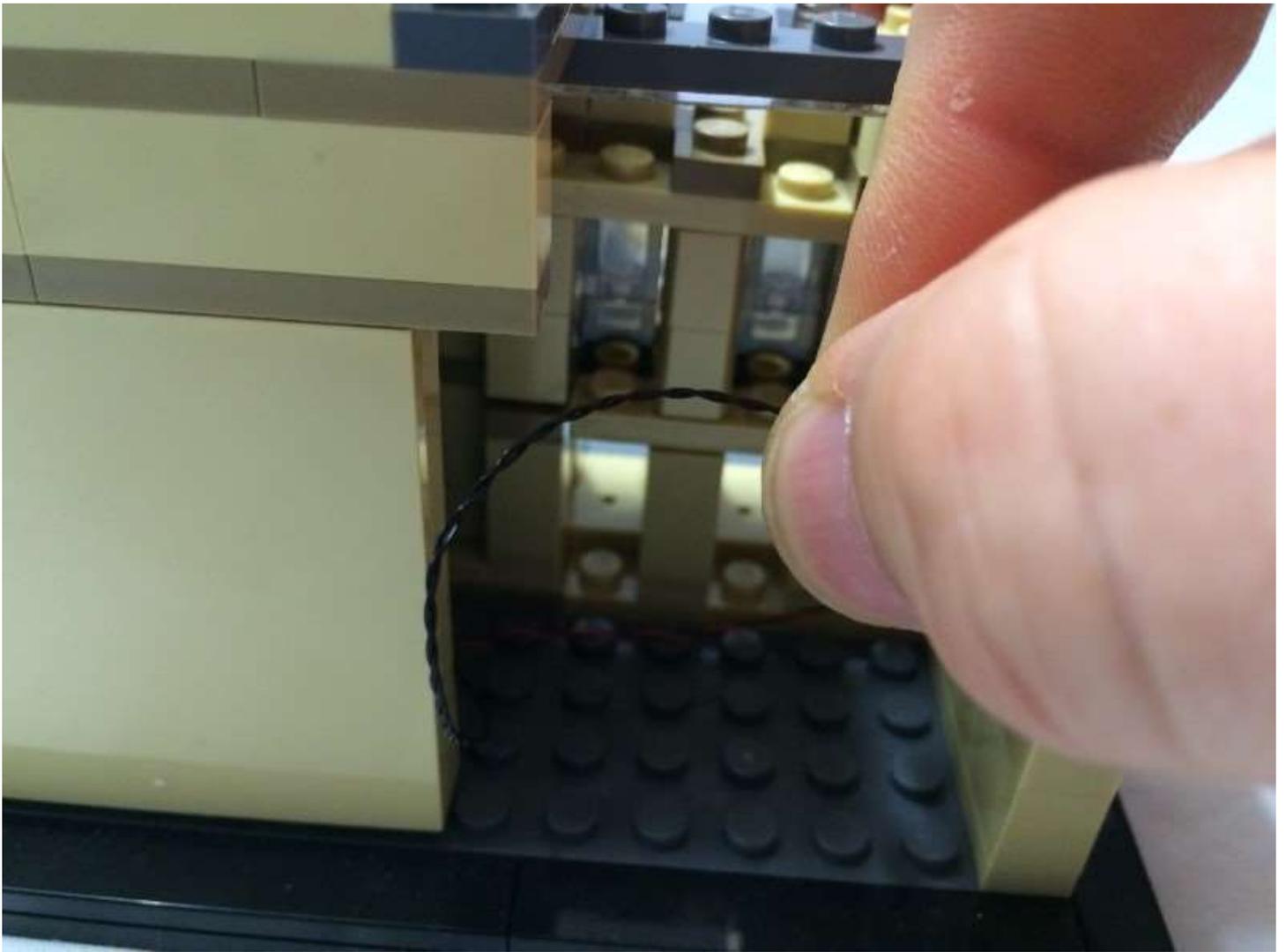


Ok.....let's put her back together! If you want to conceal the battery pack inside the model, now is the time to position it inside the building.

Sit the battery pack inside the building making sure the switch is facing you and rest the centrepiece in place (don't secure it just yet).



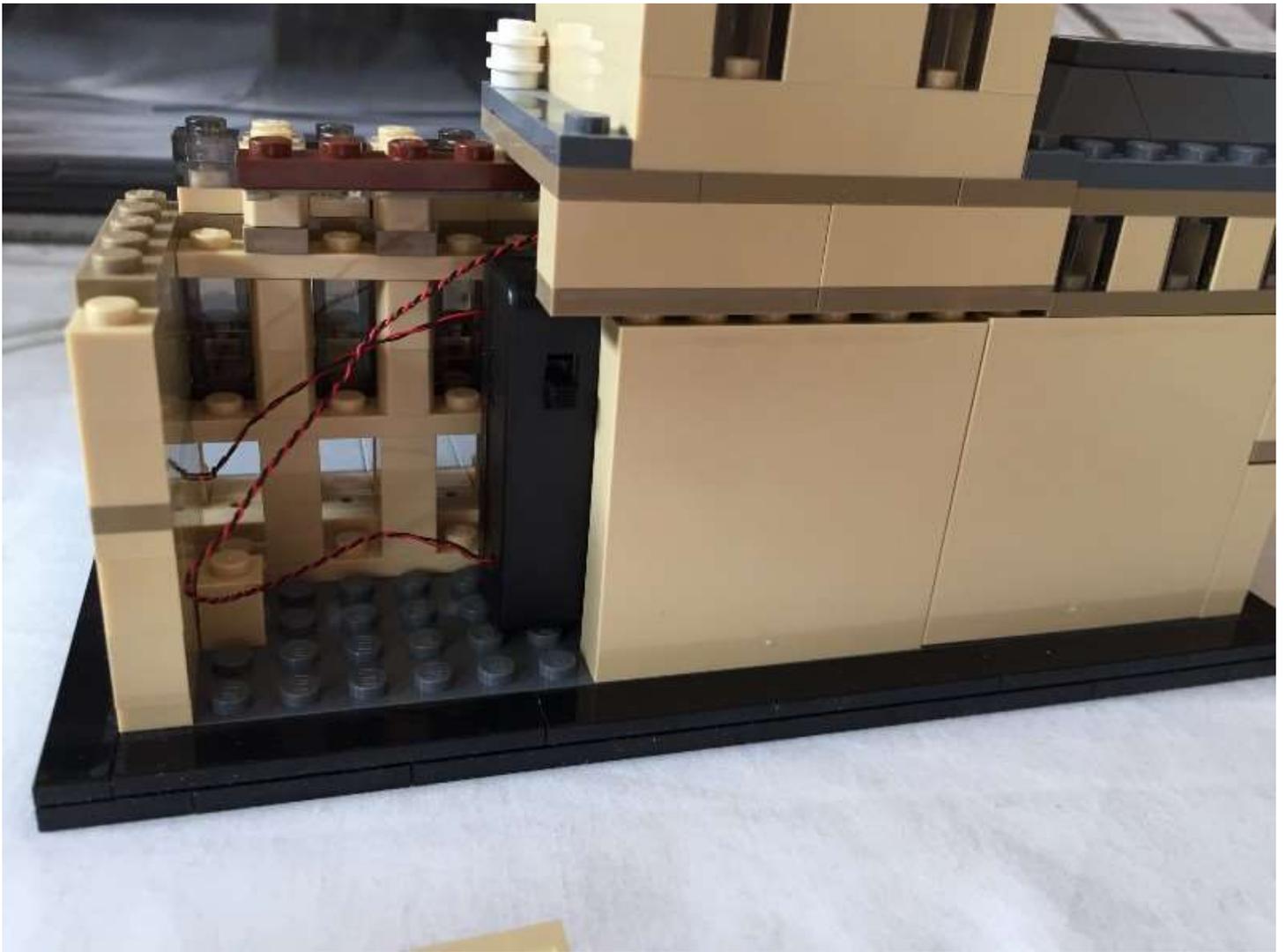
If you have any connecting cable sticking out, move it around so that it stays inside the building.



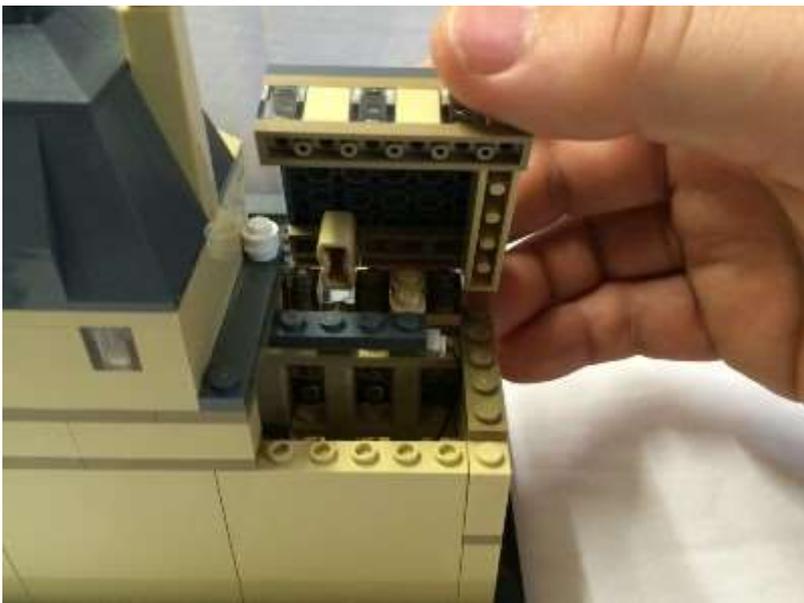
Replace the rear panels remembering that they partly sit underneath the centrepiece.

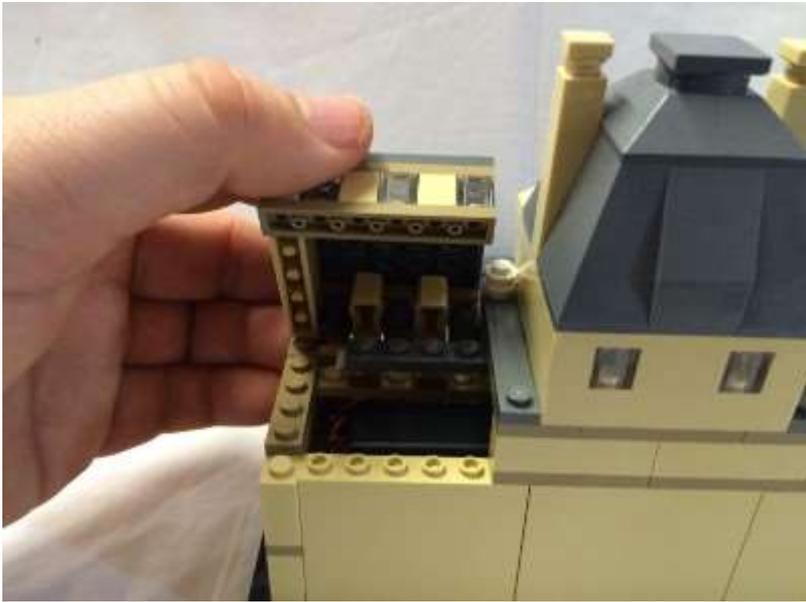


Push the battery pack towards the centre of the model where it won't obstruct the light coming out the front sides.



Push the centrepiece down to secure it and the side panels. Then attach each side roof.



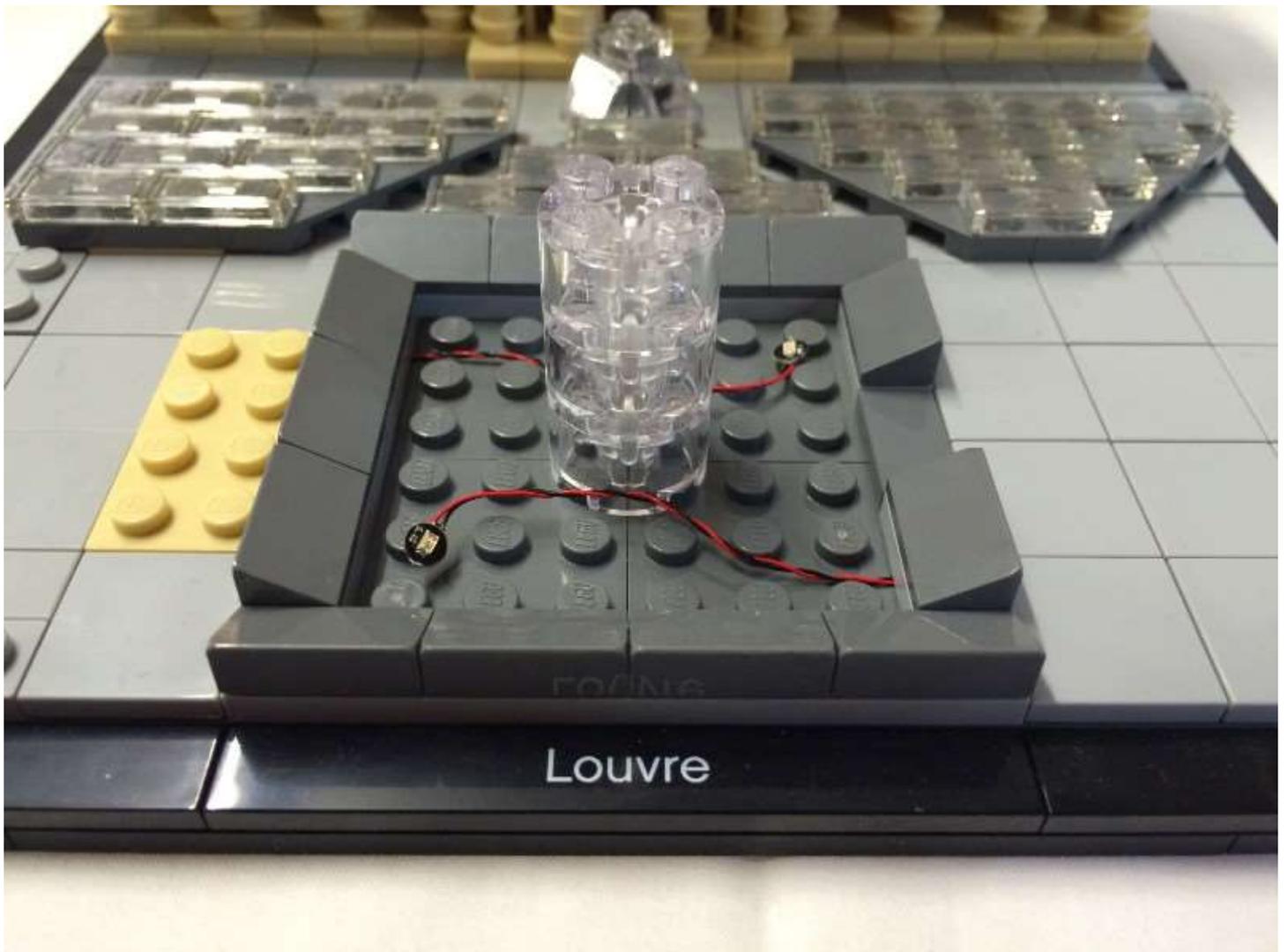




Turn the model around so we can finish the front.



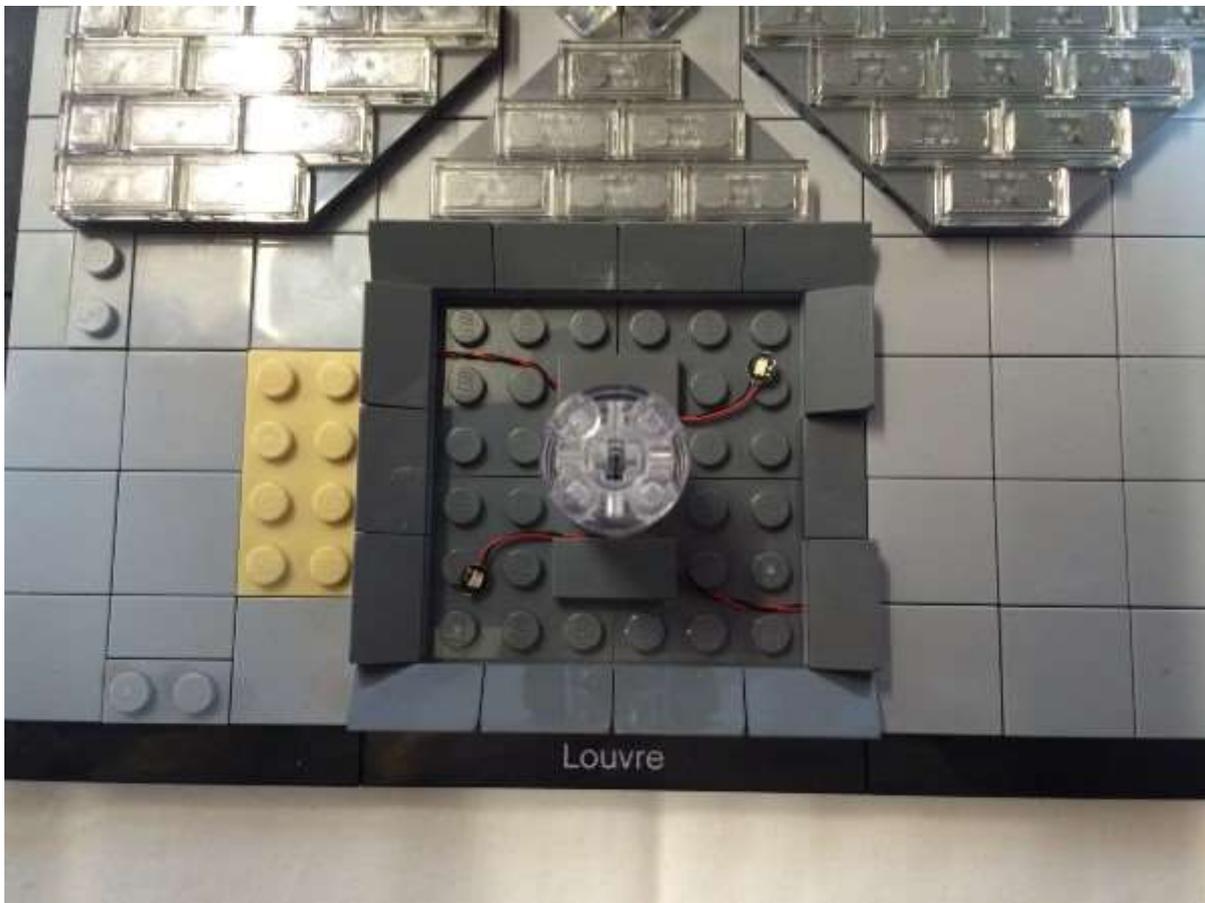
Replace the trans-clear round bricks that came from the centre of the pyramid.



The wires from the lights should run naturally close to the round bricks. Gently replace two of the 1 x 2 grey tiles which will hold the wires in place.



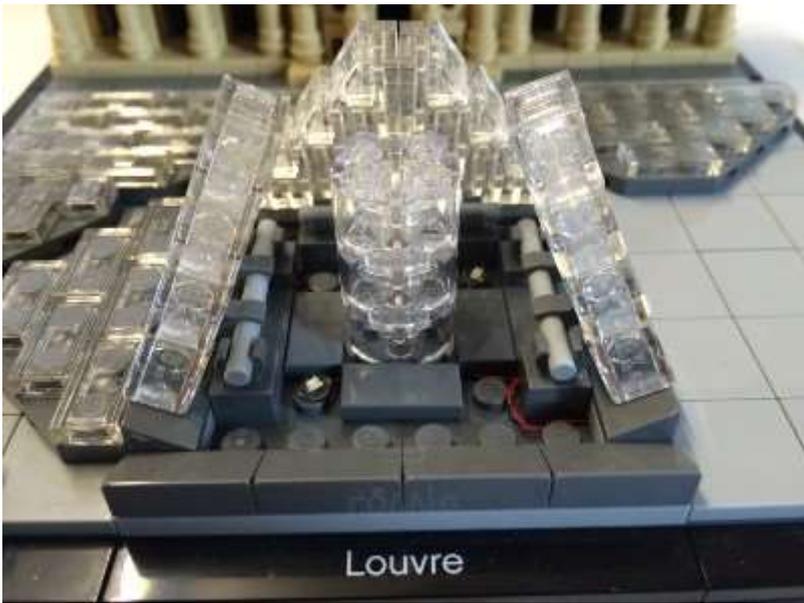
With both tiles in place the LEDs should be facing up and in approx. the centre of the four studs in each corner. Place the other two 1 x 2 plates around the round bricks.



Replace the three “water” pieces back on the left hand side of the pyramid.



Replace the 4 sides of the pyramid and the centrepiece.

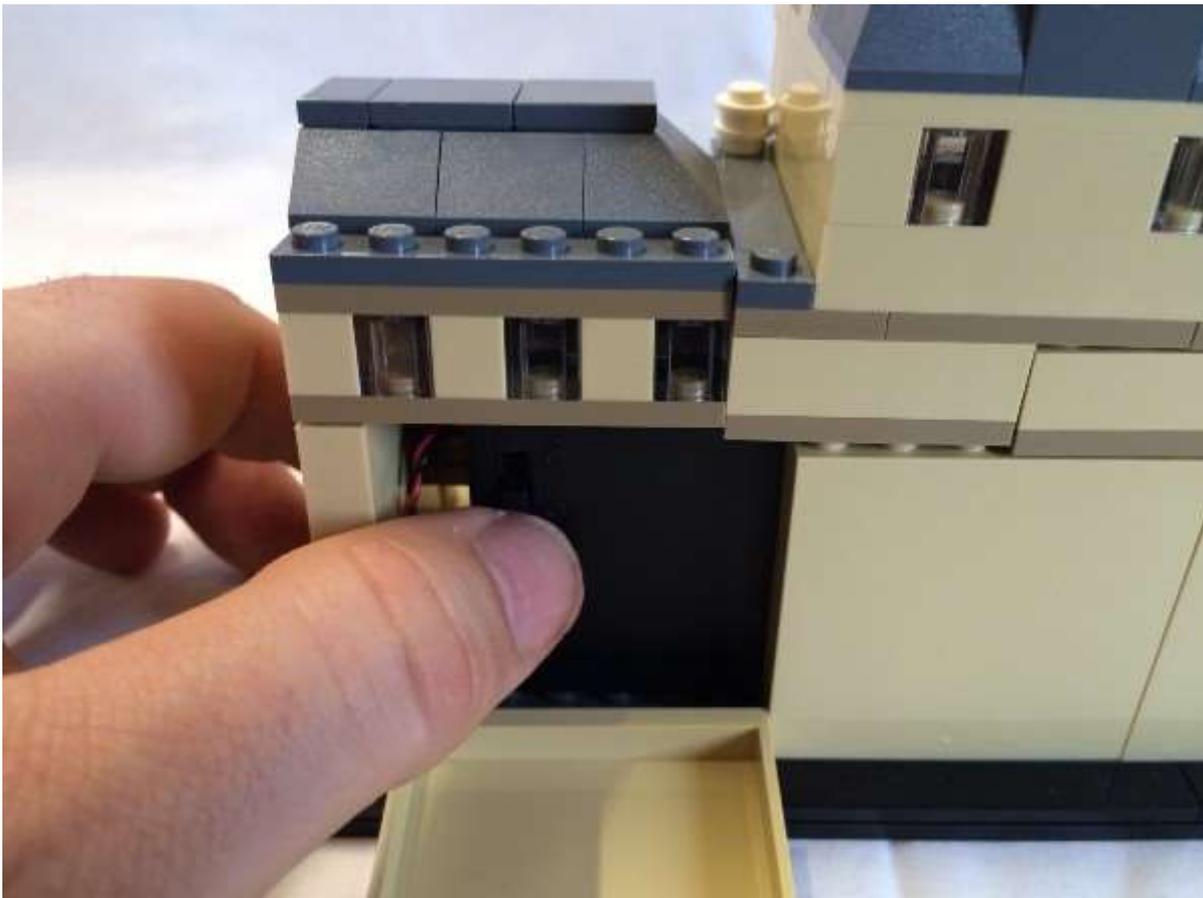
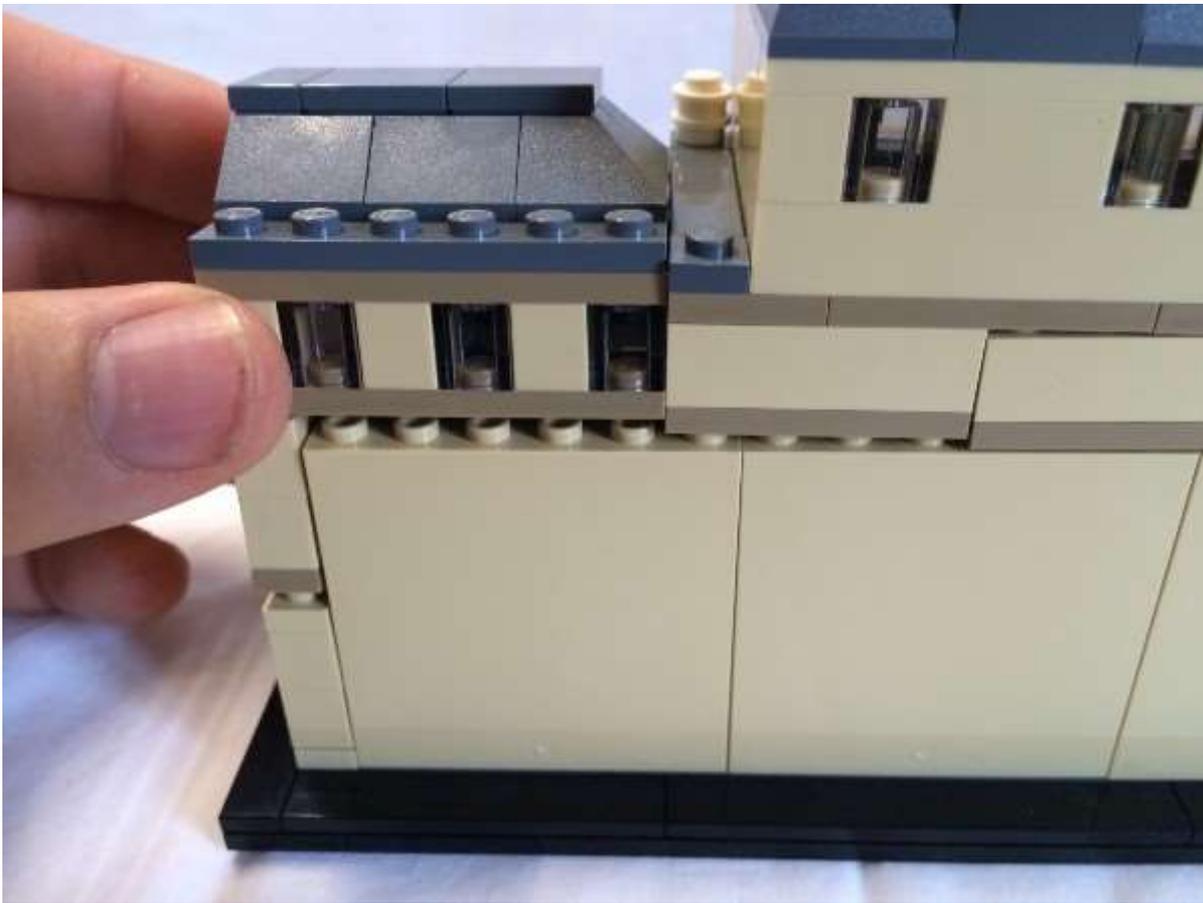


Congratulations—you're finished! Now you can switch it on and enjoy!

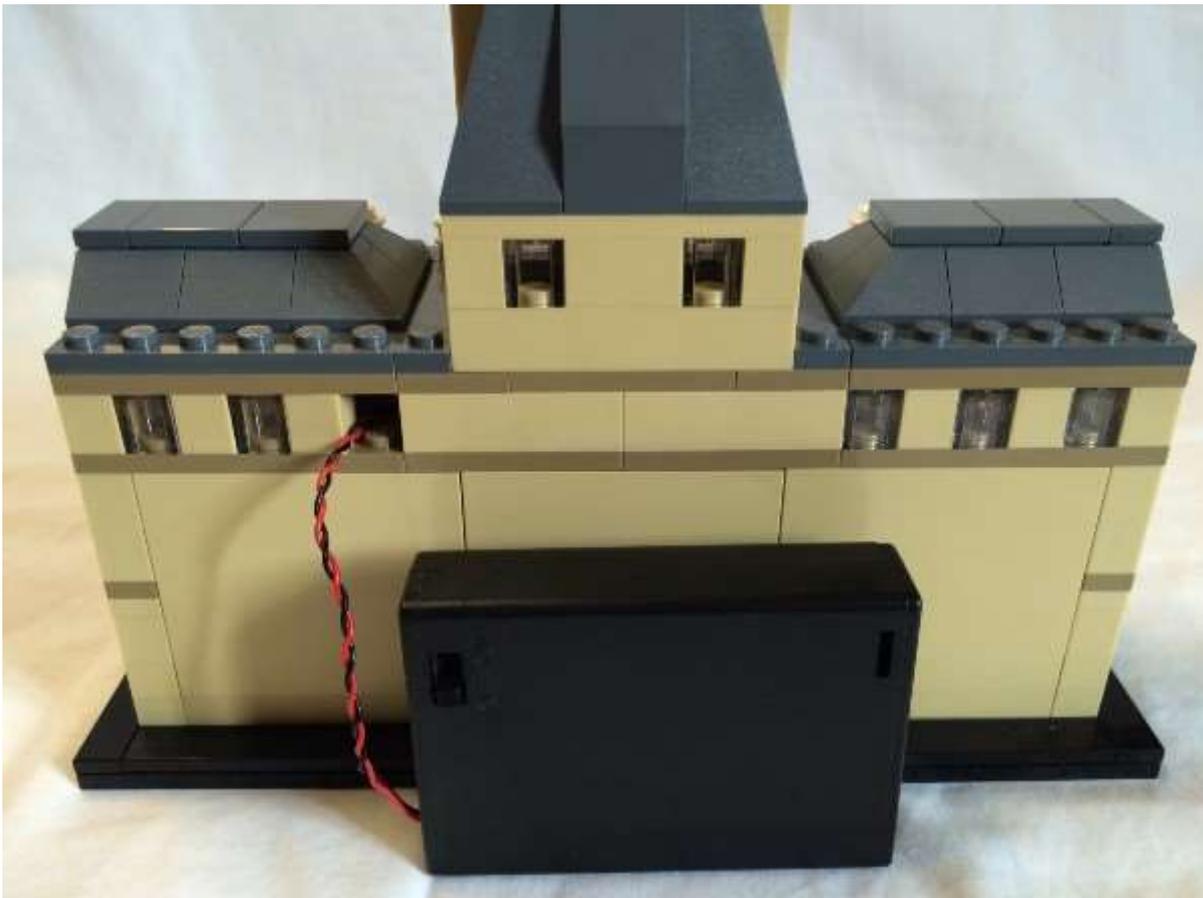
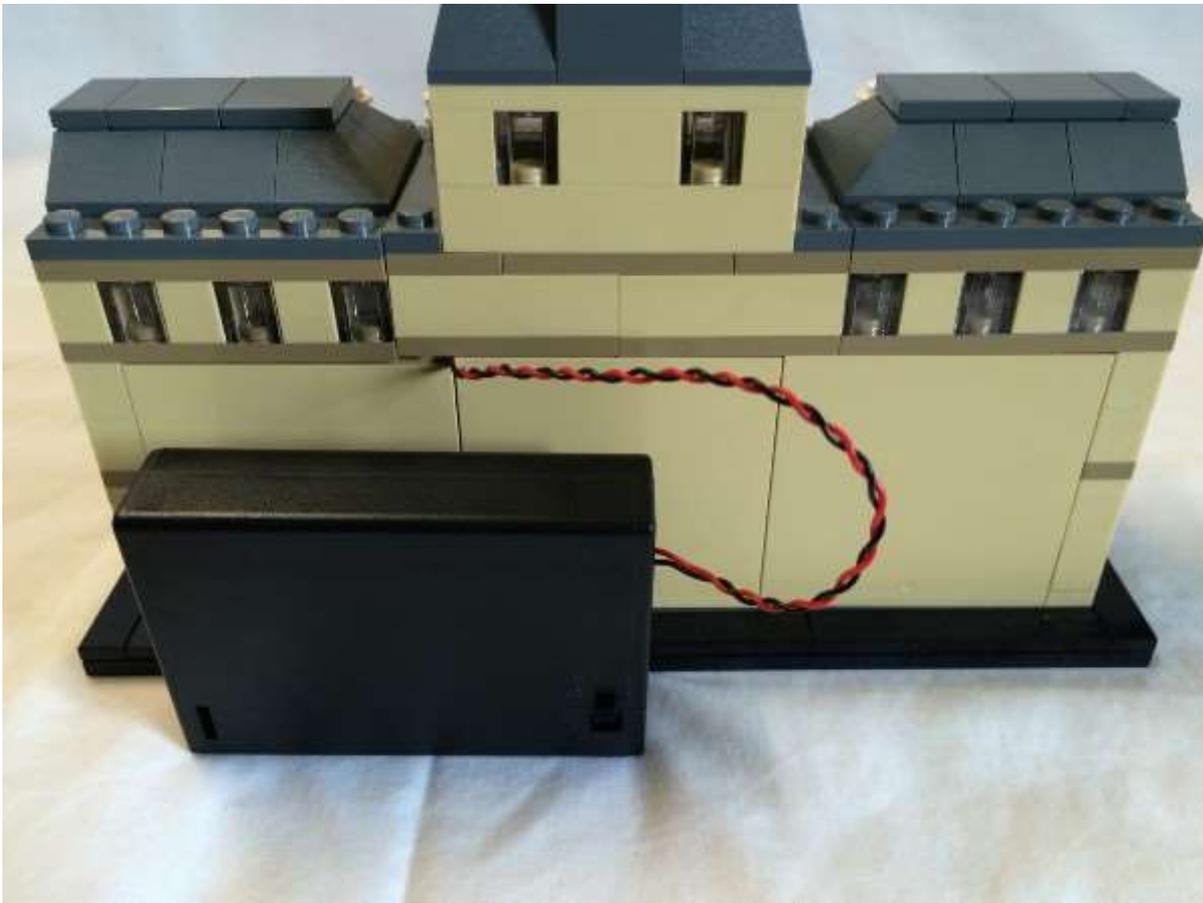


### **NOTES ON BATTERY PACKS:**

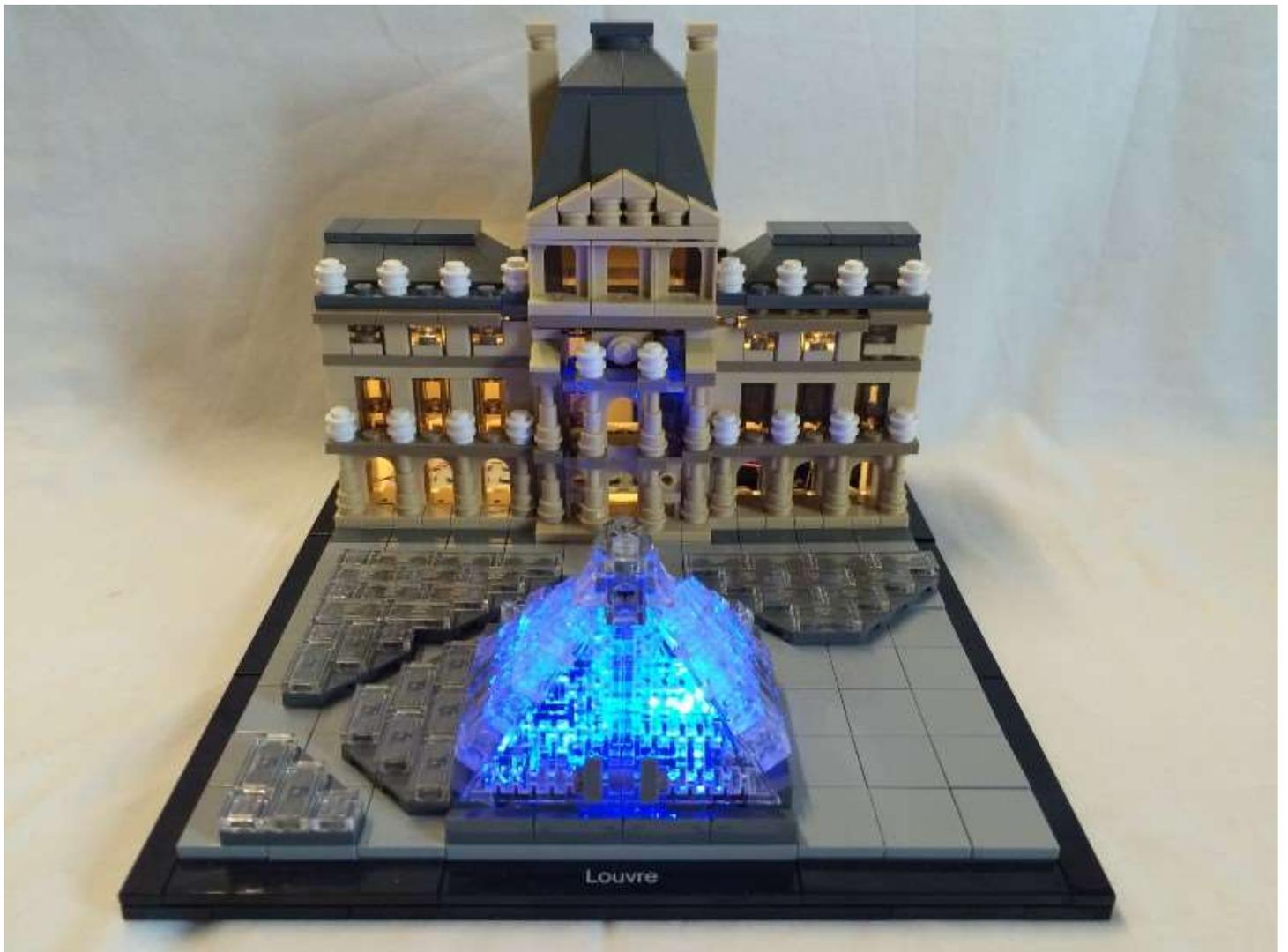
If you choose to conceal the battery pack within the model, you will need to access it by removing the rear left panel to switch it on and off again.



Another option is to leave the battery pack outside of the model. The bricks may not close neatly around battery pack wires depending on their placement. If you don't like how this looks, you may choose to remove a 1 x 1 brick and run the wire through the hole.



If you have the standard battery pack as seen in the photo and choose to conceal it within the model, you may notice that one side of the building appears darker (because of the size of the battery pack).



If you centre the battery pack inside the model, this will reduce the darkening effect greatly.

