

The Secrets of Modular Building

By Pau Padrós

Images by Pau Padrós, Arnim Schulz and LEGO® System A/S

Hello fellow HispaBrick Magazine® readers!

Some of you might have heard of me, but if you haven't you're not to blame! It's probably me who hasn't reached out to you yet. My name is Pau, and I'm one of those who have desperately fallen for LEGO®. Well, unlike many others who have had what's known as a 'dark ages' – the years of having abandoned LEGO® as a hobby – I've never had such thing, so I've never really left it aside at any time in my entire life.

The thing is some of us nerds who play with LEGO® really have an odd addiction to a way of making buildings: the modular system. But what is it? Is it any good? Is it impossible to improve? We'll see.

What is the modular system?

An easy question. The 'modulars' are buildings that have floors you can stack on top of each other. Each floor is called a 'module'. Most LEGO® buildings out there are made using the modular system, including LEGO®'s own models. This system was created by the god of modular buildings, also known as Jamie Berard. Jamie is a model designer, if not the model designer, working in Billund, Denmark. Around 2006-2007, Jamie and his team took seriously the suggestion of many AFOLs to bring big houses back into the LEGO® catalogue. As a result of this input from the community, 10182 Café Corner was born – the first modular building.

The Café Corner set is the model upon which all subsequent modular buildings would be based.

1. First and foremost, the building sits on top of a 32x32 baseplate (though not a requisite) and has 1x2 Technic bricks with pins on two opposite sides (straight line modular) or on two adjacent sides (corner modular). The total width is 32 studs, so the distance between pins is ALWAYS 9 studs, 2-wide pin, 10 studs, 2-wide pin, 9 studs.
2. The modulars have separable floors that stack one atop another. Many other LEGO® sets work this way now because of the added playability and customisation options.
3. All modulars shall have a middle floor that can be repeatedly duplicated to make buildings bigger. This is the main stopper for modulars right now.
4. The distance between building and end of sidewalk may vary. The 'standard', where most of the buildings (official ones and MOCs) have their façades is on the brick before the pin, which leaves a 7-wide gap for the sidewalk.

5. Lastly, a subject of discussion for the last couple years has been the continuously decreasing height of the modular line. All the extra bricks that were once put into making a building taller now go inside the building itself. This makes buildings shorter but much denser. I personally prefer them this way.

LEGO®'s modulars

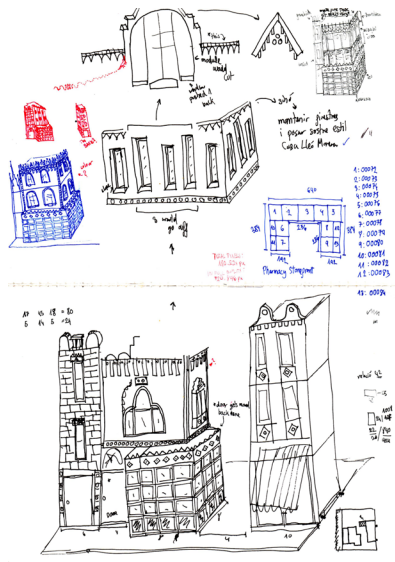
Over the course of 11 years, LEGO® has released a sum of 13 modular buildings (one each year except for 2007, when two buildings were released). I personally like to separate the modulars into two eras: 2007-2013 and 2014-present. First era: 10182 Café Corner (2007), 10190 Market Street (2007), 10185 Green Grocer (2008), 10197 Fire Brigade (2009), 10211 Grand Emporium (2010), 10218 Pet Shop (2011), 10224 Town Hall (2012), 10232 Palace Cinema (2013). Second era: 10243 Parisian Restaurant (2014), 10246 Detective's Office (2015), 10251 Brick Bank (2016), 10255 Assembly Square (2017), 10260 Downtown Diner (2018).

As you may see, most of the buildings have been created by the already mentioned amazing Jamie Berard. His modular standards mentioned above, and also his passion for filling to the absolute maximum an (apparently big but realistically tiny) 32x32 baseplate, have influenced many MOC builders (including me) to try out this style of building. But what are the secrets of an amazing modular? I'll use my own '**Klee Corner**' modular building to exemplify the steps involved in finishing a modular in style.

The Making of a Modular

Note: The modular I'll be building was created using LDD. Don't have any prejudice against any other method – LDD is just my absolute favourite tool to use.

1. THE SPARK: What does this mean? The spark of inspiration. One thing is certain, never open LDD empty-minded. Very much like Photoshop, it's very easy to waste time while using it. The spark might be seeing a building in real life, or a specific detail somewhere else. For instance, for Klee Corner, it was a restaurant known as 'Little Owl Restaurant' located in Manhattan. This restaurant was in the last scene of one of those dumb rom-coms they sometimes put on TV – No Reservations, I think it was called. It was a red, London-phone-box-like wooden first floor. It struck me like lightning. It just looked perfect for turning into a modular building. Later on I would discover the building atop was the one they shot 'Friends' in. Consider that this happened somewhere around last Christmas, so take December 2017/January 2018 as a reference. So, you can imagine me at 2am drawing a sketch for the model in my little notebook bought in the Colosseum.



thing I didn't even touch afterwards. Note that the door you see in front was never actually built there.

What's above it is something entirely different. This is where I was more fearful. My initial idea was to build something along the lines of this beautiful Art-Nouveau building in my own town.



You might look at this and think it looks nothing like the finished model. Well, that's to be expected. The spark is not at all a definitive idea. I wish it were! Like the great Pete Docter once said (director of Monsters Inc., Up and Inside Out): "No idea is born innate. As a kid I used to think the people at Disney just came up with these awesome ideas; The Lion King, The Jungle Book and so on. But the truth is, no idea comes out finished. We work every day in order to cover up all the trash work we've done the previous day – that's how we finish a film". Like Pete said, no idea is innate, but the sketch is VERY important.

If you scroll up, you'll see the sketch on the top page looks very much like the building I've just shown. There lies the issue that troubled me: the roof demanded a module to cut right in the middle of those huge windows (very much like how the Brick Bank's windows are cut by the top module). This is one of the biggest problems with the modular system – it can be somewhat restricting.

2. THE SKETCH: For instance, while drawing the sketch for this modular I was thinking to myself "this doesn't have enough colour". The building on the left was supposed to be a replica of this house in a coastal town near me.

Finally we move on to the last building, on the right. By the looks of the drawing, you can imagine I had a pretty perfect picture of how it would look already in mind. This building though was another one that failed. It looked perfect in concept, but horrible in bricks.



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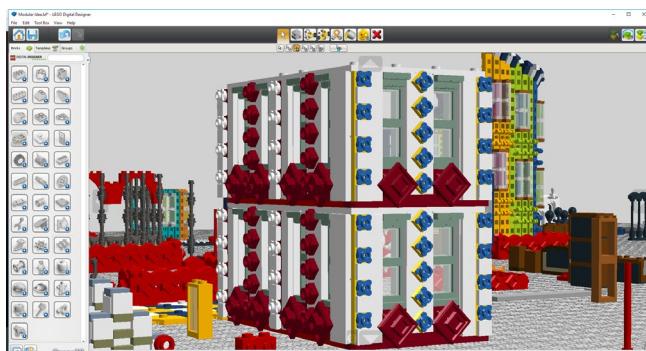
It was a house I'd wanted to make as a modular for a long time, but never really remembered where I'd seen it and I couldn't remember its name. As you can probably see, this is not the house that ended up in the finished modular.



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The middle building's ground floor looks surprisingly like the finished product. That's because it worked the first time in LDD. It was the only – and when I say 'only' I truly mean it – the only

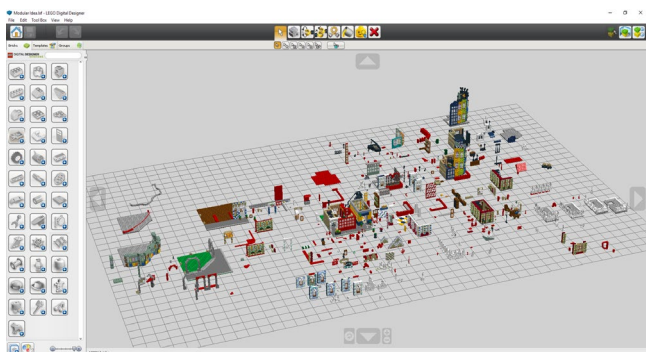
This is what it was originally meant to look like. A gorgeous white, green but also red building. The issue was that LEGO®'s white is very white, and doesn't combine well with other colours. White was too white, but tan was too dark. Anyhow, this was my attempt:



Though LDD has poor lighting on its own, something within me said that wasn't the way to go.

One thing is very important to keep in mind early on in a modular: measurements. These are those little numbers that mark how many studs are to be in a model. In the final pictures you might even be able to count how those numbers remain unchanged to the end modular. Just a tip: avoid uneven numbers if you can. (Easy for me to say, as the phone box section is 11 studs wide! But that was an exception to the norm.)

3. TRIAL AND ERROR: Yes, practically nothing from the sketch made it to the final modular, so this is where all the crappy stuff gets turned into awesomeness. As this model is basically split into three sections, I'm going to talk about all the different concepts that went into each of the buildings. Hold tight, as it's gonna be a rough ride (the full LDD file includes about 12,500 pieces used in initial sketches and unfinished ideas).



All three buildings have interesting stories behind them, so we'll go from the smallest to the biggest (though all three are pretty slim).

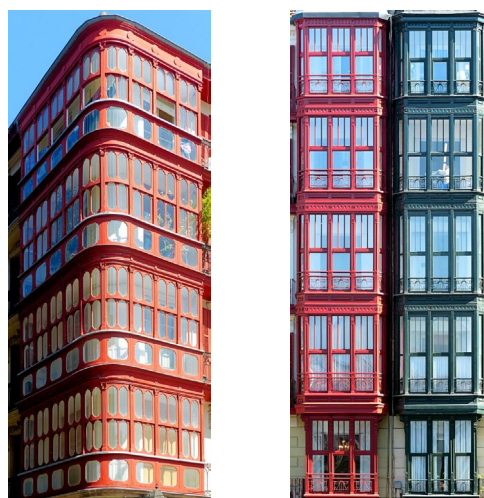
The Dark Blue Building (6-wide, on the left)

As I've already hinted, this building went through many changes to the point that its final version is nothing like what was first envisioned. Further above, Image 4 shows what this slice of the modular was supposed to look like. But it doesn't look like that, doesn't it? For a very good reason: it didn't work. As much as you may desire something, if it doesn't work, let it go. Try doing it differently – here is an LDD screenshot of all the different scrapped façades I tried for this building:



These are all iterations of the same bluish tile façade idea – each more horrifying than the previous, as you may have seen. As hard as I tried, the concept failed, whether using prints or hourglasses in blue. Something else had to go in its place.

Then I thought of Bilbao. That town in the Basque Country, bordering the Pyrenees. Its old town centre has bold brightly-coloured metal structures poking out of older buildings. It was perfect. Skinny, somewhat imposing and modern, but also something I could work out in LEGO®.



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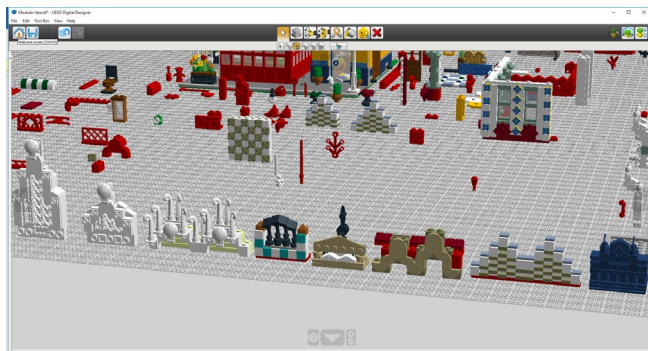


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These three images showcase perfectly the modernised world within the traditional nature of a place that so much stoked me. The last image especially was one that just looked right for slotting into the model. Indeed, aside from the colour, I also put its small window-bigger window-smaller window layout into my modular.

Those grill pieces are there to cover up the gap that modular buildings tend to have where the floor splits up. It is indeed something quintessentially simple, but which had simply not come to mind before seeing the newest 'Downtown Diner' modular – LEGO®'s latest.

So now I knew what the tiny 6-wide gap would be filled by, but I didn't know what would cap it off. I absolutely love building rooflines. They could even be my favourite part of building a model! That's why I have the tendency to build roofs which end up not fitting anywhere. So I built some roofs meant for previous iterations that were scrapped (or put off for some future use, you never know!)



It's funny how things work out, as I was convinced the third concept from the left (the bright green one with the shell) would be the chosen one for a really long time, but for the final blue building I made one and was more than satisfied with it.

The Greenish/Yellowish/Reddish Building (10-wide, on the right)

This building suffered much less of variation than the previous one. If you take a look at the sketch and compare it to the final model, the window layout remains exactly the same. That's because this model was always supposed to be a version 2.0 of the blue building from LEGO®'s Detective's Office (2015).



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I've always loved the elegance of that building, and I would even consider it to be among the best things LEGO® has ever made. Therefore, I wanted to add as a little extra spice, the basil that tops the perfect Ratatouille (yes, I'm listening to Ratatouille's soundtrack while writing this!). Obviously, the concept I tried (Image 7) failed completely at achieving this, so back to the drawing board it was.

It is often by luck that I come across architectural details I love (Bilbao's windows, for instance), but not for this one. For this odd building, I obliged myself to visit an outdoors shopping centre – one of those that has themed buildings and all – and to closely inspect the buildings. Surprisingly, my observing eye found something worth trying.



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This isn't a great picture of it, but the springy façade was something that caught my eye. Mostly because I couldn't think of a way to build the flowers into the tiles. Then back home I just sat on my computer, built, built and built. I realised the only way to make it possible would be to invert the plates holding the petals, and by the following morning it was finished.



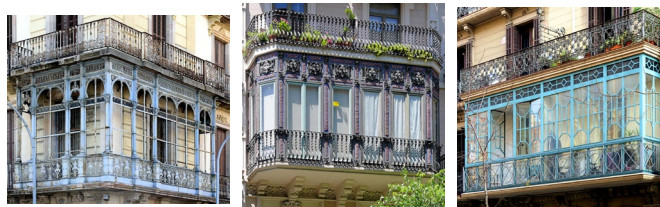
I must admit I liked the idea so much that I just couldn't help wanting that building to be the main thing one would see (though that would eventually be the central curved building).

Who is there? Is it crazy me once again? Let him in! My subconscious must've been thinking something like that when I thought I would make the ground level a pharmacy. But not just any pharmacy. One that would require huge prints to achieve: one of those Art Nouveau tile-covered pharmacies that remain in some places.



I'm horrible at keeping true to what I draw, so the roof unsurprisingly follows that pattern. Does what I drew match

up with the reality? Not at all. Were there other designs in the way? Of course! It must be said that I absolutely love how this roof turned out, and it might even be my favourite of all those I've built through the years. There was in fact another roof, one which I absolutely loved, that was to be placed right where the current one is. That other roof is a design I also adore, but I kept it out of this modular build as it overshadowed the curved building too much.



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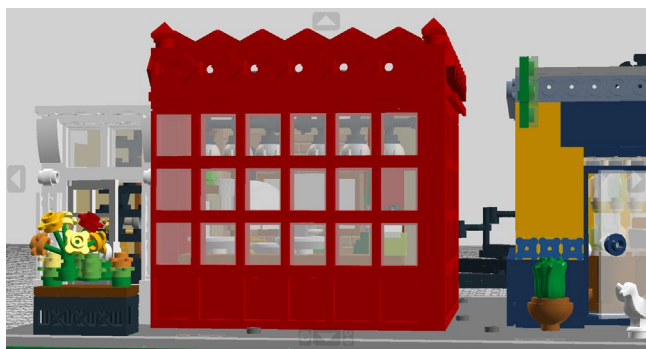
So off I went, finally inspired, hoping something would come up. It wasn't long before I realised it wouldn't work. At least not exactly here (it might be a concept I will try again sometime in the future). This is the little I built:



The final one on the right, and the preliminary one on the left.

The Curved Building (centre)

Once again the final model looks almost nothing like the sketch. As mentioned before, it was just a rough guide but totally worthwhile. First off, I'll start with the 'almost' which is obviously the ground floor. This is mostly for two reasons. Firstly, it was what first inspired me to actually start this new modular, and secondly, because it looked fine when built with real bricks.



There are subtle differences between the sketch and the model, most notably the width of the windowed section, which I expanded from 8-wide to 13-wide – an odd number that I used as it didn't cast any influence on the upper floor.

The two upper floors of this building are a totally different story. The sketch shows an awkward building (shown in IMAGE 5). As I mentioned before, this building was meant to be mostly white, but due to the combination of buildings I never even tried building it in LDD at all. So, out of the three buildings I had no lifeline to hold onto. Nothing to crawl to if all the ideas failed.

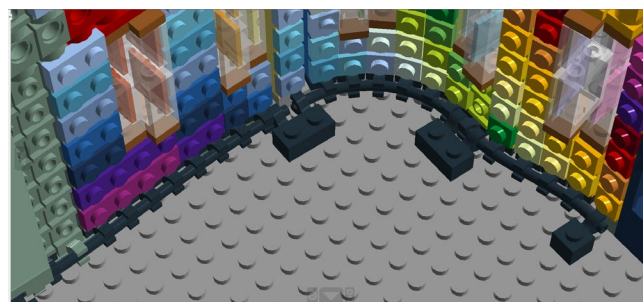
Maybe this is why it is undoubtedly the most daring of the three. I remember last January talking to my cousins about this building and showing them the progress made (with the first floor completed). Their father suggested building some sort of metal-enclosed box building. That was it, I thought. Something along the lines of these:



So I was out of ideas once again. But then I found out about a remarkable architect I didn't yet know of. LEGO® makes older architectures (stone-based buildings) hard to build. I'm a big fan of Catalan Art-Nouveau, including the world-famous Gaudí, but Art-Nouveau often uses tannish colours, therefore discovering Friedensreich Hundertwasser – akin, but a more modern version of the first – was a breakthrough of its own. Hundertwasser makes use of bold colours and materials, as if the building were an easel. Though some of his designs I find unappealing, I wouldn't have been able to even envision this building without his craziness.

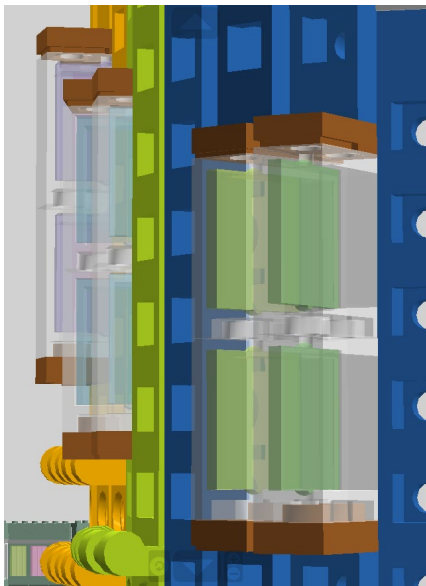


I perfectly remember building the flex tube structure in barely twenty minutes right before rushing to lunch. It's funny how the most unexpected things can turn a model bound in doubts into a model with a clear end in sight.



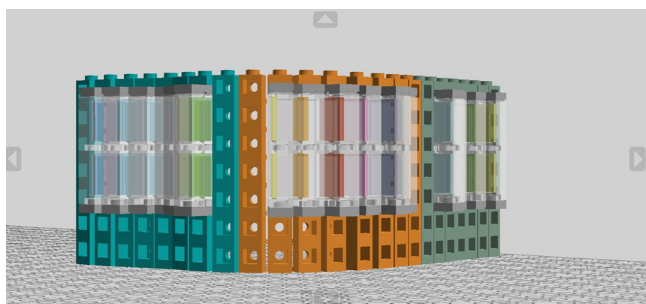
As you can see, it's basically flex tubes with clips attached all around them. The window concept came rather early, mostly due to the curved nature of the façade. A curved façade can't have anything poking inside, as that would inevitably cause collisions.

LEGO® windows, though, are often inset half or a full stud from the façade (or even a quarter of a stud in Downtown Diner!). This presented a potential issue, as the windows looked boring next to such a striking façade – an issue I easily solved by placing transparent window frames sideways, protruding outwards.



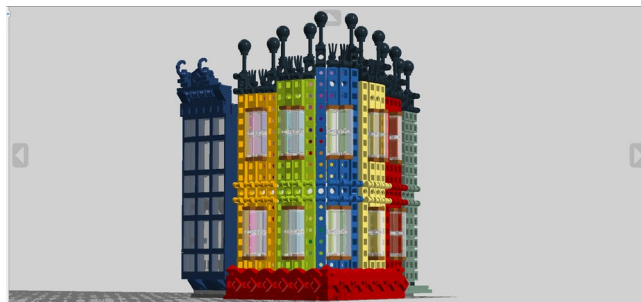
Windows protruding

The colourful façade did not come together in one go. There were three major iterations of its design, with all three following unchanged shaping of the flex tubes. The first one was never finished, and had bigger windows that would not align when put together.



The second iteration resembled the final design to a large extent. In this second design, I'd already settled with narrower windows and narrower vertically continuous strips of colour. The difference lies in the placing of the windows (here totally straight from one another, both vertically and horizontally), and the shaping of the roof. Note the already finished blue building at this stage. Here it looks a little too tiny next to an ever-growing (though unperfected) monster.

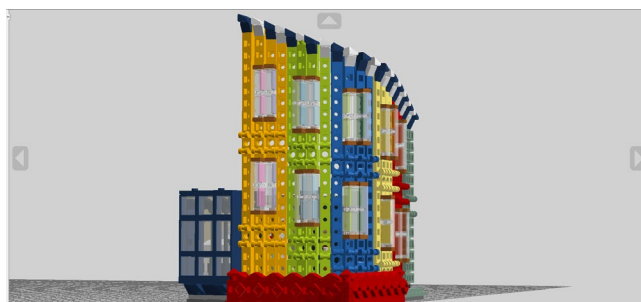
Only the most careful of observers will have noticed that the blue building's roof is slightly different – specifically, the pieces between the windows and the cheese slopes and oil lamps.



The final and third design derives from the second one. This is maybe the clearest example of perfecting a section until it ticks all the boxes. To fix the issue of the main focal point (the highest point) being partially hidden behind the greenish, yellowish building, I built the focal point right by the blue building, forming an ascending staircase-like structure.

Once I had the exact shape I desired, the windows looked out of place all flat, so I changed them to follow the shape of the roofline, ascending along with the roof, always at the same distance.

The last issue to solve was the roofline design. The one shown in the second design is directly inspired by Hundertwasser's 'Grüne Zitadelle', or Green Citadel, shown in Image 25. But this looked hollow of any cohesive rule, so I simplified it (sometimes a worthwhile trade) to a fairly simple 1x2 cheese slope design, to achieve the illusion of the whole rooftop being a slide.



Note the blue building already cut into modules here. The shrinking of the building also resulted in the blue building looking correctly in scale as a result.

Is Klee Corner technically a modular?

At the beginning of the article, before rambling on about my miserable attempts at making something decent, I mentioned what makes a real modular. A modular building is one which has detachable floors that can be repeatedly stacked one atop another. Klee Corner then is 70% modular. The blue building and the yellow/green one are 100% modular – if LEGO® were to make this a set, one could buy two copies and make them taller and taller. The central colourful and curvy building isn't modular. It's basically piles of Erling (headlight) bricks on clips attached to flex tubes, so it can't be separated. The modules of the top floors have floors that adapt to the curved façade, but are not cut outside it, as all modularity do. A curved façade done this way is the only solution that I thought possible. If any readers can think of a better way to make a building with a such a tightly curved façade (it turns about 100-degrees in a 4x4 brick space!) then I will be happy to hear of it!

Modulars are an extremely versatile concept that has morphed into hundreds of forms over the years. Since I began making these kinds of buildings back in February 2016 with Magic Shop, my first model, it's crazy to see how much more capable I am of turning crazy ideas into somewhat feasible models.

If you've read through and not just looked at the pictures, you may have noticed it's the challenge that keeps me interested. A safe model is of no interest – not to me or to anyone else. Why make anything at all, if it's not something the world has never seen? I'd never seen a curved modular done in this way. But did that stop me from making one? No! Even better if nobody has made one, as then it'll be something even more surprising when revealed!

Do I know what I'll build next? No idea. Maybe I won't build anything at all for a while (though this is unlikely). I can assure you that anything I build won't be something easy to wrap my

head around. LEGO® is like a math problem, only more fun. It helps improve mental capabilities – that I'm entirely certain of. So, if you're making a model (modular or not), don't go the easy way. Look into the intricacies. It's entirely your project. From a plate hidden under a pillar to the cherry topper. Make the model as good as you possibly can. You've seen it for yourselves! Four months of work and over 12,000 bricks in LDD, I bet it isn't all in vain. Think outside the box, and look at the world. It is beautiful, and there's surely something out there waiting to be discovered, waiting to be built. So, what are you waiting for? Go for it!

You can see more of my work in my Flickr photo stream:

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