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ENGLISH EDITION



HISPA BRICK MAGAZINE®



HispaBrick Magazine® Event 2017

Ya disponemos de las fechas definitivas para el encuentro de aficionados a las construcciones de LEGO®, que organiza HispaBrick Magazine® en el Museu Nacional de la Ciència i de la Tècnica de Catalunya (mNACTEC). Serán los días **8 y 9 de diciembre de 2017**.

We are pleased to announce that the meeting of fans of LEGO constructions organized by HispaBrick Magazine at the Museu Nacional de la Ciència i de la Tècnica de Catalunya (mNACTEC) will take place on **8-9th December 2017**.

Veseli nas objaviti kako će se sastanak obožavatelja LEGO modela, u organizaciji HispaBrick Magazinea, održati u Museu Nacional de la Ciència i de la Tècnica de Catalunya (mNACTEC) u Španjolskoj, **od 8. do 9. prosinca 2017.** godine.

Redactores / Editor board / Uredništvo

Lluís Gibert (Iluisgib)
Jetro de Château (Jetro)
Antonio Bellón (Legotron)
José M. Ruiz (Satanspoet)

Equipo HispaBrick Magazine® / HispaBrick Magazine Team / Tim HispaBrick Magazinea

Adrian Barbour (BrickMonkey)
Jesus Delgado (Arqu medes)

En este número colaboran / Authors of this issue / Autori ovog broja

AC Pin
Adrian Barbour
Alberto Moreno
Boris van Rillaer
Boston Abrams
Brent Hutcheson
Dirk Denoyelle
Eduard Petrač
Francesco Marino
Iva Pavlić
János Römer
Jasna Bronić Miklin
Jesús Delgado (Arqu medes)
Kristijan Vuletin
Marin Stipković
Oton Ribić
Richard Jones
Robenanne
Seshan Brothers
Sven Franić

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LEGO® System A/S
Jan Beyer
Kim E. Thomsen

Puedes contactarnos / You can contact us at / Možete nas kontaktirati ovdje
info@hispabrickmagazine.com

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Portada por / Cover by / Naslovnicu izradio

Antonio Bellón

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Editorial

By Jetro de Château



It always feels like a great achievement when we launch a new issue of HispaBrick Magazine, but I feel especially proud of this one for several reasons. I don't want to put them in any specific order, and while going over them I realised they are all related to the wonderful atmosphere you can find among AFOLs worldwide.

I was privileged to be at the LEGO® Fan Media Days in late May and early June. It was my first trip to Billund – which already made it special – and it turned out to be everything I had hoped for, and then some. Of course I came back with a ton of material from interviews, some of which you can find in this issue. I also came back with ideas for many other articles. Some of those have materialised in this issue in different formats. A good example is the article by Stuck in Plastic, who were also represented at the Fan Media Days – an excellent opportunity for networking.

Collaborations in all formats are essential to the way HispaBrick Magazine operates. Sometimes people ask us if they can write an article for us, sometimes we ask people if they would like to write about a specific subject, and sometimes that collaboration goes beyond a single article in a specific issue. An example of that can be found in two new 'corners' that appear in this issue. Both EuroBricks and Kockice reached out to us with a proposal to find synergies and we are happy to see those ideas materialise in this issue.

In the case of Kockice this collaboration goes even further: they have organised a team that has worked closely together with the HispaBrick Magazine staff to create a Croatian language version of this issue of the magazine. We look forward to continuing that collaboration over time.

Of course writing articles is not the only way people collaborate with HispaBrick Magazine. The help we get in translations, proofreading and the pictures we are given permission to use are other important ways that underline the general spirit of collaboration that makes this magazine possible.

Making all of this happen has taken a lot of time and coordination and seeing it all come together makes me feel proud of everyone who has collaborated in one way or another.

We have done it again!

Jetro de Château
On behalf of HispaBrick Magazine® Team
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Interview: Robenanne - The Old Fishing Store

By HispaBrick Magazine®

Images by Robenanne and LEGO® System A/S



HispaBrick Magazine®: First of all, tell us a little bit about yourself.

Robenanne: My name is Robert (aka Robenanne). I am 51 years young and live in the city of Almere in the Netherlands. I work as an architectural draftsman. My hobbies are fishing, photography, and designing with LEGO®.

HBM: When did you start playing with LEGO®?

R: I have been building and playing with LEGO® for many years. When I was young I loved to play with LEGO® bricks, and I remember that my first set was the 336 Firetruck [1] (pcs: 77 1968-1970). After having my two sons my interest rekindled and we enjoyed playing together with LEGO®.

HBM: What is/are your favourite theme(s)?

R: I don't have a specific theme. I like, for example, the big sets such as the Sopwith Camel, Red Baron, VW camper, Mini Cooper, Emerald Night train and the Star Wars Millennium Falcons. Also, I collect the Star Wars microfighters and the Batman minifigures. My favorite LEGO® Ideas sets are the Caterham Seven 620R and Wall•E.

HBM: What inspired you to create the Old Fishing Store?

R: I got my inspiration from the HO train model houses, the LEGO® Christmas houses and sea villages. My interest in fishing and my job as an architectural draftsman also provided a lot of inspiration and an eye for detail to create this kind of fishing village theme building project.

HBM: What made you decide to put your project on LEGO® Ideas?

R: After designing some small projects, I submitted them to Digital Designer Gallery [2] because I was not sure about my models. So after some great comments and some different LEGO® MOC sites, I decided to submit some of my projects. I have known about the LEGO® Ideas site for a while and submitted two designs in 2014: the Old Fishing Store and the Boat Repair Shop. But they were both declined, because the images I had made looked like box art. After about a year, around Christmas time, I decided to submit the Old Fishing Store again.



Boat Repair Shop

HBM: Do you have any other projects on LEGO® Ideas? How are they doing?

R: When the Old Fishing Store was submitted and gained a lot of interest from the LEGO® Ideas members, I guess my confidence grew. So I submitted the Boat Repair Shop which also got a lot of support from the LEGO® Ideas members and fans. I got a lot of questions about building projects, whether this would be a complete village, and comments saying it would be a great new LEGO® theme and so on.



Sea Front Village

I have 12 buildings that make up the Sea Front Village and I have submitted five projects. At the moment I am also working on a new theme, let's call it Caribbean projects. The first one is the Creole Inn, which can be seen on my own website: www.ramt-brick-design.com

HBM: The images of your projects look very real. How did you get this excellent quality?

R: I tried different kinds of LEGO® designing software. After designing my first project, the Ice House factory, the software that I used gave a poor quality screenshot, so I had to look for an alternative rendering program. It was a challenge to find the right program that could read and import my files.

The rendering software that I use (LDD Converter and POV-Ray) give me a lot of control over the lighting and color channels, which gives it an excellent realistic quality.



Robenanne with the digital model of the Old Fishing Store

HBM: What impact do you think having high quality digital images has on a project? Do you think physical images have a (dis) advantage?

R: There is a difference between digitally and physically designing projects. If you create big projects, you need a lot of bricks and in the right color. This could be very costly. But there's fun in building your creations physically. Some designers have an area with special lighting or a mini photo studio for taking their model pictures. After taking a lot of digital pictures, you can edit if needed and pick the best ones to submit.

With digital designing you have all the blocks and colors you want to use. But to get the right images you need the right software. It is important that your digital camera is set to the right view for your model. The lighting is also important; there are a lot of settings depending on which software you are using. But this can be a very time consuming venture. So in my opinion there are advantages to both methods. It depends on which quality you are happy with.

HBM: Can you tell us a little about the design process of your projects? (Do you make a physical model before you build digitally? Do you check the digital model against some kind of physical construction...?)

R: I usually start by gathering information about the design that I want to build. This can be very helpful for details and gives you some information about the history of the building. Or you can design something fictional and then look at architectural building sites or whatever else is your source for inspiration. There are other ways to gather information, such as libraries, different internet sites, or even pictures you have taken on vacation.

Start by studying the information before making the sketches on LEGO® graph paper. Try to make many sketches from different angles. If you are pleased with the results you can then add details. I like to place them on different elevations. My first drawing sketches are done without any scale.

After completing my sketches, I will draw the floor plans and elevations to scale with help from a LEGO® scale converter on A4 or larger size paper. When the drawings are complete, I like to determine what color scheme to use on the model after choosing the best general color.

Once the drawings are complete we are going digital. I like to work with LDD (LEGO® Digital Designer). It's a very straight-up software package that is very easy to master: click and play. So after I transfer my sketches to LDD, I can start tweaking or adding and change color scheme. After the model is done, I start placing the details like animals, mini figures, barrels, bushes, scrubs, tools, etc.

HBM: What does it take to create and push a successful project on LEGO® Ideas?

R: I think imagination and creativity will help to create a project. It's hard to find something new and innovative. But if you make a creation that you have a good feeling about, you should submit it to LEGO® Ideas. Then start promoting your project on different LEGO® MOC sites. The whole process is part of the fun, whether your project makes it or not.

HBM: The Old Fishing Store has been approved and the Boat Repair Shop is being reviewed. What has the experience been like for you so far?

R: The Old Fishing Store gained a lot of attention and supporters at a fast pace. This was an experience on its own. I was very pleased with the comments I got and I tried to answer each and every one. After it got approved, another experience started with LEGO® Ideas Billund and their team. And before I knew it the Boat Repair Shop also made 10k supporters. People asked how it felt when I saw it had made the 10k, but I don't know as it happened overnight. But as you can imagine I was very pleased. So far it's been an enjoyable experience.

HBM: Do you think the Boat Repair Shop has less chance of becoming an official LEGO® Ideas set because The Old Fishing Store has been approved?

R: That is a hard question. I guess so, but I can't complain as I have a set that is being developed by LEGO®. But I won't mind if the Boat Repair Shop joins the first model that I submitted.

HBM: It is unlikely that all of your projects will end up becoming LEGO® Ideas sets. Do you plan on releasing (selling) building instructions for the projects that gather a lot of support but don't become official LEGO® sets?

R: I don't think all my submitted LEGO® Ideas sets will become official LEGO® sets, but I don't mind. After you submit a model, there are some rules that you have to follow. So with that in mind, I can't release any building instructions as yet. But I am looking forward to finding the right building instruction creator to release some of my other Sea Village projects.

HBM: Do you have any physical MOCs? Do you display them at any events?

R: I have made parts of all of my creations to try out the construction and stability. The Old Fishing Store was very close to being finished, but then an accident happened (my cat ran over it). Shortly after, I started collecting parts all over the world to get the Boat Repair Shop physically built. I don't go to events, so it's standing proudly in my LEGO® room.

[1] <http://brickset.com/sets/336-1/Fire-Engine>

[2] <http://ldd.us.LEGO.com/en-us/gallery>

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Old Fishing Store digital image

Interview: LCP - Dirk Denoyelle

By HispaBrick Magazine®

Images by Dirk Denoyelle



Dirk Denoyelle at the Hilton Paris Opera Exhibition

HispaBrick Magazine: Name, age, position?

Dirk Denoyelle, born Roeselare (Flanders, Belgium) 2/10/2964 (so 52 when I write this), LEGO® Certified Professional (LCP), Comedian, CEO and Polyglot (haha), Education: Master in Electronics Engineering Science

HBM: Did you play with LEGO® when you were a kid?



Young Dirk playing with LEGO® set

DD: I did. I received my first box from my grandfather when I was about seven. We were spending holidays at the seaside, and weather was, typically for Belgium, not very good. I still have the model house; it's on a glass shelf in my home office. The trees are broken and the cardboard box and instruction booklet are gone, but I think I could even today still build it without the instructions. I must have built it a hundred times when I was a kid.

HBM: When did you discover that LEGO® could be something else than a toy?

DD: That was many, many years later. My dark ages started when I went to university and ended when my daughter got her first LEGO® set at the age of seven. I went to fetch the bricks from my parents' house, I nicely separated what was mine from what belonged to my brother, looked for special offers in toy shops and started playing again. After about a year or so, I wanted a bigger challenge than building cities. So I built our family portrait : my first mosaic, no software involved (we are talking about the nineties here), and it's still above our fireplace. The whites have faded here and there, the kids have grown up, but we all still love it.



Dirk's first mosaic



Willem Vermandere's sculpture

HBM: When did you build your first sculpture?

DD: That was the head of Willem Vermandere, a locally famous Flemish singer-songwriter and sculptor. I had been doing parodies on him in my comedy shows for some years, and I wanted to do something special with the guy. So I thought, why not make his portrait in 3D with LEGO® bricks? Why not make a sketch, in which he unveils a statue created with a new, revolutionary technique, in an ever-lasting material... LEGO® bricks! There was one problem: I wanted him to be built in light grey, so he would look like a rock, as the real Willem Vermandere is rock solid. But I hardly had enough light grey to make a little mountain for my train to drive through. So I contacted LEGO®, and back then (the nineties, remember), the LEGO® company rules were totally different. They said "we receive hundreds of requests like this a year, and we usually grant one ... we'll do yours". The fact that I was a quite famous artist already possibly helped my case. A few months later I got a K8 box [1] full of grey bricks. And again half a year later, the audience applauded massively for the LEGO® head. It would be the first of very many...

HBM: How did it turn into your business?

DD: I have always turned my hobbies into my profession. I wanted to be on stage, so I became a professional comedian. I like to learn languages, so I forced myself into performing not only in Dutch, but also in English, French, German... even Danish and Spanish. And I liked doing things with LEGO® bricks. After seeing the success of my heads, I figured "there is a business here".

HBM: How did you learn about LCP?

DD: That was quite the story. As the first LEGO® head was a big success, I developed a very good relationship with the LEGO® Benelux office. They were the ones who suggested the program to me, but at the time they did not really know where I should apply. Already back then the LEGO® Company was a big house with many doors. It was only a year later when I was invited to do a comedy gig for LEGOWORLD in Zwolle (NL) that I bumped into the ever-charming Jan Beyer, who pointed me in the right direction.

HBM: When did you start as LCP?

DD: That must have been early 2008. Via Jan Beyer I had made my application, explaining what I wanted to do (basically art and portraits with LEGO® bricks), and to my surprise I was accepted more or less right away. I had no idea my exhibit of 3D heads with LEGO® bricks was already so famous that LEGO® Headquarters knew about them. You have to remember: this was in ancient times when social media barely existed.

HBM: Which benefits do you have being an LCP?

DD: First of all, I am an artist, so being an LCP feels like an honor. Although it is not really a 'title', it sometimes feels like one, and I am grateful for that. It makes one feel special, and who doesn't like that? But on a more practical level, it also helps in a commercial way: I work a lot for companies, and in that world being 'certified' is clearly an advantage. Apart from that, LCPs have direct access to bricks at competitive prices. The latter, come to think of it, is quite bizarre in my case. In my early days, before I was an LCP, LEGO® Benelux used to sponsor my bricks for me. Today I pay for them. But then again, those were completely different times with completely different rules :-)

HBM: Could you explain to us the design process of one bust?

DD: It is very, very basic work, actually. Pretty much like what a sculptor does when they would make a bust out of clay. I collect pictures and I do some thinking. What scale, what colors, what style... And then it's just like building anything else: you start at the bottom, and move on to the top. No 3D-scans, no smart software, just a guy with a few pictures and a pile of LEGO® bricks. Sometimes I get it right the first time, sometimes I have to start over again. Usually I only know that the result will be OK, when I reach the eyebrows.



Kings of the Netherlands

When I was building Queen Maxima from the Netherlands, it was the eyelashes that made the difference. I thought George Clooney was going to be really difficult, as he has a very smooth face, but for some reason building him was also very... smooth :-)



George Clooney's head

HBM: How many copies of each bust do you produce?

DD: If the bust is a commission, I usually build only one. Sometimes two: one prototype that is unglued, and then a co-workers builds a glued copy that we send to the client. That is in case the bust needs to be transported a lot, or will be shipped by plane. The heads that I make for our touring art exhibit are made in a few copies more. First the unglued prototype, then a few glued copies for the several places we want to put them on show. At this moment my friends from E-Motion in Slovakia run a tour in shopping malls all over Central Europe, and quite a few of my heads are part of that tour. Our own art exhibit is due to take off soon as well. A big part of that is about heads and faces. Apart from the busts, there is the giant Rubens painting parody, in which I replaced the original heads with heads of people like Einstein, Ghandi, Martin Luther King and other wise people. Most of the art we make for the touring exhibit is also made in a few copies.



Rubens's painting

HBM: Do you keep copies of your work?

DD: Yes, usually the unglued prototypes stay in our workshop.

HBM: Besides busts, you have also produced other models like the Hilton Hotel in Paris. How do these collaborations work?

DD: The Hilton project – summer of 2015 – was an amazing experience for us. We had our art exhibit in the hotel all summer, we built a large scale model of the hotel, we did some team building workshops there for companies, we built a small scale model of the hotel concierge and we built an exclusive set, a miniscale impression of the hotel. For some reason that set was a huge success. I think the sparkling personality of Sofia Vandaele, the hotel manager, had a lot to do with that. And of course the real Hilton Paris Opera is a great building.

HBM: How many copies are you allowed to make?

DD: We can make as many sculptures or built models as we want to. But as soon as they are construction sets, the limit is set to a few hundred. Actually, there are quite a few restrictions to making custom sets. They have to be linked to a specific event, they should respect the LEGO® values, etc... So we could not make military or tobacco sets, for instance. But I would not want to make those anyway :-)

HBM: How are instructions generated?

DD: There are different approaches, but usually I – or one of my co-workers – first makes a prototype with actual LEGO® bricks. Over the years we've managed to have quite a 'bricklary' – a library of bricks – in stock. Then we send pictures to someone who reproduces our prototype in a computer version. In most cases we work with Jaco van der Molen in Holland, an awesome guy, actually. He then generates the instructions. Finally we have one of our own graphics specialists to create the exact look and feel we want for the particular project.



Hilton Paris Opera model

HBM: You are also a presenter in events and shows. Is there any link with LEGO®?

DD: There is more and more. My comedy shows are usually for companies and conferences. When they heard I also “did stuff with LEGO®”, I was asked to host team building workshops with LEGO® bricks. So I developed a few concepts and ran some of these exercises – quite successfully actually; so I decided to get a deeper background in the field, and became a LEGO® Serious Play Coach. With that in mind, we now run a series of different team building and brainstorming formats. I also developed a motivational speech about change that I have given in five languages in many countries all over Europe now.



Dirk during a show

HBM: Have you collaborated in any projects with the LEGO® Group?

DD: Not so many. We do work a lot for LEGOWORLD in Holland. We built the statues of King Willem-Alexander and Queen Maxima for them, and then also that planet of creativity – nobody ever came up with an official name for it – a big globe with a diameter of about 1.5 meters and six continents. Every continent is in a different LEGO® theme, but in a very creative way: technic bricks to build a forest with tyres, a pirate island in the shape of a skull, and a giant snake crawling over several continents. We also had our art exhibit at LEGO®WORLD a few times. And every now and then I have the honor to perform as a comedian or motivational speaker for some LEGO® event somewhere on the planet :-)

HBM: Do you have any contact with other LCPs?

DD: Yes, we actually meet once a year at an event hosted by the LEGO® Company. That is always fun. We’ve really become a bunch of friends. I could not imagine going to New York without visiting Sean Kenney, or being in Singapore without checking up on Nicholas Foo, and so on. During the year many of us contact each other now and then to see if we can work on something together, or exchange information... So yes, a fine little crew we are :-)

[1] K8 is a standardised box size used by LEGO®. A K8 box is 60x40x30cm.

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Interview: LEGO® Boost

By HispaBrick Magazine®

Images by HispaBrick Magazine® and LEGO® System A/S



During the LEGO® Fan Media Days we had a chance to talk to Carl Merriam about the new Robotics platform LEGO® has launched. We wanted to know a little more about the brick-built robots and how you can control them. We had a lot of fun playing with the models Carl brought along, but not half as much as we had talking to Carl about the models he helped design.

HispaBrick Magazine®: Can you tell us a little about yourself?

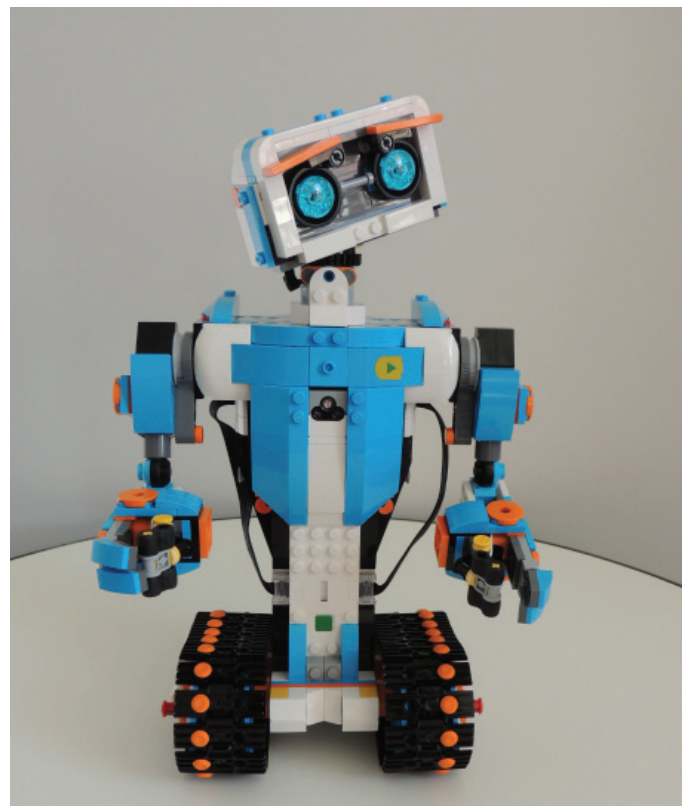
My name is **Carl Merriam**. I've been a model designer at LEGO® for 3 years. Before that I worked in video production, professionally, six years. I made videos for classroom instructions stuff and commercials. At the same time I was a LEGO® fan and I built a lot of models. It was the only thing I liked. I thought I would like making videos, but I didn't. I was in Iron Builder [1] round with the 2x3 white wing tip (47456) with Matt De Lanoy and I put a lot of stuff on Flickr (<https://www.flickr.com/photos/39069854@N07/>) over the years.

HBM: What is Boost?

CM: Boost was the idea to make a programmable system based LEGO® set for younger kids (7-12) MINDSTORMS is aimed at 10+ and we wanted to take the age down and allow kids to start younger with programmable LEGO®.

HBM: What's the difference between LEGO® Boost and LEGO® WeDo?

CM: WeDo was created as an education platform. That was specifically targeted at schools and all the stuff that you build with WeDo is based on a curriculum.



Vernie the robot

Boost is more for consumer - we focus more on having fun. Of course you learn how to program the robot while you are doing it, but the main point is to have fun: building a robot and then playing with it. So it's more of a toy orientation. I guess you could look at it as the difference between the EV3 consumer set and the EV3 education set. One is based on a curriculum and the other is more like a toy.

HBM: Is Boost meant to be a standalone theme or is it something that can be easily integrated into other themes as well?

CM: Right now we have one set that is the creative toolbox. You can build 5 models out of that. For the future we are not sure yet, but maybe something

HBM: Does Boost teach the kids how to design their models?

CM: Like most LEGO® sets, while you are building you learn how the bricks work. But we also have creative canvas models. There's a walking base, a door and a driving base and those are basic functions. We have taken the hard part which is building the functional part, the locking part, and we didn't put anything else on there. The kids are then encouraged to build their models on top of that. They can take that and either change the function a little bit for their purpose, or leave it the same, program is with the programming blocks we have made for that functional part and then build whatever they want. They can take the walking base and build a bear or a cat or a turtle. That is where we are trying to push the creativity in the kids. And because it is "regular (System) LEGO® and not Technic, the kids can relate to it more easily because they know that already. They can understand how to stack pieces on. Technic is a little bit more of an abstract building system.

HBM: What are the main models like?

CM: We have 5 main models. There's Vernie the robot, there is Frankie the cat, MTR4 is a multi tool rover that has a forklift truck attachment to lift things up and a hammer attachment you can add. We have a robot factory that can build mini robots, it can stack bricks and it has enough force to clutch them together and a small sized guitar that uses a distance sensor and a rotation sensor in the motor. The motor also has force feedback programmed in so it doesn't use a rubber band to return we use that for the whammy bar. Then there is the getting started model, a tiny car that we use to introduce the kids to what the hardware bricks are and how to program them. That is something you do at the very

beginning. After you have completed those steps and build the 5 main models you can go to the creative canvas models and build and program your own stuff. That includes the full programming environment, which is a lot deeper than what you use in the experience. That is where you have direct control or all the motors and sensors. You also have access to logic functions, random number generator... anything you would expect in a programming environment is also in this app. But you don't see that when you are going through the regular experience for the kids.



Frankie the cat

HBM: What about compatibility? When LEGO® brings out something new the bricks are always compatible with everything else, but hardware is often a different story. Boost uses LPF 2.0 just like WeDo. Does that mean it is compatible with WeDo?

CM: Physically yes, but as far as the programming side, I don't know

HBM: How do you see the transition from this platform to MINDSTORMS?

CM: Boost is targeted at a different group of kids. MINDSTORMS has programming written all over it. Boost is just focussing on the fun and on being able to play with it.

We built Vernie first because he is the main model and we decided that would be the main focus. Then we took the parts



we used for him and used them to build other stuff. That got adjusted and parts were moved in and out. When you build him you'll see he is kind of weird inside because there are parts we needed for the cat and they have also been used in places that are not very visible. That way we could optimise the number of pieces necessary to be able to build all 5 models.

We also did a lot of cable management, to make sure everything was tidy and well organised.

In **Vernie** we have limited functional stuff and we added in other functional elements for the other models. Vernie has two 24 tooth gears in his head and the set also contains two 8 tooth gears (not in Vernie). We needed a small number of Technic beams for functions, most of which are used in the other models.

A lot of the functional stuff was designed by Jurgen Thomsen. He has a lot of experience from MINDSTORMS. He created the movement for Frankie where his eyebrows move, his head tilts and his neck rotates all with a single motor.

We have to use Technic elements to make it strong and for the functional parts, because the motor parts are all based on Technic, but we tried to put as much System in there as we could to make it a System build and I think we have succeeded in that.

We will get the first boxes one of these days. We have to open them and build the models to check everything is in the box. As a LEGO® fan that is one of my favourite parts besides working on designing a set: the moment when you get to see the actual box, open the bags and build the model. About 6 to 8 months before the set is launched you get the box out. In that time they make the packing line, the packaging and everything else that is necessary. Once all of that is done the factory starts producing the set and the first 10 or so boxes are sent to us. It's a bad time to find a mistake, but if you do find a mistake then, it's much better than if you have already made 50,000 of them.

HBM: Which one is your favourite model?

CM: I think **Frankie** is my favourite. He's the one I worked on the most. There's a lot of my work in this model whereas the other models were much more collaborative. So he's my baby cat. When you build Frankie, the process is broken down into 3 stages. The first thing you build is his face, then you build the tail function and finally you build the legs. In between each of these stages there is a break where you get to code and play with it. And this process is the same for all the models. So it's build, play, build, play...

With **Vernie** for example, you build his head and chest with no tracks and no arms. Then you sit him on the table like a trophy and he goes something like "Hey! Nice to meet you! Let's get started" Then he starts up the motors and goes "Wait a minute? Where are my tracks?". So there is a story to each model, encouraging the children to play.

With **Frankie** we have an activity with a harmonica that he can play: the colour sensor in his mouth detects the different colours and the programming teaches you how to associate a sound to each colour. During this process you also only have access to the coding blocks you need at this stage.

Frankie: For the development of this we started with a human face that someone had made in a workshop. It was really creepy. The eyeballs could move around and there were eyebrows. It was fun, but too weird looking so we thought that maybe if we made an animal it would be less weird. We came up with different cats, dogs, raccoons and other animals.

HBM: Did you choose this colour scheme to make sure that it would appeal to both boys and girls?

CM: Our initial brief was to go down the middle and not make it too much for boys or too much for girls, and our creative lead originally came up with this colour scheme. We did a lot of testing with both boys and girls and we actually made about 20 different colour scheme combinations (one was M-Tron, of course, with neon-green eyes, but that didn't work out too good). This combination was one of the colour schemes that wasn't super polarising, but that the kids also liked. So they would vote for it as their favourite and also there weren't any kids that didn't like it.

HBM: Is there a way to look under the hood and see exactly what those blocks are doing?

CM: Not in the guided activities. In this area we don't want the kids to go into the block and change too much. We have Model Blocks that are pre-programmed specifically for the model. For Vernie for instance we have a motor block to move the neck to the centre position at a power level. In total there are 3 blocks for moving his head and the customization is in the speed so you don't really need to go into the block to change anything else for this activity. But when you have finished building the models there are introductions to how to use what we call the atomic blocks where you can go much deeper and see the exact coding inside them. Every time you use a coding block you get to keep it in your treasure chest for the model. Later on you can then open up those blocks and see exactly how they work.

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[1] Carl Merriam's personal Blog includes details of that contest: <http://bricklaboratory.blogspot.com.es/2014/>



Carl Merriam with Jetro de Château

Interview: LEGO® Minecraft™

By HispaBrick Magazine®

Images by HispaBrick Magazine® and LEGO® System A/S

MINECRAFT™ is an exceptional LEGO® theme in that it started out as a LEGO® Ideas set. Despite being a licensed theme, it also has one of the highest percentages of “standard” bricks per set in any LEGO® theme. This means it represents the essence of LEGO® very well, but at the same time it exists on a different plane from evergreen LEGO® themes like City and Creator.

We had the opportunity to talk to Joseph Kyde, a designer on LEGO® MINECRAFT™ and discussed some of those idiosyncrasies, and how MINECRAFT™ has made substantial contributions to the core of LEGO®.

HispaBrick® Magazine: How did you get involved with MINECRAFT™?

JK: I originally got involved in MINECRAFT™ around 2010-11 when I started playing the game. I’ve been at LEGO® for 3 years and I started at Creator. I’m not sure if they found out I was a fan of the game or not, but they asked me to get on the team and I was all about it because it is nice to have a designer on the team that is into it, that plays the game and is familiar with it. I have been on MINECRAFT™ for the last two years.

HBM: There are lots of Steves in the sets. Do you think that adding more character would make the sets more interesting?

JK: We try to strike a balance between offering Steve and Alex, the other main character, but the difficulty is that Steve and Alex are the default skins, the default appearance of your character when you play the game and we think it is really important to offer that. We recognise that people really want new skins and we are always looking at opportunities. We released two skin packs (ed: 853609 and 853610), that contain four different skins each, so there are a total of eight different skins. One is like a spaceman another like a knight. We offered those in recognition that there is a desire for more skins.

HBM: Are the sets you launch all taken from existing MINECRAFT scenarios or are there things that you make to expand on that?

JK: It’s a blend. For example, 21131 – The Ice Spikes is based on the ice spikes that occur naturally in the colder environments. We really liked the ice spikes in the game and we wanted to make a set based on them, but what do you do with them? In the game they are just big spikes of ice, but for the set we thought it would be cool if a player could make his home out of the ice spikes. So we looked at what kind of home you would make with the ice spikes as a starting point. We added ladders and put a bed on top with some red stone torches and a banner and an enchanting area. It’s inspired by the game, but you are not going to find anything exactly like it in the game unless you build it yourself. Other sets we have, like the jungle temple (21132), are things that are actually generated in the game. We just made a set that is based on that, but even when we do that we want to offer the ability to rebuild that. A lot of times when you find a jungle temple in the game, you take the stuff from it and build your own thing, because it is made of special bricks that are hard to find in the game. We wanted to bring that play to the jungle temple, so you can reconfigure it into a skull fortress or an expansive ruin or whatever you like.

HBM: You are adapting an existing game to the LEGO® system. What challenges do you find doing that?

JK: The challenge is making it easily identifiable as both MINECRAFT™ and LEGO®. For instance with the minifigures we do: we try to strike a balance between them being clearly a LEGO® minifigure and also clearly a MINECRAFT™ figure. That is indicated by the pixelated decoration and the cubic head, but it is still based on the traditional minifigure body. That is true with a lot of what we do in the sets.





Joseph Kyde - LEGO® Minecraft™ Designer

HBM: In some of the newer sets you are using modular building. Do you plan to expand on that?

JK: Where it makes sense. Like I said, it is an integral part of the game that you are building things and, for instance, with the jungle temple it is a nice feature that you can take it apart quickly and rebuild it into something else. We are always looking at opportunities where we can provide that in the physical building experience.



Elements designed by MINECRAFT team

HBM: MINECRAFT™ is one of the few themes that is still full of 2x brick (2x2, 2x3, 2x4, ...), but there is also a number of new elements. What new elements has MINECRAFT™ brought to LEGO® and have any of those elements been recycled into other themes?

JK: Actually, that is why I brought this set: 21130 The Nether Railway. While it has the MINECRAFT™ specific head, we were the ones who wanted to develop the 4x4 tile with bow (BL #27507) and the 2x2 tile with bow (BL #27925) and also this weird connector piece (plate 2x2 with design, BL #27928). These were developed for this set and for the Mountain cave set (21137) because we had done a track system before, but we thought we could do it even better. We looked at

how we could do that and we realised we could make these new elements that work very well for our purpose, but we thought they could also be useful to other people, both fans and LEGO® designers. Luckily, people responded really well to them. They started putting them in everything so we are happy we were able to expand the LEGO® vocabulary. I'm still interested in seeing if the plate gets reused in any sets, but I have already seen a couple of fan builds incorporating it. In this set Steve is on a mine cart in the nether, an area of fire and intense heat that is the most dangerous realm of MINECRAFT. There are these little creatures that hop around and they are magma cubes. Steve has built a mine cart system so he can transport certain resources and as he passes by the magma cube bounces up and down. We also have a larger version of the magma cube that is also able to bounce up and down. The track itself can be reconfigured very easily.

HBM: Regarding the palette you are using, can you request any special colours for your sets?

JK: If the set requires it... For instance, the Ocean Monument is a lot of earth green and sand green and those aren't the most common colours. So if it is necessary and it makes sense for what it is based on in the game we have to do to really capture the look and feel of it, but those are colours that exist in the current LEGO® palette and we are not requesting new colours. We haven't seen a need for that yet.

HBM: Since the MINECRAFT™ game is block based, is easier or more difficult to design sets because of that?

JK: I would say both. Parts of it make it a lot simpler in terms of knowing the vocabulary that you want to use, like we will probably use a lot of 2x2 bricks and a lot of 2x4 bricks. It also presents a lot of new challenges when you are building sets and still want to have that visual look based on a cubicle system, but you still want to make it a fun building experience and give it features. It is deceptively tricky, figuring out ways to stay true to the look of MINECRAFT™ but also to incorporate really fun elements of play and staying true to the LEGO® system of play.

HBM: What would be your perfect LEGO® MINECRAFT™ set?

JK: I think a good MINECRAFT™ LEGO® set is modular, reconfigurable and it brings to physical life the parts of the game that are most fun to experience. It perhaps gives a new dimension to the physical play experience that you can't really have in the digital play experience, or that give kids an opportunity to act out things that they may not be able to act out in their MINECRAFT™ game.

HBM: Is there any idea or way to link the sets to the real game?

JK: We built a digital version of the Mountain Cave set in MINECRAFT™ to see how it would look. That was a fun experience. I think the way it is linked is in how we design the sets and making sure there always is that aesthetic link. As for having some sort of actual link I'm not sure how that would happen, but I think it is a really good idea. Our main concern is making sure there is a fun play experience that captures both the MINECRAFT™ spirit and the LEGO® spirit. I'm not sure that you actually need a literal digital bridge between those two if you are providing a fun play experience that takes place in that same kind of world.

HBM: Do you have any feedback from gamers that have started building the LEGO® sets and how they feel about them?

JK: It is always interesting to see feedback from MINECRAFT™ fans. They can pick up on things that we didn't necessarily think were obvious, little Easter eggs we put in and hope people will notice. It is nice to see they recognise we are trying to pay attention to make sure that it is as accurate to the game as possible.

HBM: So far, the sets are LEGO® reflections of existing MINECRAFT scenarios. Have you considered going outside those scenarios and adding new elements that don't currently exist in MINECRAFT™?

JK: I think we want to stay true to the IP where it makes sense. We want to make sure that our sets come across as really good MINECRAFT™ representations, but of course kids are able to do that on their own with the sets.



Dynamic Minecraft element

HBM: The game has certain action elements. How do you transfer those elements into LEGO® action elements while keeping the set stable? There is no gravity in MINECRAFT, for instance.

JK: We can't do certain things until we figure out an anti-gravity brick that floats in mid-air. That is difficult because MINECRAFT™ has certain things that LEGO® can't do, just like LEGO® has certain things that MINECRAFT™ can't do. We try to do what we can, especially when it comes to characters, or features, or actions like being able to make traps. In 21134 The Waterfall Base we have a little lava flow that can be revealed to protect your house from zombies. And you can build similar things in the game. The same goes for the Mountain Cave that has an elevator and there is a way to build an elevator in MINECRAFT™ using complex red-stone circuitry that is in the game. We always like to be able to figure out ways to bring that kind of play. In the game when the lava magma cubes bounce they separate into different layers and it was a big challenge to try to figure out how to represent those things in play to it is fun to play with it as a toy.

A lot of the sets are based on a 6x6 grid so it is much easier to create a whole world and they are all compatible with each other. The Railway set in particular is based on being able to break it down into individual 6x6 pieces and you can reconfigure the track as you like and you can also add this to the Mountain Cave, which also has a track system, and you can easily integrate them. And you can do the same with all the sets.

HBM: Some people say that MINECRAFT™ sets are perfect parts packs to stock up on "standard LEGO®"

JK: We like seeing kids buy the sets to play out their MINECRAFT scenarios, but if people are going to buy them for parts packs that's fine too. I know that the Ocean Monument (21136) that will come out later has a whole bunch of sand-green in it, so I imagine that might be a pretty popular set for just getting sand-green pieces.



21136 - Ocean Monument

HBM: Earlier you mentioned skin packs. Is that something you think might become a trend?

JK: It could be, but I can't tell you anything about future products. We are always looking at new and exciting ways to bring the variety that you can get in MINECRAFT™ to our LEGO® products.

HBM: What is your favourite MINECRAFT™ set so far?

JK: Probably the Ocean Monument, selfishly, because that's the largest set I have ever worked on. It was a big challenge, but it was really a fun set to build. There's a fish creature in it that I particularly enjoyed building. It has all these spikes poking out of it; you turn its tail and it launches a missile out of its mouth.

HBM: How long does it take to design a set? You have some inputs from the IP and then you probably get a brief. So from that moment until the set arrives on the market, how long does it take?

JK: We usually work a few years in advance. It depends on the set and the IP, but to go from the very first idea to people being able to buy it in the shops it's a little while.

HBM: Does the IP control everything you do or do they give you some freedom?

JK: They are very open to working with us. If we have a really exciting idea we welcome having feedback about what they think of it, but they are really nice to work with. We are not really restricted or anything like that. They are quite open to our ideas.

HBM: How large is your team?

JK: We are three designers working under a design manager and then there are the building instruction designers and a graphic designer.

HBM: And do they all have a similar background to yours?

JK: Somewhat. I have a background in industrial design and quite a few years of experience in toy design. Another of my

co-workers is also a designer, but he was also a big LEGO® fan. I was too, but I think he was a bit more so. One of the other co-workers doesn't have a background in design, but he is a big fan of LEGO®. It's quite a diverse group.

HBM: And is being a MINECRAFT™ fan a prerequisite for being on the team?

JK: No, it's not a prerequisite, but it definitely helps! Because if you are not a fan you at least need to know the game and being a fan just makes it that much easier.

HBM: So does that mean that part of your work consists in playing the game to make sure you stay up to date?

JK: yes. We have to do extensive research so we have to play the game! It's a tough job, but sometimes you have to take a break from playing with LEGO® bricks and just go play a video game.

HBM: The ultimate twist would be for a company like TT games to develop the LEGO® MINECRAFT™ videogame

JK: And then we would do sets based on that! LEGO® MINECRAFT™ LEGO® MINECRAFT™ sets :D
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Joseph Kyde and Jetro de Château next to a LEGO® Minecraft store shelf

Interview: LEGO® Life

By HispaBrick Magazine®

Images by HispaBrick Magazine® and LEGO® System A/S



What is LEGO® Life and what is its purpose. When the opportunity presented itself to interview the senior director of LEGO® Life we were thrilled and not entirely sure what to ask him. Fortunately for us the conversation turned out to be fluent and we ended up learning a lot about this new social platform that LEGO® has created.

HispaBrick® Magazine: To start of can you tell me a little about yourself?

I'm **Robert Lowe**, I'm the senior director for LEGO® Life. Prior to that I was heading up LEGO® Club, which in some ways is the predecessor to LEGO® Life. Before that I worked for the BBC and for Nintendo. I've been with LEGO® for around 3 years and I love it. I started off in London for year and then when I was asked to head up the LEGO® Life project and build a team to create the experience I was asked to move to Billund, so me and my family moved to Denmark 2 years ago. Generally that has been a very positive experience. It's a very nice place to be with kids, and when the weather is like this it is lovely (ed. On the day of the interview there was a nearly cloudless sky and the temp was in the mid 20s), but it's not always like this to be honest. But I love working for LEGO®.

HBM: Can you define what LEGO® Life is?

RL: Essentially, it is a social network for kids under 13. The core purpose is to allow them to share their creations with a much wider audience than they would ordinarily be able to, and to be inspired both by other kids and by LEGO®. When the models kids build start to break down and end up in big bins in the corner of their room, what can they do with that? How can they be inspired to build different things? Some kids can just go straight into it and build stuff, but others need a bit of help and guidance as to what to create. LEGO® Life was built to do that and to allow them to communicate with each other. They can upload something and millions of other kids can see it. Normally, if you are under 13 you can show it to your friends and family and maybe if you are really lucky it can be featured in the LEGO® Club magazine, but that is about as far as it

goes. Social networks are essentially designed for teenagers and adults, so we decided to design something that is really safe and easy to use, but also fun and interesting for kids.



Robert Lowe showing the LEGO® Life app

HBM: How do parents know that LEGO® Life is really a safe place for their kids to be?

RL: There are three main things we did. Because of who we are as a company, what our philosophy is and the values of the LEGO® brand it is extremely important that we don't leave any margin of error. It has to be kind of triple locked. That means functionality-wise we are going to make some decisions that may not be as broadly appealing, but it was a sacrifice worth making.

First of all, we made it completely anonymous. When you sign up you create a minifigure of yourself in 3D and you are assigned a LEGO® username that is not a real name. It is actually randomly generated. At the moment you can't change that name, but we have had a lot of complaints from kids that have a name they don't like, so we are going to give them a chance to change that and look at multiple names to choose one they like. That avatar of and name then become the way you are represented on LEGO® Life, but it will also start to become the way you are represented across all of our LEGO® digital experiences. Soon we will also allow kids to unlock different outfits and elements for the minifig from different themes. The more creations you upload the more different outfits you can use for your avatar.

The second thing we do is that you are not able to upload anything that you have created yourself without moderation. We have both machine or automated moderation and human moderation. Essentially, the picture won't go up until it has been checked. There is no way to upload a picture straight away. That's very heavy from a workload perspective. Particularly at launch we had a lot of users. You can type in text comments on LEGO® created open comment, and on user generated content you can type in emoji and sticker comments. The reasons for that are that it keeps moderation workload a bit lower because you don't need to moderate the emoji and sticker comments and when it comes to kids (and sometimes adults) they can be quite sensitive when they have created something so we don't want to create somewhere where there is a lot of criticism. We want to encourage them to build more and do more things with the bricks. A lot of the emojis and stickers we have created are about positive reinforcement. The idea is that if you have nothing good to say then don't say anything, but if you do, then you have this language we have created to give feedback to the kids.

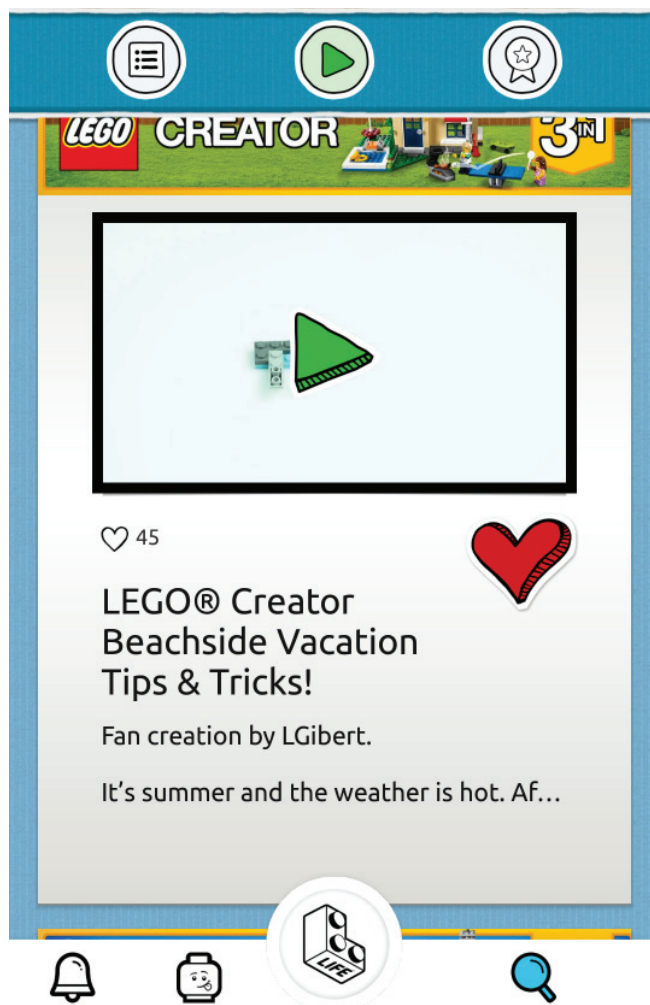
The third thing is that it is completely open. We are not allowing any private chatrooms or one-to-one chats in the experience. The equivalent of a Whatsapp experience is not in there. It is more like Instagram or Pinterest where you can see all the comments and anyone can flag anything if they see anything they think is inappropriate. Since the users are kids they also don't have that expectation. Some of them may try out social networks when they get a little older, but at the age of 9 or 10 they just think it is cool to show other kids what they have created.

We are trying to build something that is a social network but it is not built exactly like any existing social network. There are elements of Instagram in there and Pinterest, but that is just what we think is good design work rather than trying to replicate an adult social network for kids.



HBM: Do you expect adults to use the platform?

RL: Yes. We have designed it with kids in mind, but what we are going to start doing before the end of the year is giving statuses inside the experience. If you are a beginner, a builder, you can work your way up to becoming a master builder in lots of different strands; that starts to gamify the experience. We want to be able to have superusers who will probably be AFOLs and TFOLs who are able to upload their creations and building tips and have a status inside the experience that is almost like a mentor.



Example of AFOL collaboration

HBM: Will that status include community moderation?

RL: All of that content would still have to go through our moderation. It is quite difficult to say "this person doesn't need moderation". Even so, the system we are using can allow you to have good actors and bad actors. People who always display good behaviour can be given a lighter form of moderation than the ones who are potentially on a risk list or haven't uploaded before.

HBM: And will you use some of those users to help flag content that might have escaped the eyes of the moderators?

RL: Right now the app has a flag option and any user can use that. The new system we are putting in place means that if a really reliable person flags something it gets elevated quicker. So it scales depending on the person who is writing the content or flagging it.



HBM: What kind of content can you upload?

RL: You can upload a picture to a gallery and then you can add stickers to that. You can also have slideshows. Soon we will be adding stop motion videos, but we have to apply a lot of constraints to that. If we allow anyone to upload a ten-minute stop-motion video with audio, we have to avoid personal information about the child. Anonymity also means you can't hear their voice or see their face. There are special parental permissions you can get to allow kids to do that, but in order to do that we need kids' parents to verify themselves in the experience. In the future we will include that feature. It will be like a parental dashboard so that parents, once they have identified themselves through some kind of ID can say "I don't mind if my child puts a picture of their face up or I don't mind if my child uses their voice inside the experience. It has to be the parent who has been approved who says that. Right now however, any videos we put up need to have the voice masked. What we try to do is turn that into a fun feature. We will probably put a couple of voice modulators in there that can make them sound like Chase McCain or another LEGO® character so that I isn't the voice of the child, but it is something fun. We are looking into a solution that uses facial recognition so that when it sees a face on the screen it automatically puts a minifigure face on it. You can be really creative when you have high constraints.

HBM: Does that mean that things like stop-motion will be something you can create inside the app?

RL: We don't want to bloat the app too much. When it comes to stop-motion we are looking at a couple of options. It might be that you can do it inside the app, but maybe there will be a separate related app to create the stop-motion in and then upload it to LEGO® Life. It's quite a common thing now to have a different apps all linked together with the same account – think of Facebook and messenger or the GoPro suite of apps – and this is what we are trying to do with LEGO® Life. There is a LEGO® TV app which is going to become much more like LEGO® Life.

It will still be video content for LEGO®, but you will be able to like and comment on it. Then we will ask users if they would like to upload pictures of their own builds and that is when we

will guide them to the main LEGO® Life app. We are also looking at a kind of story maker app and that is where the videos would come in. That would also feed into the LEGO® Life central app. The account system in all these apps would be the same, using the same name and the same minifigure avatar and the same rewards you have unlocked in the other apps. We are also looking to integrate LEGO® Worlds into this experience so you can take your LEGO® Worlds 3D creations and share it through LEGO® Life. The way that will work is that you can share digital builds and other people will be able to download the builds they really like into their LEGO® Worlds game.

HBM: LEGO® Life is a free app, but LEGO® Worlds is a paid game. Do you expect there to be a digital building experience outside of the paid game?

RL: We don't know yet. I think the guys in the digital games theme are looking at a number of different ways in which they will bring LEGO® worlds into the mobile space. That's on the roadmap. We have also been looking at what the roadmap is for digital building in relation to LEGO® Life. We are doing a lot of prototypes at the moment, using Unity around simple 3D building. The reason is that we want to keep it as close as possible to physical building. We want it to be a platform where kids can share what they have created with physical bricks, but if they don't have any bricks with them or live in a part of the world where they are not able to get LEGO® bricks or they can't afford them. We still want to give them some kind of building experience so they can share their creations, but we don't know yet what format that will take. We are taking a very non-LEGO® approach to how we are making this. We release something that we know is not perfect and there are plenty of things that need improvement and we look at how the kids are using it and improve it all the time. If we see the kids particularly like something we will do more of it. If we see they are not using certain features at all we might take them out altogether or leave it. LEGO® is very good at making perfect boxes of bricks, with a great building experience after 3 years of development. Our motto is "only the best is good enough", but that is not necessarily the optimum way of developing in the digital space. If you look at some of the things we have created, like LEGO® Universe, that got delayed several times because they wanted it to be perfect before it came out and

then the business model it used when it eventually came out was something that the world had moved on from a bit. We are trying to really learn from those experiments and make sure that we put something out there that we know isn't quite perfect, but we know that we can improve over time. I think the company has been great at giving us the freedom and the resources to do that.

HBM: Aside from how and what users use inside the app, are you looking at any other kind of feedback to make those decisions?

RL: We have started including polling and voting functions inside the app to know what the users want. We collect a lot more data from LEGO® Life than we do from other experiences, but we have to anonymise it because we are dealing with kids. That means we can't look at specific users, but we can look at the behaviours and see the avatar builder is being used more in a certain context so we can start e.g. adding more trousers to the avatar builder. We are being much more data-led than we have been in the past.

When we get to some of the bigger decisions around what the roadmap is we will be asking for feedback from other areas where we have direct contact with people. Through the AFOL community and also through some of our brand retail shops and LEGO®LAND parks where we get people to come in a play and get the parents' opinions as well. So we are constantly testing it, both looking at data and then testing it with the people that matter the most.

HBM: Is the LEGO® Life app the beginning of the end of the LEGO® Club Magazine?

RL: No. We have actually changed the focus of the magazine a bit. We have reduced it a bit. Previously it was for age-group 4-13 and now it is for 5-10. It would be naïve to think that our 10,11, 12-year olds are spending more time on tablets than they have been reading magazines in the past. We have to be able to react to that as a company. We have to be able to know where kids are and give them the right kind of things they need from LEGO® in that space. So we are keeping the magazine. It is very much in our plans for the future for the 5-10-year-olds, but we have scaled it back slightly in terms of focus so that we can put more resources behind the digital one for some of the older kids. You can still download the digital version of the magazine in the app, no matter who you are. So if you are 25 or 30 you can get the LEGO® Club Magazine – or the LEGO® Life Magazine as it is called now – in the app and download it as a PDF.



HBM: Can you tell me a little about your partnership with UNICEF?

RL: There is a broader LEGO® partnership with UNICEF. We work with them more from a digital safety point of view.

They have looked at the app and done an audit of it. The results were very positive. They felt that we were taking a very responsible approach to what is potentially a very sensitive area: a social network for kids. They felt we had taken all the precautions we needed to and they gave us some feedback and advice on what to do in the future. They kind of gave us their stamp of approval as the right kind of experience for kids, especially those who are exploring this space for the first time. That is how we looked at this as well. If this is a kid's first social network, what should we be teaching them about and where should we be protecting them.

If you look at the experience and go into any kind of content, you will see it is tagged. We are starting to teach them around hashtags. This is a very different layout compared to LEGO®.com. The LEGO®.com website is organised by franchise, whereas here you can have multiple themes tagged in a single post. Kids can tag with whatever they want from the list of available tags. The tags are not just theme related. We are trying to reduce the barriers between the themes rather than trying to build them up. We are trying to take a LEGO® approach. We want kids to create something that has Friends and Elves and Star Wars and Technic and then to upload it and tag it with all those things and show how they have used all the different elements to make something awesome. That's what magical about the system of play and we want to embrace that.

You can add a maximum of three tags when you upload content. After uploading you can choose to keep it private – a lot of kids just want to create their own private gallery of LEGO® builds – or you can click on share and then it goes to moderation. At the moment moderation is longer than we would like. It takes between 20-30 minutes. When the new automated version is fully operational it should be about 5 minutes. The same team that do our engagement on Facebook and Instagram are also doing moderation for LEGO® Life and they are located all around the world.

Inside the experience the characters have their own accounts. If I go to Ninjago there is Kai. He comments and likes and posts his own stuff. There is also Batman. If Batman likes something that's really cool and when he comments on it then it is amazing. We think this may be one of the coolest things we have in the experience. ¡Batman approves!

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We would like to thank Robert Lowe for taking the time to talk to us and provide some insight into what LEGO® Life is and we look forward to seeing how it develops further.

#



Robert Lowe interviewed by Jetro de Château

Conversation with Mr. Bali Padda

By Richard Jones / The Rambling Brick

Images by Richard Jones

As part of the LEGO® Fan Media Days at the end of May 2017, the represented LEGO® Fan Media organisations were joined by the CEO of the LEGO® Group, **Bali Padda**, for a dialog. He has been with the LEGO® Group for 15 years, initially based in the United States, and then in the UK, where he has been in the role of Chief Operations Officer.

While the appointment of his successor, Niels B. Christiansen, has already been announced, Mr Padda gave us some interesting insights into some of the issues currently facing the company:

RLFMs: You have now been in your new role for around six months. What do you think are the challenges in this new role?

Bali Padda: It is exciting to be part of a leading global brand. The company turns 85 years old this year. Our challenges include being able to maintain sustainable growth, and to respond with speed and agility to challenges posed by the world around us. I would also like to see us focus on internal leadership development.

RLFMs: What's happening with regard to sustainability and environmental responsibility?

BP: We have just reached our 100% renewable energy target through investment in wind farms in Europe. There are also forthcoming solar panels on the roof of our factory in China.

We have also invested 1 billion DKK (135 million EUR) towards developing sustainable solutions for our products and packaging. We have one hundred researchers exploring new materials to develop new materials that will be more sustainable. Our goal is to be successful in this by 2032, which will be the 100th anniversary for the company.

RLFMs: How do you feel about AFOLs who are now working with clone brick makers such as LEPIN/Xinbao?

BP: It is disheartening to see. I feel, as a company, we should look into how we have 'failed' these builders.

RLFMs: What about countries with no direct LEGO® presence, but rather being distributed by a third party (such as Chile, and other countries in South America)?

BP: At present, we are at our limit with regard to our capacity of production from the new Chinese factory. It will be a few years before we can look directly at those markets. We have had huge growth over the past few years, but that might also turn out to be our Achilles heel.

RLFMs: Will 3D Printing make an impact in the direction the company takes in the near future?

BP: We have been experimenting with 3D printing over the last 10 years. Obviously it is used for prototyping, but as to where else it leads us, who can say?

RLFMs: How does the Group relate to the LEGO® House?

BP: The LEGO® House represents what we are all about as a company.

RLFMs: When it comes to technology, there are concerns regarding ongoing compatibility: LEGO® Bricks from 40 years ago are still compatible with the systems of today, however concurrent technologies are not always compatible. For example, when Mindstorms was initially released, there was adaptor cable available to the 9V motor system. With the change to power functions, this has not been produced.



BP: We are the masters of keeping the system in play. New technologies will often break with backwards compatibility in order to progress. However, we need to learn how to ensure more compatibility between current products.

RLFMs: How are you feeling about the LEGO® Batman Movie? It didn't feel as though it had the same impact as The LEGO® Movie...

BP: The LEGO® Movie exceeded everyone's expectations: ours, the studio's and the distributor's. There was a halo effect that saw an incredible increase in interest in the product. The LEGO® Batman Movie performed well, but perhaps not quite as expected in the wake of The LEGO® Movie. The studio was happy with the result.

RLFMs: What about the apparent dependency on third party intellectual properties these days?

BP: IP's are an important part of the business, but we have to work so that they don't become critical to us. We need to ensure that we continue to maintain a balance, whether it is 70:30 one year, and then 40:60 the next. We need to ensure that our core brands, the brick and LEGO® owned themes, remain strong.

RLFMs: About yourself: you were previously based in London. Have you moved to Denmark?

BP: I still live in the UK, but have an apartment in Billund for the working week. My family live in the UK. Some weekends I travel back to London and some weekends my family joins me here.

RLFMs: What about LEGO®? What was your favourite theme growing up? What are you currently building?

BP: We did not have any LEGO® in our house when I was growing up in India. Although now, my favourite theme is Technic. I am currently putting together one of the new large sets, which is due to be released in the next couple of months.

I first got involved with LEGO® as an Adult when I saw a remote controlled LEGO® car, which I bought for my child. My wife commented that our child may have been a bit young for that particular model at that time, but I got it anyway...

RLFMs: Thank you for the opportunity to speak with you!

BP: Thank you.

Once Niels B Christiansen takes over as CEO on October 1st, Bali Padda will continue to be actively involved with the LEGO® Brand Group.



Thanks to Jetro de Chateau, Lluís Gibert, of HispaBrick Magazine®, and Christian Breinbauer, of Revistabricks, for assistance in recalling and transcribing this dialog.

Please note: the questions asked came from just some of the LEGO® Fan Media organisations represented in Billund on these days. The actual source of each question was not recorded at the time. For a complete list of those LEGO® Fan Media represented, please refer to my blog post on the Fan Media Days.

<http://ramblingbrick.com/2017/06/05/busy-in-billund-the-LEGO-fan-media-days-2017/>

Thanks also to Kim E. Thomsen of the LEGO® Community Engagement Team for organising the RLFM days.

#

Interview: Adrian Barbour

By HispaBrick Magazine®

Images by Adrian Barbour (aka BrickMonkey)

HispaBrick Magazine®: Name?

Adrian Barbour (aka BrickMonkey)

HBM: Age and nationality?

AB: 39 and I'm a Kiwi (New Zealander)

HBM: What do you do for a living?

AB: I've spent most of my working life teaching (EFL and primary), but I'm now splitting my time between freelance proofreading/editing and commissioned LEGO® design.

HBM: When did you first start building with LEGO®?

AB: I had plenty of Town, Classic Space, and Technic LEGO® as a kid, but only got back into LEGO® as an adult around the time that the Star Wars and Ferrari sets were first released. So that was 1999 and 2004 respectively, but at that point I was mostly just collecting sets.

HBM: When did you first start posting models online?

AB: It was only with the discovery of LDraw and then BrickLink that I really became active building and posting MOCs online. My first proper models were military designs, as these were the one thing I couldn't purchase as sets. I had a presence on BrickShelf from around 2004, but it was only when I moved to Flickr in 2009 that I started posting the models which I have kept built and on display, and for which I continue to distribute instructions online.

HBM: What is your most recent set purchase?

AB: I recently bought the 75172 Y-Wing, and the very impressive 75144 UCS Snowspeeder. But my most recent purchase is the LEGO® Ideas 21309 Saturn V rocket – such an amazing set in every respect, from building techniques to functionality, sturdiness, and display value.

HBM: What are your favourite themes for building and collecting?

AB: Though I tend to spend more on BrickLink now than on sets, I still like to collect Star Wars models (mostly OT vehicles and UCS) and quality display models like the Creator Expert sets and some LEGO® Ideas releases. Some personal favourites are the 10213 Shuttle Adventure, 10248 Ferrari F40, and 21303 WALL-E.

When it comes to building MOCs my favourite genres are military and cars/motorsport – basically anything that goes fast or blows stuff up. I definitely have a preference for modelling existing vehicles or objects over building entirely original creations, as I enjoy the challenge of finding the best way to capture a fixed existing shape with LEGO® parts. My more recent commissioned work has also had me broadening my horizons in the areas of electric trains and microscale architecture.

HBM: How did you become involved in commissioned work?

AB: In 2016 I set-up a website (www.bm-mocs.com) with the goal of streamlining the distribution of PDF instructions, which I had been giving away through Flickr and email for several years. Prior to this I had also been asked a few times to produce commissioned projects, and once I had the website in place I started to receive a lot more requests. I don't have a huge collection of spare parts, at least compared to many AFOLs, as I do most of my design digitally using LDraw and then LPub for instructions, using what spare parts I have mostly for testing mechanisms and connections.

HBM: What is your favourite/largest LEGO® creation?

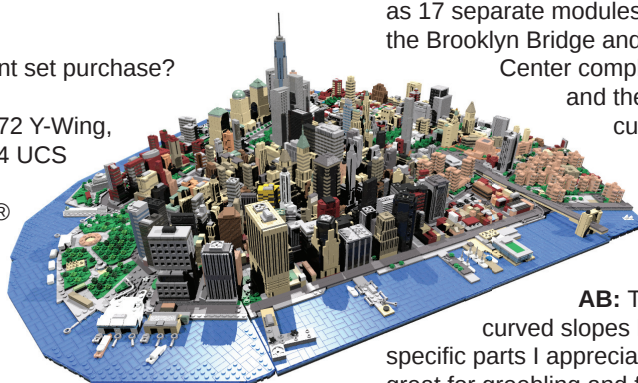
AB: I have three favourite personal MOCs – the Scud B TEL truck, my minifig-scale AC-130U Spooky II gunship, and a fictional Ferrari LMP1 race car. However, my largest designed model, produced on commission for Blue Brixx (www.BlueBrixx.com), is a 20,000 piece modular microscale architecture set of lower Manhattan. To be produced and sold as 17 separate modules, the full model covers everything from the Brooklyn Bridge and Tribeca, through the new World Trade Center complex and Wall Street, to Battery Park and the South Ferry terminal. I am also currently working on a series of trains and WW2 armour for the same client.

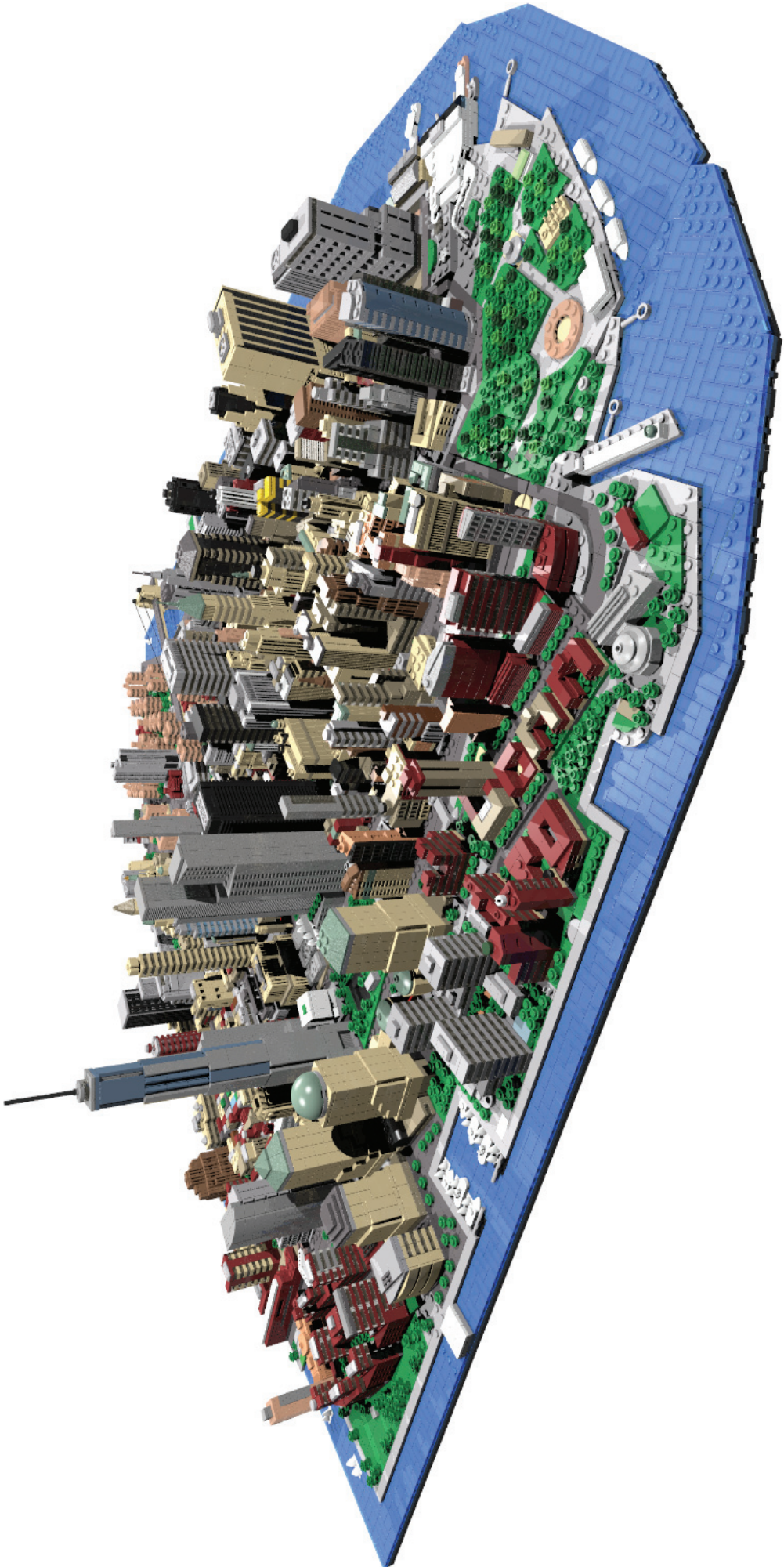
HBM: What is your favourite LEGO® element?

AB: The 1x2-1x2 brackets and various curved slopes have transformed MOCing, but the two specific parts I appreciate most are the turntable top (3679) – great for greebling and for connecting plates in limited space – and the 1x2 ingot (96910), which is my favourite part for greebling detail. I'm also very grateful for the printed versions of the 1x1 round tile (98138) and double cheese slope (85984) now available.

HBM: How much time do you spend building with LEGO®?

AB: With the website and commissioned work, most of my time is now spent on LEGO®-based activity. However, I also





balance this out with my other passion which is martial arts (I train in karate and jiu jitsu).

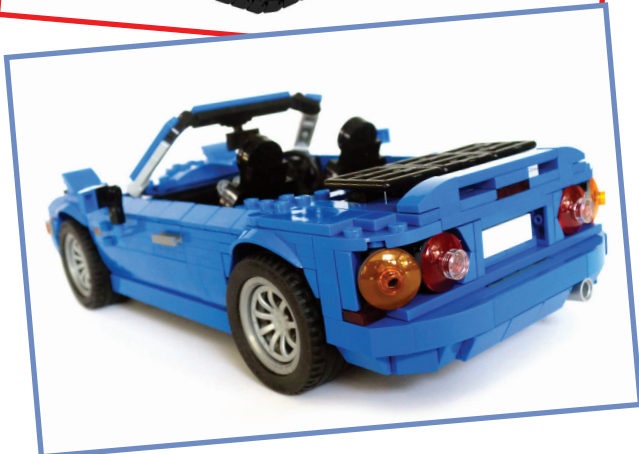
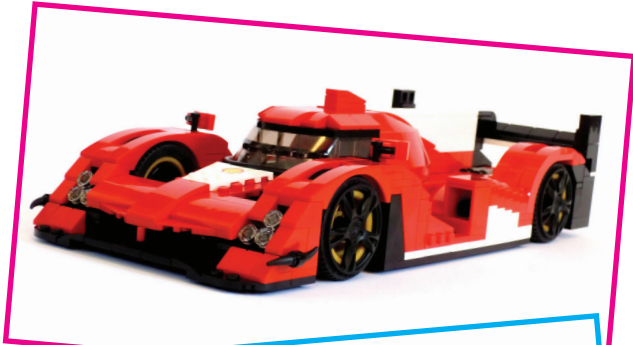
HBM: How did you become involved with HispaBrick Magazine®?

AB: I completed a proofreading and editing course in 2016, with the goal of supplementing my income post-teaching, and asked the HBM editing board if they'd like some assistance with their English-language translated material as a way of building up some proofreading experience. With my knowledge of LEGO® it was an ideal match, however I'm just part of a team so not all remaining errors are my own!

HBM: Are you involved with any LUG?

AB: I have been a member of LUG4/2, the New Zealand LUG, since 2011 and was on the committee responsible for organizing and running our major event – the Christchurch Brick Show – in both 2013 and 2015. I am less involved now after relocating out of Christchurch, but I did attend our latest CBS 2017 show on July 15-16, and some pictures of this amazing event are included below.

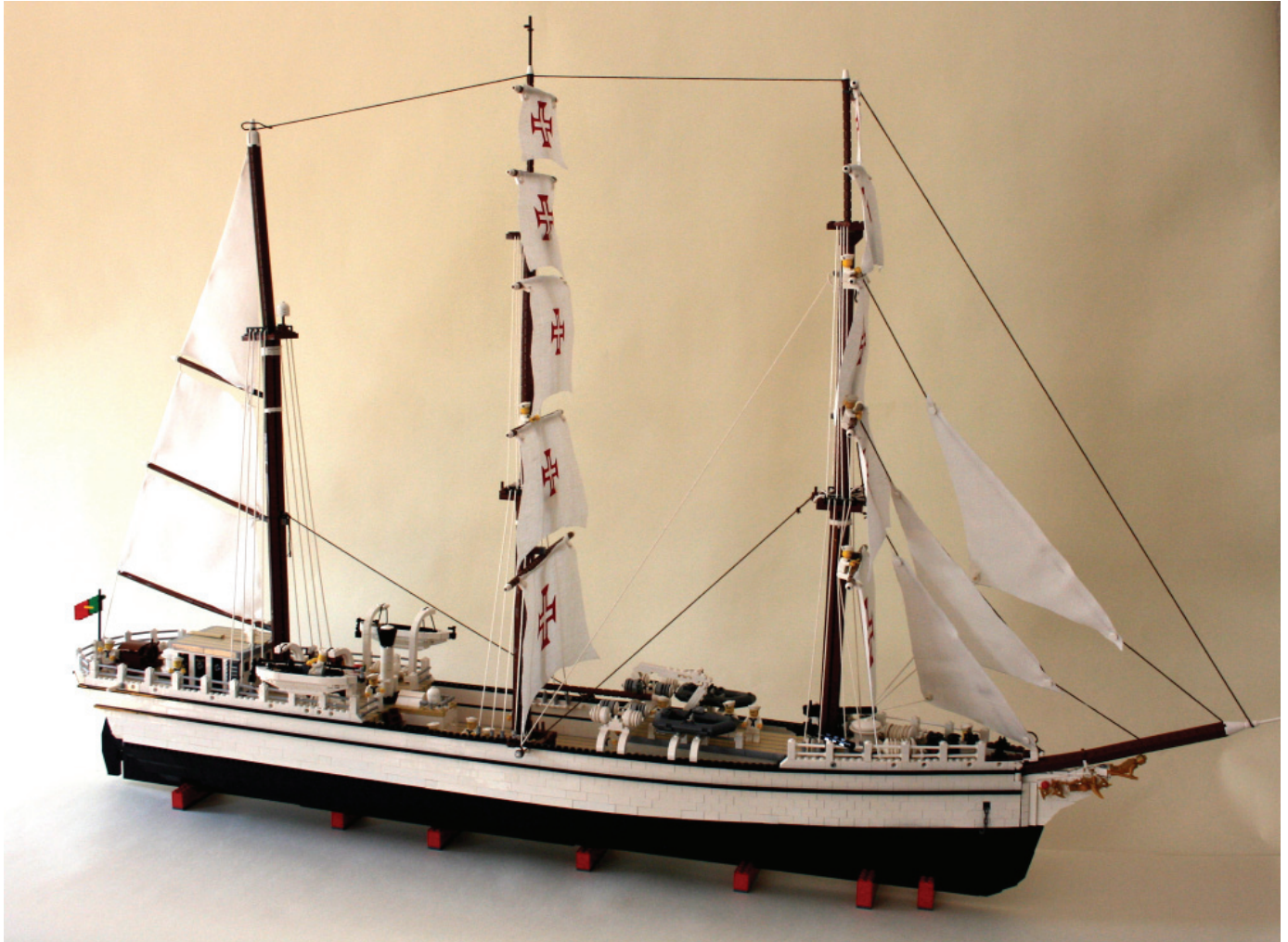
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NRP Sagres

By Jorge Reis

Pictures by Jorge Reis



In this article we will visit the training ship NRP Sagres, built by Jorge Reis from Portugal. We met Jorge Reis at an event in Paredes de Coura, where he kindly showed us all the details of this MOC and explained its history. We then asked him to contribute the following article so we could share this great model with our readers.

NRP Sagres

The NRP Sagres is a three-masted barque built in 1937 at the Blohm & Voss shipyard in Hamburg and was originally named 'Albert Leo Schlageter'. It was the third in a series of four similar ships built for the German Navy. After World War 2 it was sold by the US to Brazil, before being purchased by the Portuguese Navy in 1961. Since 1962 it has been employed as a training ship under the new name 'Sagres'. In addition to its mission with the students at the Portuguese Naval School, it is also regularly used as a travelling embassy for Portugal.

Its Symbols

The Cross of Christ shown on the sails is one of the symbols of the ship. When the ship is moored, the sails are normally doused except for one that is always up, allowing for its identification. The figurehead of the ship represents Prince Henry the Navigator (b.1394), the third surviving son of King John I and a great initiator of the Age of Discoveries.

NRP Sagres in LEGO®

I finished this model in September 2014 for an exhibition of the Portuguese LEGO® Users Group – PLUG (Associação Portuguesa de Utilizadores de LEGO®). The first presentation of the NRP Sagres in LEGO® was made by Commander António Manuel Gonçalves of the Portuguese Navy.

The model is built exclusively with LEGO® pieces, though slightly starched pure linen was used to represent the sixteen sails – an important component of this majestic ship. The dimensions of the ship in LEGO® are 1.4m in length, 1m in height, and 0.2m in width (dimensions in studs: 176x128x22). The model contains more than 20,000 pieces in 12 different colours. The main colours used are white and black for the hull, tan for the deck, and reddish brown for the masts and the booms.

The three ship wheels are a characteristic feature for operating the real ship. The rudder is manual and there are two command posts: the reverse or emergency wheel, which is connected directly to the mechanism, and the two normal wheels. All wheels are connected to the rudder by means of crown gears, just like on the real ship where it normally takes two men to operate a wheel.

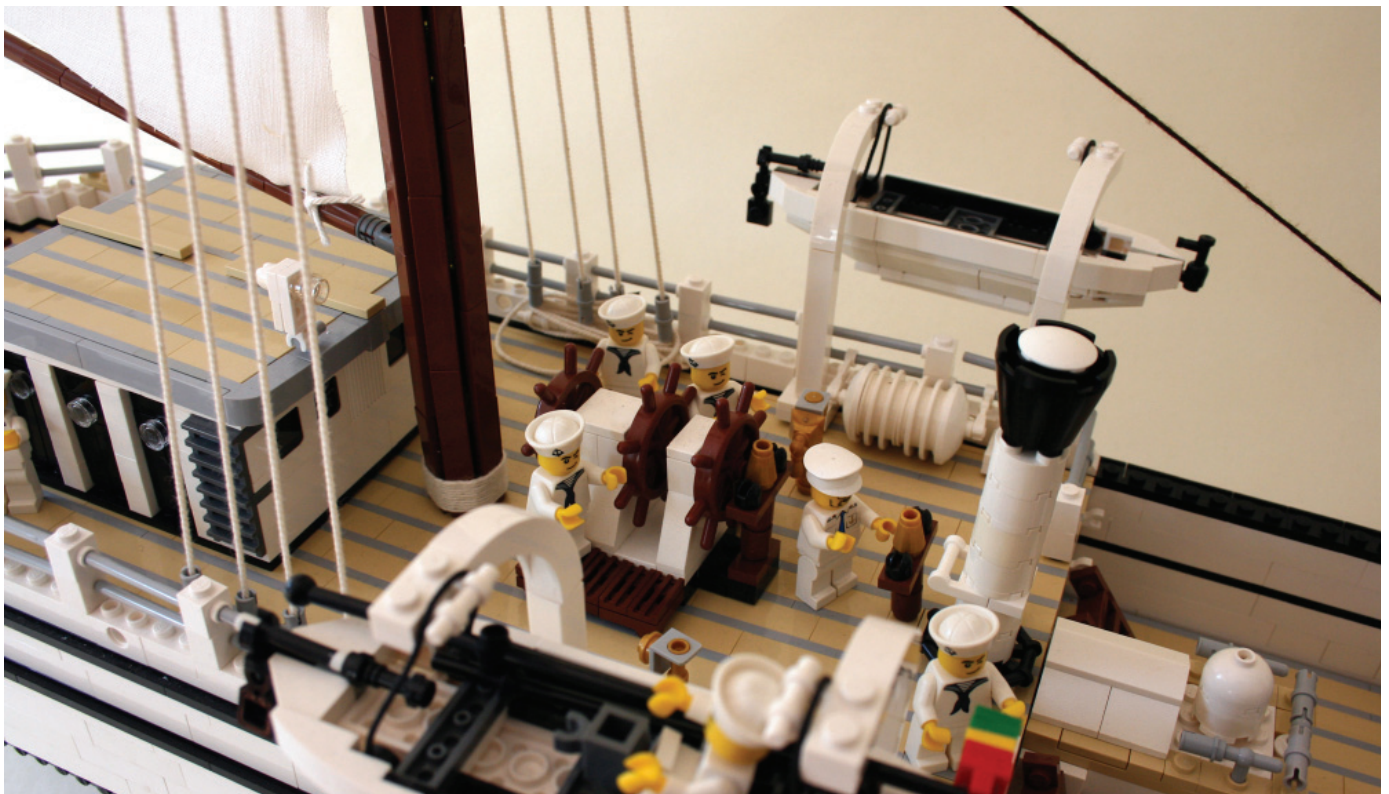
As for construction time, it took two years due to the high number of pieces and the different building and rebuilding stages of the hull, deck, masts and sails. In addition to the high level of difficulty, the construction time was also affected by cost (€3,000). The pieces were acquired through the LUGBULK program and from Portuguese BrickLink shops.

I built the replica using SNOT techniques, with Tan bricks and Light Bluish Grey plates. In addition, the ship is built symmetrically so that the studs always face outwards. In this way, the deck is connected from below. Some hidden plates and bricks connect the sections, achieving a strong solidity and finish similar to that of the real ship. I have also included specific City pieces for purposes very different from their normal usage. Some of these are car parts: Wheel 30.4x14



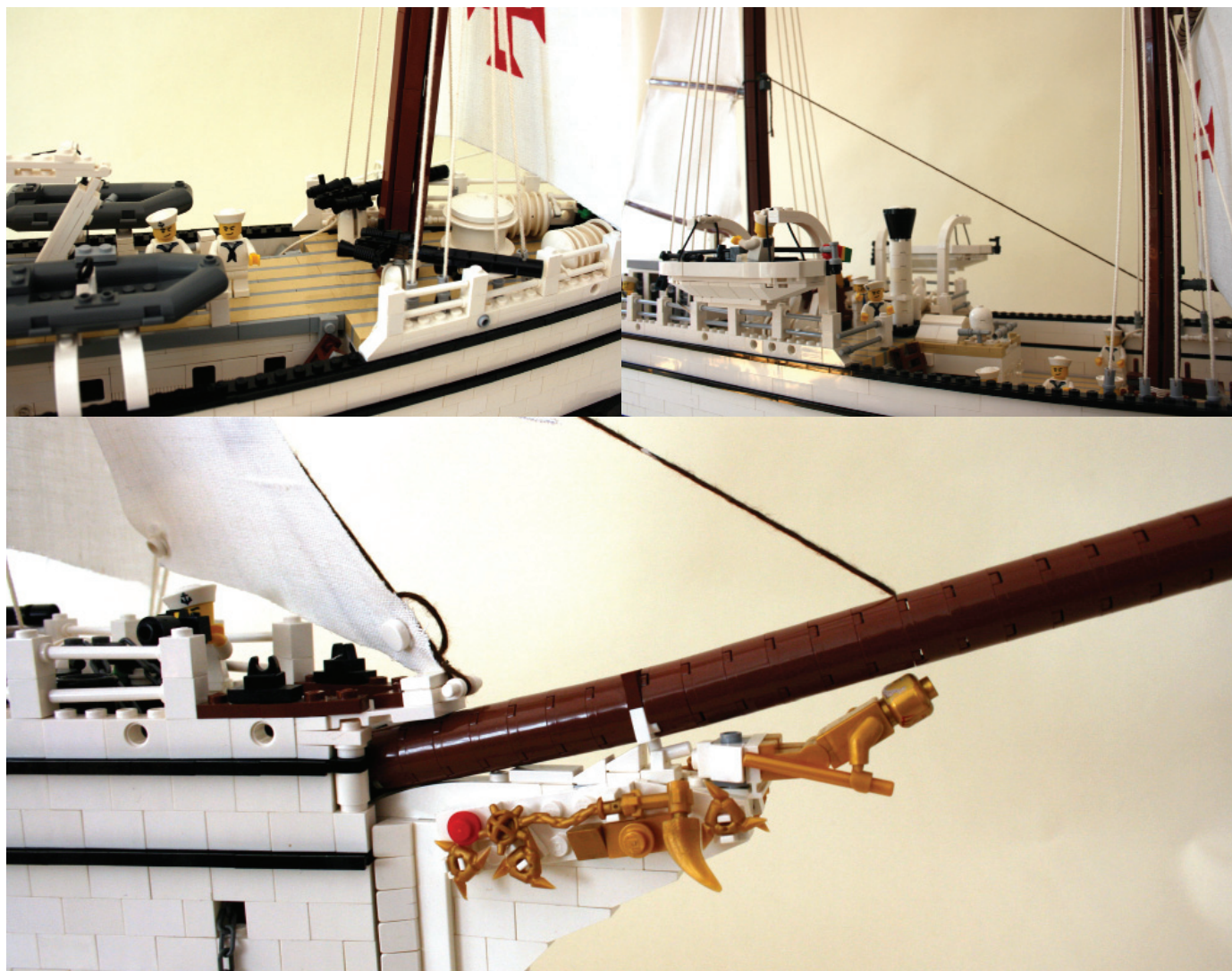
VR (Ref. 2994) which I used for inflatable rafts, and Brick Arch 1x6x3 1/3 curved (Ref. 6060) used for the life raft davits. Some other interesting parts I have used are decorative elements from Friends sets, which you can see on the controls and the wheel.

Nearly all the parts I have used are common bricks, slopes and plates found in many LEGO® sets, although the hardest thing



was to get them in sufficient quantities. In addition to the common parts that you can see, I have also used several Technic bricks in the hull to give it stability and the get the curved effect. This is where most of the parts were used and it was the hardest part to build – and the part I liked best! The top part of the curve of the hull, in white, was very hard to achieve. But the hardest part was closing the deck and placing the masts. Cables and backstays were used to secure the masts, using the same techniques used in the construction of a sailboat.

One of my favourite details in the build is the bell of the ship which was built with these elements: a pearl gold Cone 1x1, a small black Lever (Ref. 4593), and a black Technic hub / handle 1x1 (Ref. 424). The way the parts are connected means the clapper can move inside the bell. I discovered this construction by accident, as I had never seen it used before. And more importantly, it's at the same scale as the ship!



It is important to mention that the original model of the NRP Sagres in LEGO® has already undergone a few changes. You could even say that it is currently in version 1.2. Will there be any more changes? Yes, because I will continue to improve the construction as new elements come out and as new building techniques are shared by others.

The model can be presented individually or in a specific LEGO®-built structure. A new project for the NRP Sagres in LEGO® is currently being developed – it will soon appear in a new building and will be completely integrated, ready to tell a whole new story.

#

LEGO® and Robotic classes in Japan

By Alberto Moreno

Images by Alberto Moreno



Robotics will be a mandatory subject in Japanese schools by 2020. According to recent studies, 49% of current jobs will disappear due to the use of robots in the workplace, and the Japanese Ministry of Education takes these studies very seriously. As a result, robotics and programming studies aimed at children are no longer a rare sight in the country. In these studies you will find that the presence of educational robots from LEGO® is quite pronounced.

These materials are easy to obtain and there is a lot of documentation available. A well-known brand like LEGO® transmits confidence to the students and the security of a stable brand makes it possible to develop long term plans. All these factors have been decisive in choosing LEGO® for teaching robotics.



For the little ones there is LEGO® WeDo and in 2017 LEGO® launches the LEGO® Boost kit. But the undeniable star is the MINDSTORMS EV3, which has been present in many international competitions, such as the WRO (World Robot Olympiad) which is also celebrated on a local level.

As an example of how widespread the use of LEGO® MINDSTORMS is in Japan, the Japanese company Youmemiru started the Robo Done Robotics Academy franchise project for kids aged six and up, using MINDSTORMS EV3. After only a few years there are already 50 academies all over Japan and they are expanding to places like Hong Kong, Shanghai, New York and Seoul. For the second year they held the annual RoboFes 2017 Robotics Festival in Osaka at Kansai University, tripling the number of participants. Children between the ages of 6 and 12

flocked to the university to build their LEGO® MINDSTORMS robots, program them and compete. The attendance of over 1,000 demonstrates that Japanese interest in robotics is growing exponentially.

The competition consists of navigating a circuit with different objectives to accumulate points. In the event of a tie there is a speed bump, so it is not just about completing the circuit through all the tests – you have to do it in the fastest and most effective way. The tests range from simple runs from point A to B without touching the walls to line following and transporting blocks from one area to another. The competition focuses solely on programming and all teams use the same robot design.

Thanks to the LEGO® MINDSTORMS programming system and the number of robot assembly guides available online (facilitated by the WRO) children learn the basics of programming and schools can transition the programming language in blocks





from LEGO® to Python easily. With a five year educational plan you can find children who start programming with LEGO® MINDSTORMS at the age of six and at ten are already programming robots with Python – something that even science fiction literature would have found implausible.

But in Japan robotics education is not confined to the most innovative academies and schools. Even Buddhist temples are offering MINDSTORMS EV3 programming courses with Robo Tera ('temple' in Japanese) – a collaboration between Robo Done and a number of Buddhist temples throughout Japan.



These Buddhist temples had a problem. Although the Japanese population continues to attend and participate in temple activities, these were too antiquated to attract a new audience. In other words, they noticed there was no generational relay to continue the culture of the Buddhist temples. However, by offering construction and programming classes with LEGO® MINDSTORMS EV3 robots they have found a way to attract children of all ages. It is interesting to see how children build and program robots in a temple, following the directions of a buddhist monk. Tradition and the future go hand in hand thanks to LEGO® MINDSTORMS.

Robo Done: <http://done-school.com/>

Robo Tera: <https://robotera.jp/>

Contact: Alberto Moreno a.moreno@youmemiru.co.jp

#

Stuck In Plastic - A creative collective of toy photographers

By Boris Vanrillaer

Pictures by SiP



A creative collective of photographers **stuck in plastic**



We all love our toys. Some of us are collectors, some build amazing creations, and others like to take pictures. Not to document the actual awesomeness of the build, but for the art of taking pictures. They call us toy photographers.

Put simply, toy photographers are people who like to take macro pictures of toys. The best of these photographers enjoy bringing their toys to life, recreating the movies they love or simply telling their own original stories and adventures.

Photographers who use LEGO® minifigures as their primary subject matter are part of a vibrant and much larger toy photography community. You will find these photographers on pretty much every social media platform if you take the time to look: Flickr, Facebook, Google+, 500px, Twitter, DeviantArt and Instagram to name just a few.

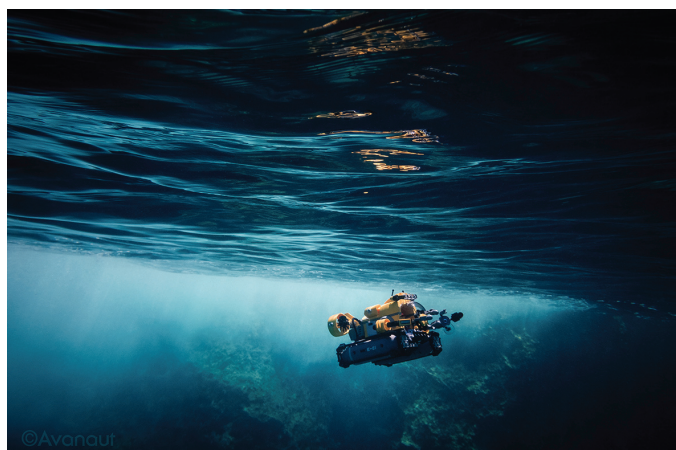
Whatever platform you find them on, you'll also find a truly international community with participants from all over the globe. These LEGO® and toy photographers connect regularly with each other via social media and inspire each other. It's not uncommon for someone to first discover this rapidly expanding community and immediately say, "I'm so glad I found you – I thought I was the only one!"

It was within this vibrant creative community of toy photographers that Stuck In Plastic was born. In January 2014, Boris (_Me2_) and Shelly (xxSJC) decided to start this creative collective called Stuck In Plastic to connect, share, celebrate and generally explore all aspects of this wonderful, colorful, funny, silly world of toy photography. The collective would engage in activities going beyond the digital social media world we live in today – from the small screen to real world art exhibitions over multiple days, toy photography meetups (also known as 'safaris') around the world, and printing actual books.

The name Stuck In Plastic refers in the first place to the magical plastic world which photographers are stuck in, each in their own specific way. But it also contains a friendly salute to other great artists, like Andy Warhol and his soup cans and this other great warm-hearted, old school gentleman called Trey Ratcliff who got stuck in landscapes and other customs.

After running the very first successful series 'Why ?' – a search for the real creative drive of toy photographers stuck in plastic and a reach out to other toy photographers to find their inner drive – Vesa then joined the team in October of 2014.

Most people know Vesa simply by his online handle 'Avanaut'. His toy photography work has primarily centered around the fictional ice planet Hoth which featured in the Star Wars movie 'The Empire Strikes Back'. Ever since his first photos were posted to Flickr in 2009, accompanied by a behind the scenes peek, he's been a leader in the LEGO® photography field. His work has inspired an entirely new generation of LEGO® photographers and resulted in a beautiful collector's book 'Small Scenes from a Big Galaxy'. To say his photography has had a far reaching influence on LEGO® photography in all its iterations would be an understatement.



Avanaut LEGO® Sub 1 by Vesa

The creative collective went on to realize their first fine art exhibition at Seattle's Bryan Ohno Gallery in March 2015 as part of their creative goal to take toy photography beyond the digital screen and onto real walls.

The collective continued to grow with other great toy photographers including Mike (Balakov) and Kristina (kalexanderson).

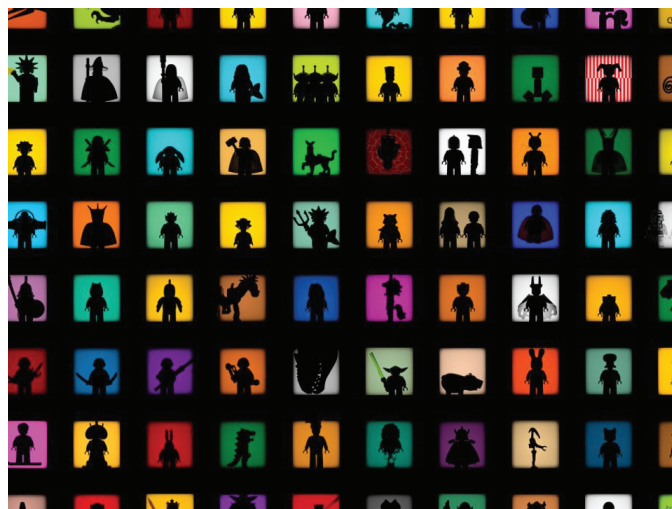
Mike was instrumental in helping to promote LEGO® photography in the early days. In 2008 his series of images recreating iconic photos using LEGO® minifigures caught the eye of both The Telegraph and then The Guardian, which helped LEGO® photography reach a global audience. His image 'Lunch Atop a Skyscraper' is his most recognizable image and remains an icon in LEGO® photography. Mike was also one of the early adopters that began to humanize those ubiquitous stormtroopers from the Star Wars



Mike's latest creative project included LEGO® robots.

universe by photographing them in everyday situations. In this alternative world created by Mike, you can see stormtroopers engaging in everyday activities, such as playing with a cat, waiting for the rain to stop, or folding a paper airplane.

Mike and Vesa are not the only ones to have adopted the stormtrooper as a muse. Kristina embarked on a 365 project (i.e. posting one photo a day for a year on social media – a popular creative challenge amongst toy photographers) in 2011 that featured a family of stormtroopers and this got quite some attention in the press. Her plastic 'family' consisted of a traditional stormtrooper action figure paired with a smaller LEGO® stormtrooper engaging in regular family activities. The amount of emotion that she's able to project with two little pieces of plastic is really what toy photography is all about: the ability to engage with an audience and provoke an emotional response.



100 Shadows Extract by Ballou34

Following another successful fine art exhibition in Seattle in late 2015, the collective was recognized in 2016 by the LEGO® Group as an active contributor to promoting LEGO® toy photography and received the RLFM status (Recognized LEGO® Fan Media). Being recognized by the LEGO® group in this way triggered for the collective the question of creative independency, and the second half of 2016 has been a turbulent one for the collective with some members leaving to explore their own artistic path and other new members joining. So at the beginning of 2017 Stuck In Plastic decided to go acoustic.



Planet Spring by Me2



The Fellowship by Me2



Buzz by Me2



Rey's Speeder by Ballou34



London by Reiterlied



Alien by Me2



The Morning After



To The Lofoten Islands and Back Again by Reiterlied



Panda Love by Ballou34

Explore the artistic journey.
Go slow, and play acoustic.

No more daily posts, and a much slower weekly rhythm and a theme with twelve words that will take the collective a year to complete.

Whenever the members of the collective are not exploring new creative ways of being stuck in plastic through monthly challenges on their blog, they have a pretty packed agenda. This includes creative photography reviews of new LEGO® sets, organizing real life toy photography meetups, and creating new exhibitions around the world to name just a few.

Still a pretty packed agenda for being acoustic.

Stuck In Plastic is a continually evolving creative experiment to take LEGO® toy photography to the next level.

The current active creative crew consists of Boris, Julien (Ballou34), Maelick (Reiterlied) and Stefan (HerrSM), with Mike and Vesa hanging out in the green room.

Join us in our plastic journey at www.stuckinplastic.com or on social media @stuckinplastic.



After Work by HerrSM

Some creative highlights:

January 2014 – Stuck In Plastic was born.

August 2014 – The start of the [Why series](#): a creative exploration of why people take pictures of toys, involving both new and old toy photographers.

December 2014 – The first Significant Twelve Book Exchange.

March 2015 – Fine art exhibition in Bryan Ohno Gallery, Seattle WA, USA

March 2015 – Toy Photography Meetup, Seattle, USA.

July 2015 – [Toy Photography Meetup, Stockholm, Sweden.](#)

December 2015 – Second Significant Twelve Book Exchange

February 2016 – Stuck in Plastic becomes a RLFM

September 2016 – Toy Photography Meetup, Hamburg, Germany.

January 2017 – [Stuck in Plastic goes acoustic.](#)

Upcoming events:

September 2017 – [Toy Photography Meetup, Edinburgh, Scotland](#)

Early 2018 – Paris Exhibition and much more in the pipeline.

#



Do you want to join us in Scotland? It is free and great fun!

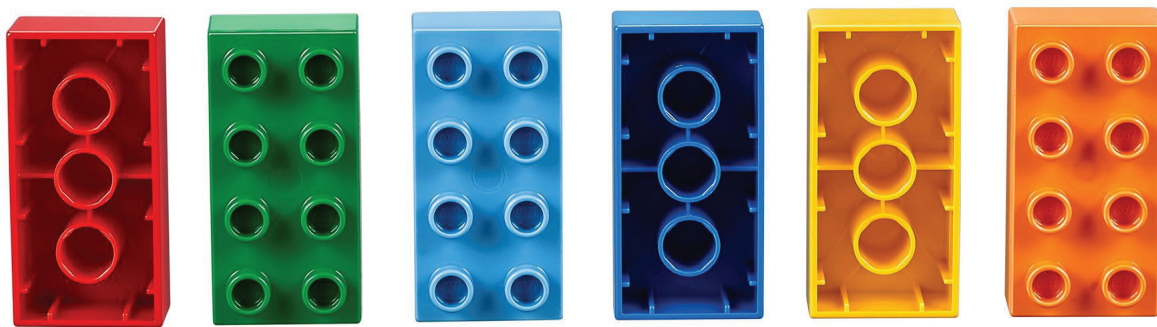


Kimono girl at sunrise by Ballou34

Six Bricks

By Brent Hutcheson

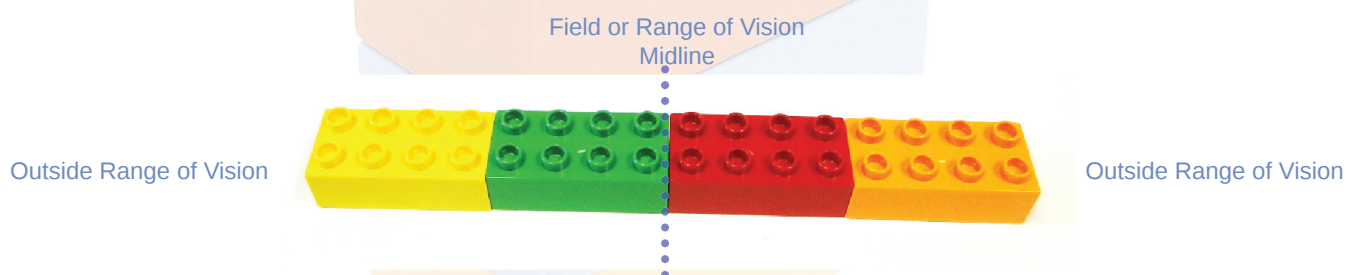
Images by Brent Hutcheson



"Children must master the language of things before they can master the language of words."
Friedrich Froebel

Froebel, the father of the term Kindergarten, understood just how important tactile stimulation and the use of manipulatives (concrete objects that you can see, touch, feel and manipulate) are for the perceptual development of children. Would you believe that with just six DUPLO bricks you can help children refine and develop their perceptual and motor skills?

Many children today, in both affluent and disadvantaged communities, display motor development handicaps. Research has shown that it is critically important for children to play with large manipulatives and to physically move and work with these manipulatives outside their range of vision.
(Range of vision for children is approximately 20–22 cm)



This forces children to move their eyes left and right and to track objects across their midline, thereby invoking bi-lateral integration and opportunities to practice moving objects from concrete to abstract. Many of the toys kids play with today are too small and don't require children to work outside their range of vision. This limits the exercising and movement of the eyes, resulting in control and tracking problems, and can lead to tiredness, which may contribute to restlessness, distractibility, poor concentration and problems with coordination.

The History of Six Bricks

Care for Education is a non-profit organisation and a LEGO® Foundation partner in South Africa. It was started by a group of teachers who wanted to make a difference in the early stages of a child's life. Initially we wanted to assist learners during their Foundation years (ages 5-9) to ensure a better base for lifelong learning. To achieve this, we were looking for a simple, scalable and cost effective solution for schools and learners in South Africa. After experimenting over a five year period with numerous educational manipulatives (mainly LEGO® Educational products) in 25 schools in Atteridgeville (a township outside Pretoria), we started to develop an idea about using only a few bricks.



We felt that perceptual development was poor and children were missing out on crucial developmental areas. We investigated the relationship between concrete manipulation, learning and development. Our focus was to learn how perceptual and motor skills could be developed, what activities and exercises could assist, and how to keep the activities short yet engaging.

Our research indicated that children had to build outside their field of vision within five steps (i.e. five manipulatives) to remain engaged. Five DUPLO bricks in a row end-to-end is the perfect size to do this, however this did not easily provide us with a middle point – and we knew we needed this for children to be able to cross the midline and for bilateral integration exercises (coordinating two sides of the body to perform one action at the same time). The 6th brick solved the problem – and hence the Six Bricks idea was conceptualised.

Choosing the first four colours was easy – they were the four basic LEGO® brick colours (R, G, B, Y). We knew they would be easy to source. We didn't have much choice with regards to other colours – we didn't want to use black or white – and after discussing with colleagues and teachers, we decided to use two similar colours (light blue and dark blue) to assist with language concept development. In the end we added orange as our sixth colour based on the fact that it too was easier to source.

Initially we thought it would be great if we had an activity for each school day of the year (≈ 221 days). Our first book had only 30 activities – our latest has over 300. Whilst working on and developing the new ideas, we continued the research into using manipulatives and ended up adding so much more. We now include activities that promote the development of social and emotional areas, language and mathematics, group games and activities, board games and executive functioning skills.

A group of Danish teachers visiting South Africa late in 2013 were exposed to the Six Bricks concept and went back to Denmark to try it out for themselves. They started a movement that has now spread to many other countries. The content has been translated into 9 languages (including Spanish) and the LEGO® Foundation has set up a special webpage^[1] and a Facebook community^[2] for Six Bricks enthusiasts. This has resulted in many teachers worldwide developing their own activities and sharing them. There is now an abundance of ideas and activities from which everybody can benefit.

The content (activities, templates, resources and videos) is now freely available online^[3].

What do we mean by:

Perceptual development involves the accurate observation, organisation and interpretation of information gained from the senses to the brain. It is very closely linked to motor development.

Visual and auditory perceptual skills are important in the development of the preschool child and to ensure the child learns effectively. Visual perception is the accurate observation, analysis and interpretation of sensory inputs transmitted from the eyes to the brain. Visual perceptual skills are critical to all aspects of learning, reading, writing, and mathematics, as they form the basis for academic achievement.

Fine motor development involves the coordination of the small muscles of the body and usually in conjunction with the eye. Fine motor skills involve strength, dexterity and control.

Why try/use Six Bricks?

Children learn best when they are encouraged to explore, interact, create and play. Six Bricks uses play as a tool for learning by laying the foundation for perceptual, pre-numeracy and pre-literacy skill development. Play is critical for cognitive, social, emotional and physical development. It is during play that core learning skills are developed. Constructive play requires a supportive environment provided by adults and materials that are used to encourage children to think, discover, learn, and problem solve.

Learning is fuelled by curiosity which drives a child to make connections with what has already been learned. Using six bricks every day creates a receptive environment in which the child is confident and positively engages with previously learned knowledge and new concepts. Teacher participation and the use of direct and interactive teaching encourages the development of self-esteem and gives children the confidence to try new things. It will also re-energise the brain; through movement children get blood flow to the neurons to create new neural pathways. This builds new learning while reinforcing and consolidating previous learning.

The quick 5–10 minute activities are designed to be repeated daily and to develop mental readiness in which the child focuses and concentrates for a limited period of time. These short activities are teacher guided, but open ended with plenty of opportunities for children to control and direct their own learning. The power is not in how many activities you can do at one time but rather in the repetition of activities to build self-regulation and working memory.



An exercise for you to try

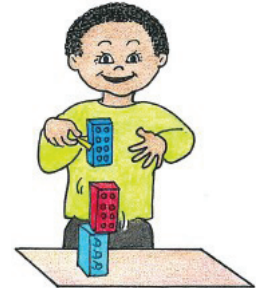
If you have a few DUPLO bricks available then here is one example of an activity from our books (with many variations) that you can now try at home or at school if you are a teacher. This type of activity is also being used with the elderly in Rest Homes with great results.

Each participant will also need a clothes peg for this activity.

Activity: Topsy Towers

Developmental Areas: Physical / Motor; Perceptual; Socio-Emotional; Cognitive: Mathematics; Speech & Language

Skills Development: fine-motor; dominance; planning; problem solving; inhibitory control; expressing feelings; collaboration



- Separate the bricks and lay them out in front of you.
- Turn all the bricks so that they are all facing studs down.
- Use a peg, in your dominant hand, to pick the bricks up and stack them in a short-end to short-end tower.
- Your non-dominant hand should be behind your back.

Some Activity Extensions – start in the same way as above ...

- Repeat the brick stacking exercise, but this time the first brick you place must have the studs facing you and the next brick must have the studs facing away from you. Keep alternating the bricks in this way.
- Do this exercise with your eyes shut. No peeping!

How did you feel when your eyes were shut? Did you manage to balance the bricks?
Was it easier / more difficult? Can you explain?

- Work in groups of three for this next activity idea. You may do this activity with your eyes open, and you may use both hands!
- Build a tower, short end to short end. Each person in the group takes a turn to add a brick.
- See how many bricks you can stack like this in the time that is given to you.

Did any group manage to stack all 18 bricks?

- If you are up for a real challenge, work in groups of four and see if you can stack 24 bricks!

Notes on the activity:

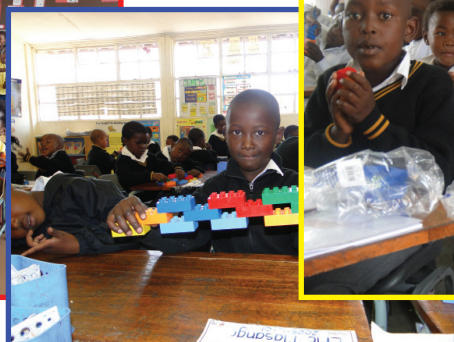
- Squeezing and releasing the peg in the dominant hand to grasp & place the brick activates the arch muscle in the hand – which is a great fine-motor exercise for the holding of a pencil.
- This is also a great exercise in perseverance and patience!
- When children do activities where they are not allowed to peep, they have to exercise inhibitory control – they have to stop themselves from giving in to the impulse to peep. This helps them to develop the self-control they need in later life to achieve their goals.

[1] <http://www.LEGO@foundation.com/en-us/programmes/communities/six-bricks>

[2] <https://www.facebook.com/groups/725765130822588/>

[3] <http://www.careford.co.za>

#





BACK TO BASICS

with 6 BRICKS

sequencing

number concepts

counting

visual discrimination

sensory-motor

figure ground

crossing the midline

comparing

visual memory

estimating

tactile discrimination

classifying

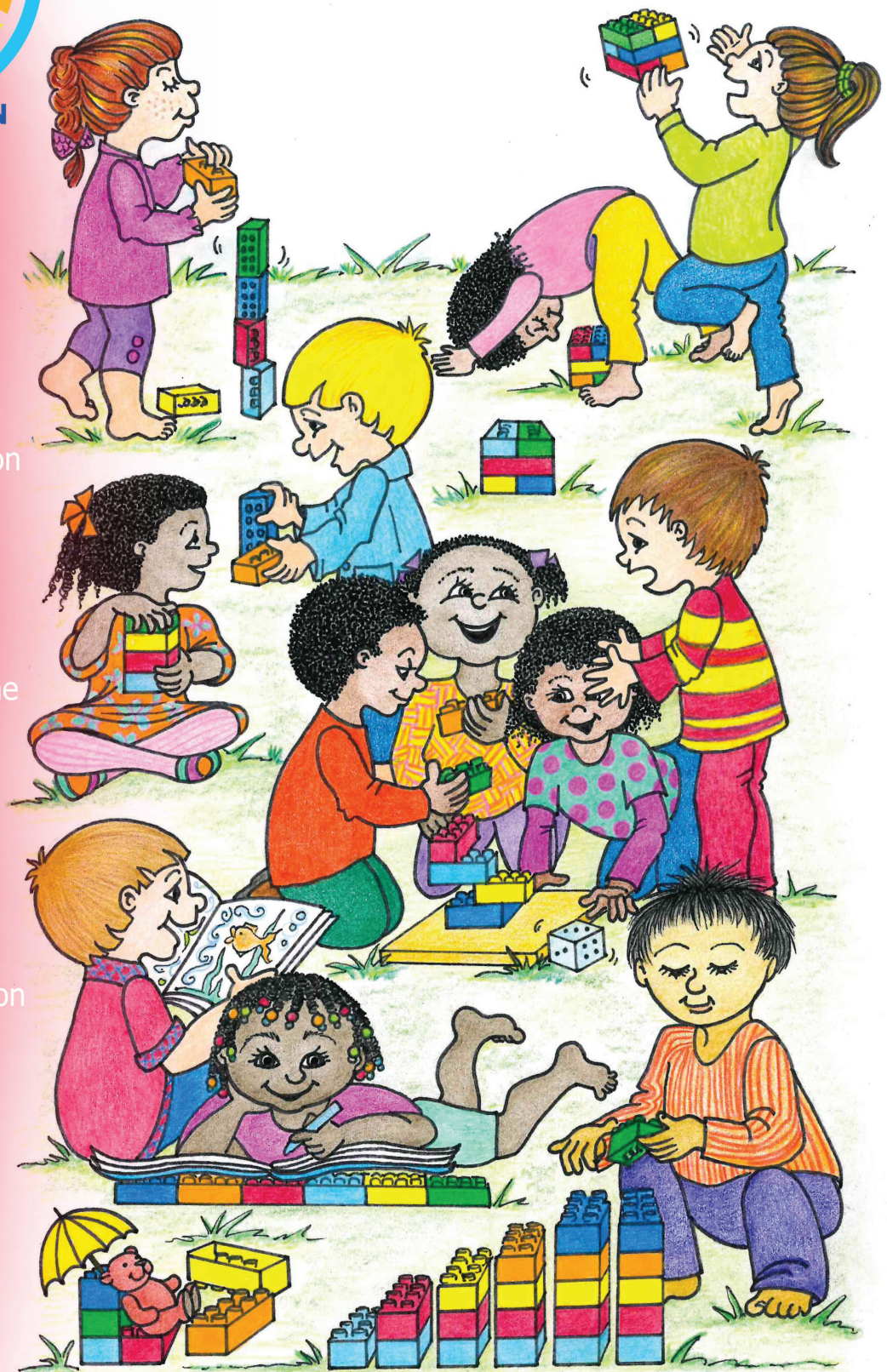
sorting

measuring

motor skills

spatial awareness

bilateral integration



Imagination fuels innovation



Tutorials



“Use the Force” with The Creative Toolbox

By Sanjay Seshan and Arvind Seshan

About the Authors:

Sanjay and Arvind, or the Seshan Brothers, are the founders of EV3Lessons.com, a popular site for learning to program with MINDSTORMS. They enjoy teaching programming and sharing their creations with others.

Introduction:

There is a huge range of capabilities available to Boost users. You can start with the built-in models and programs and then explore further. Boost even lets you learn many advanced programming concepts.



Lesson Objective:

In this lesson, you will use Boost Creative Toolbox to program your robot to stay at a target distance from an obstacle. The robot will back away from the obstacle if it is too close and move forward if the obstacle is further away.

We will be implementing this movement with proportional control, which makes the robot move slower or faster based on how close it is to the target distance. The pseudocode for every proportional control program consists of two stages:

1. Computing an error → how far is the robot from a target?
2. Making a correction → make the robot take an action that is proportional to the error (this is why it is called proportional control). You must multiply the error by a scaling factor to determine the correction.

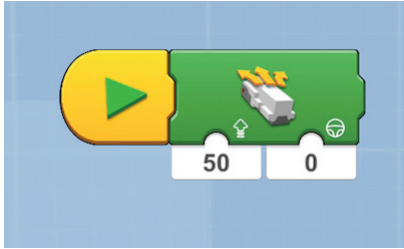

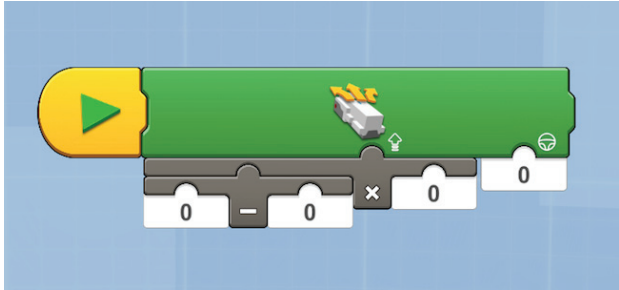
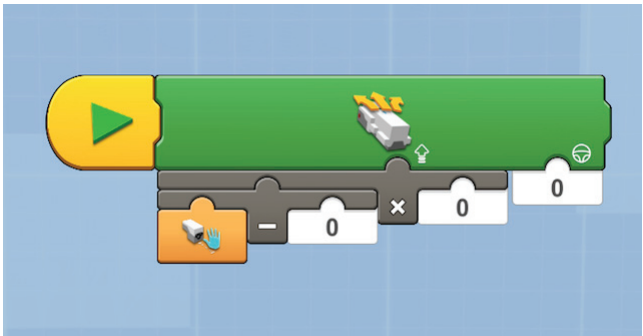

For this task, error will be how far the robot is from the target distance and correction will be moving the robot forward or backward at a particular speed.

Robot Design:

Build any design you like with two wheels or treads such that the robot can move forward and backwards. Be sure to include the Color & Distance Sensor somewhere on the front of your design.



Programming Steps:

<p>Step 1: Drag in a 'Start' Block from the Yellow Palette</p> <p>Step 2: Drag in a 'Motor On' Block from the Green Palette and place near Start Block.</p>	
<p>Step 3: Drag in the 'Multiplication' Block from the White Palette and place as indicated. This will be the part of the code that computes the proportional response to the distance from the target (i.e. the correction).</p>	
<p>Step 4: Drag in the 'Subtraction' Block from the White Palette and place as indicated on the left parameter of the Multiplication Block. This part of the code will compute the distance from the target (i.e. the error)</p>	
<p>Step 5: Drag in the 'Distance Sensor' from the Cyan Palette and place as indicated in the left parameter of the Subtraction Block.</p>	
<p>Step 6: Change all the parameters to 5. The 5 in the Subtraction Block sets the target because the range of the sensor is 0-10 and 5 is halfway in between. The Multiplication Block scales the power so that instead of going 0-5 power, the robot will go 0-25 power. When you take the output from the sensor and subtract 5, the result may be a negative number. Since negative power makes the motor move backwards, the robot will move away from the obstacle.</p> <p>Step 7: Drag in a Loop Block from the Yellow Palette so that the code is repeated again and again forever.</p>	

#

LEGO® Inchworm

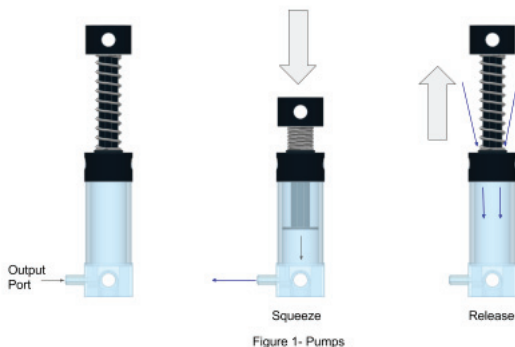
By Kevin Clague

Images by Kevin Clague

Have you ever tried to blow up a balloon? You take a big breath of air, you squeeze your lungs hard, and you force air into the balloon, making it expand. This is pneumatics – using air pressure to make things change shape. Pneumatics is the science of controlling pressurized gas or air.

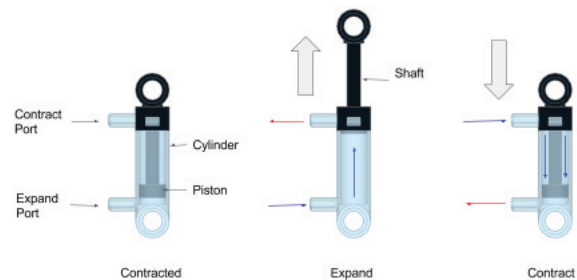
LEGO® uses pneumatics to represent hydraulics in construction machinery like cranes and backhoes. Hydraulics uses fluid pressures and fluids can spill and be messy, while pneumatics uses air pressure, which is mess free. LEGO® pneumatics were first introduced in 1984 and has gone through several versions, the latest of which was introduced in the Mercedes Arocs set, made available in 2016.

So, what pneumatic components does LEGO® make? First let's start with pumps[1] (shown in **Figure 1**). When left alone, a pump is in the shape of the leftmost pump. When you squeeze the pump, pressurized air comes out the port near the bottom of the pump. This is similar to you blowing air into the balloon. When you relax your hand and release the pump, the spring expands the pump, and you are letting the pump breathe in air for the next round of squeezing.



In **Figure 2** we see pneumatic linear actuators. LEGO® fans usually call these cylinders or pistons, but in fact the linear actuators are made of a cylinder (the outside) and a piston (the inside), but for practical reasons I will use 'piston' to mean linear actuator for the rest of this article. There is a shaft attached to the piston that comes out the end of the cylinder. The piston is inside the cylinder, and breaks the inside of the cylinder into two separate parts (think of them kind of like two balloons). In **Figure 2** the piston starts in the contracted state (on the left). The port at the bottom of the cylinders is the expand port, because when you push air into that port it pushes on the piston and makes the piston move away from the expand port, causing the actuator to expand (i.e. get longer, as seen in the middle picture). The port at the top of the cylinders is the contract port, because when you push air into that port it pushes on the piston and makes the piston move

away from the contract port causing the actuator to contract (i.e. get shorter, as seen in the right picture).



In **Figure 2 and 3** I use blue arrows to show air flowing into the pistons, and red arrows to show air flowing out of the pistons.

Another important pneumatic component is a switch (also called a valve) shown in **Figure 3**. At the top, the switch has a handle. When the handle is turned to the left, air coming into the center port goes out the right port of the switch as indicated by the blue arrows. Also, any air coming into the left port comes out of the case around the handle as shown by the red arrows. This gives the air coming out of a piston a way to escape. When the handle of the switch is straight up, the air going into the center port goes nowhere. Also any air going into the left and right ports goes nowhere. The switch is off. When the switch handle is flipped to the right, air going into the center port goes out the left port as indicated by the blue arrows. Any air going into the right port comes out of the case around the handle as shown by the red arrows.

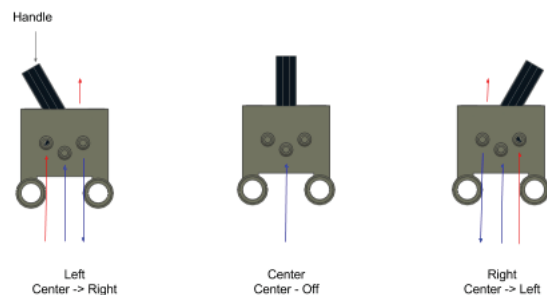


Figure 4 shows the classic LEGO® pneumatic circuit showing the most basic pneumatic components. It contains a pump for making air pressure, a switch for controlling the airflow, a piston for making parts of a LEGO® model move, and hoses to

hook all the pneumatic parts together. In this circuit, you pump the pump, you flip the switch back and forth, and the piston expands and contracts.

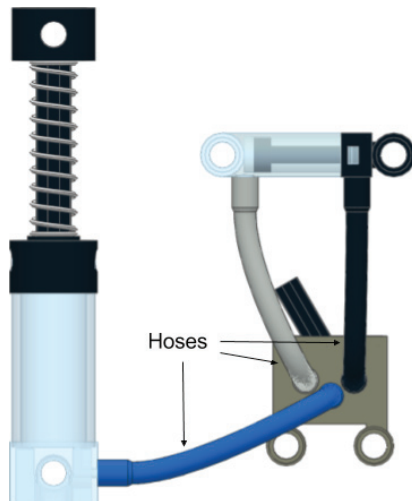


Figure 4 - Classic pneumatic circuit

If you go back in Technic history there have been a number of styles of LEGO® pneumatic parts. Today LEGO® makes two sized pumps – the large one we’ve seen already, and a small one (without a spring) which is meant to be pumped by motors to make air compressors. Currently there are four piston sizes. There is the small one we’ve already seen, and a large one about the size of the larger type of pump. When LEGO® launched the Mercedes Arocs set (42043), it also introduced longer versions of the small diameter and large diameter pistons.

This classic LEGO® circuit is not the end of the story. If you take things one step further and make pistons flip the switches, instead of humans flipping them, you open up a whole new world of pneumatic possibilities. This youtube video by 1nxtmonster[2] shows a two piston, two switch pneumatic engine. The front piston flips a switch that makes the back piston change shape to match the front piston. The back piston flips a switch that makes the front piston change to the opposite shape. Add air pressure and the engine goes through this repeating pattern of expand, expand, contract, contract.

Now we’re going to take the time to learn a little science. Pascal’s Law, named after Blaise Pascal, describes how much force a piston can produce. Here is the relevant formula:

$$\text{Force} = \text{Pressure} \times \text{Area}$$

So when a piston tries to expand, the force available is the area of the piston face closest to the expand port times the pressure of the air pushing on that piston face. When a piston tries to contract, the force available is the area of the piston face closest to the contract port times the pressure of the air pushing on that piston face.

At a given pressure, the larger the area the larger the force, and the smaller the area, the smaller the force.

Notice that the expand face of LEGO® pistons have a larger area than the contract face because of the shaft that goes into the center of the contract face. This means LEGO® pistons have more force to expand than to contract. So, if you start with a contracted piston, and you apply the same pressure to both ports of the piston at the same time, the piston will slowly expand.

This is important because the small piston, shown in the figures so far, does not have enough force to flip a switch like the large pistons shown in the engine video. Next, we’re going to see an engine-like model, but without the crankshaft. The model will need two small pistons working together to flip a switch. I like making models using the small pistons because they expand and contract much faster than the larger pistons used to make the engine. This makes the model more interesting to watch.

We need a mechanical linkage that connects two small pistons to a switch so that when the pistons are expanded the switch is flipped left, and when the pistons are contracted the switch is flipped to the right. This linkage is shown in **Figure 5**. Given there are two pistons per linkage, we need to hook the two expand ports together using hoses and a pneumatic-T. A ‘T’ has 3 ports – we push air into one port and it comes out through the other two. Now both pistons will try to expand at the same time. The contract ports are also hooked together in the same way.

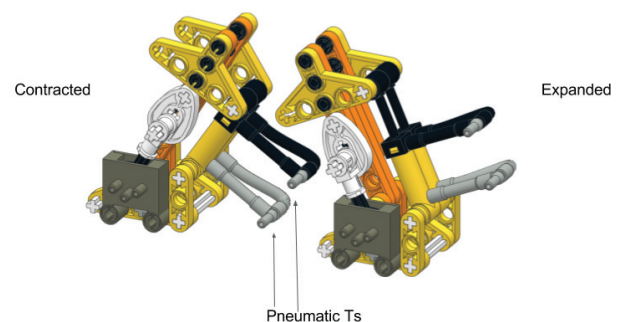


Figure 5 - Piston/switch linkage

Figure 6 shows an engine-like circuit using our small piston/switch linkage. The left linkage’s switch outputs make the right piston change to match the left piston’s shape. The right linkage’s switch outputs make the left piston change to the opposite of the right piston’s shape.

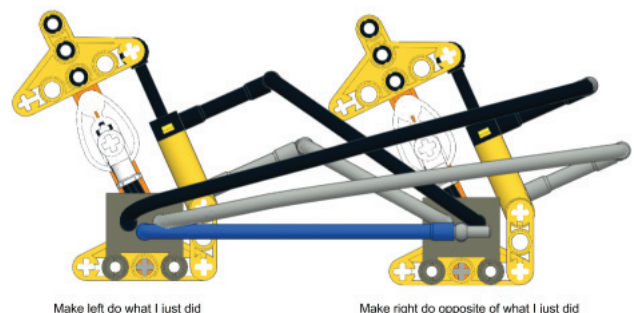


Figure 6 - Timing circuit

Figure 7 shows the four states of the Figure 6 circuit.

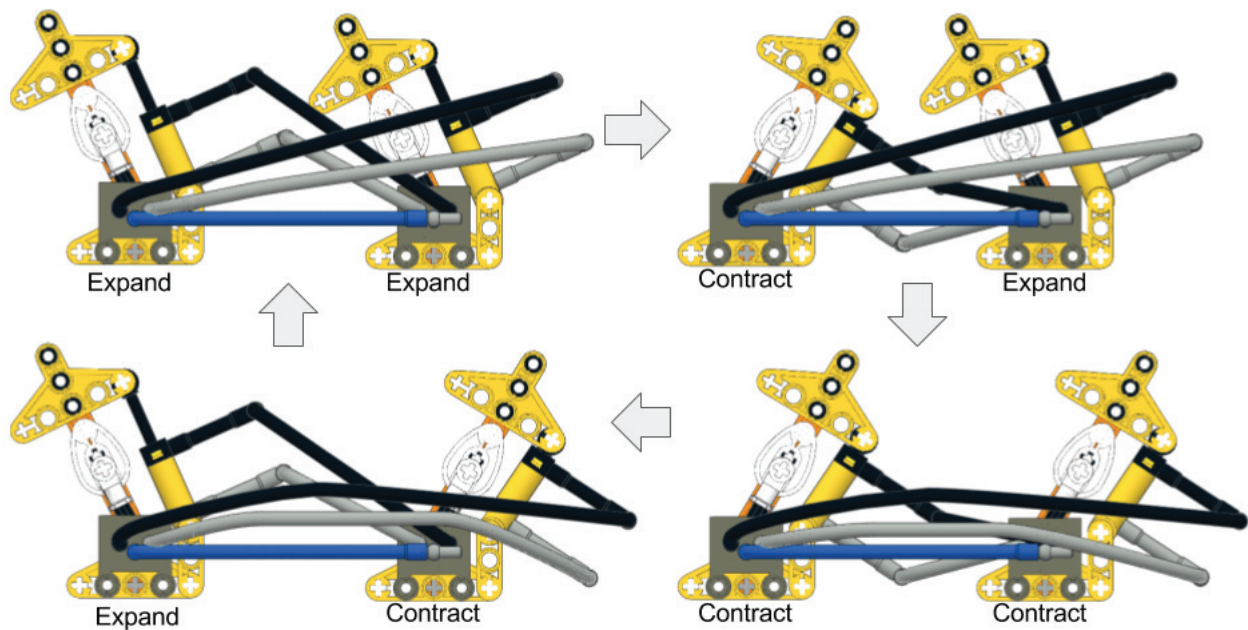


Figure 7 - Four states of engine

If we mechanically hook these two linkages together, we can make what I call an inchworm, as seen in **Figure 8**. The base of the front linkage becomes the top of the back linkage. Also, I added 1x2 rubber links as feet. The inchworm crawls forwards as the linkages go through the four stages shown in Figure 7.

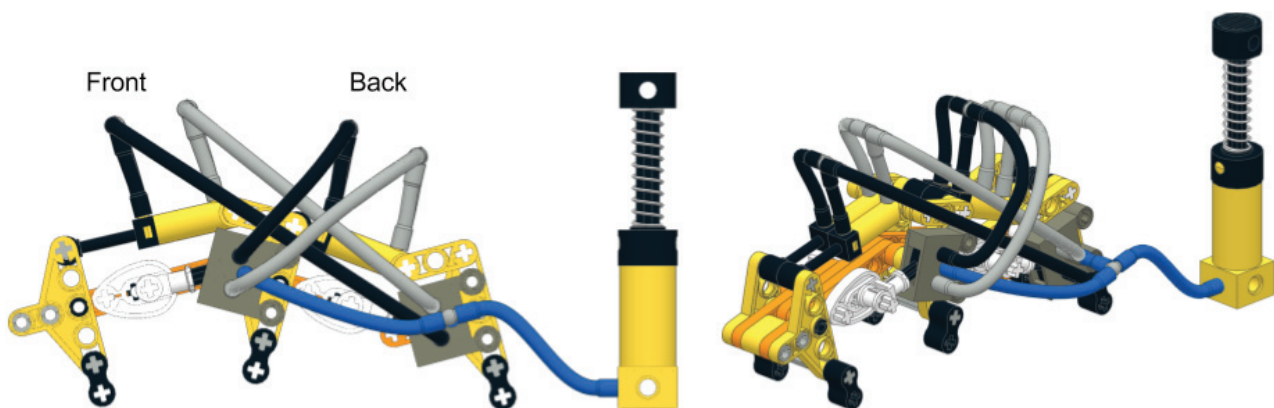


Figure 8 - inchworm

This is my 12th version of an inchworm-like LEGO® pneumatic creature, and it has taken me nearly ten years to figure out how to make one so simple and small. I learned some things about physics along the way. So far, I cannot figure out how to make it any smaller. I could probably take a few parts away, but that would not make the walking mechanism or the pneumatic circuit any simpler.

If you own some LEGO® pneumatic pieces but don't have the small pistons, try making your own linkage mechanism and try to make your own pneumatic engine or inchworm using the pneumatic parts that you have.

There are many different kinds of walkers and crawlers that you can make based on variations of the simple pneumatic engine, including two legged walkers. Using engine designs with three piston groups, you can make four, six and eight legged walkers using techniques outlined in my Pneumatic Sequencing Tutorial in HispaBrick Magazines 13 and 14. Using more complicated circuits you can make engines run backwards or forwards just by flipping switches. There are lots of cool things you can make using LEGO® pneumatics! LEGO® Technic is such a wonderfully inventive product line!

[1] In the newest version of the pneumatics pump the spring has been encapsulated. The illustrations in this article use the previous version for practical purposes.

[2] <https://www.youtube.com/watch?v=IXLnphCnKFU>
#


```

import RPi.GPIO as GPIO
import time

# LED pin number
LED_PIN = 4

# GPIO mode
GPIO.setmode(GPIO.BCM)

# GPIO pin configuration
GPIO.setup(LED_PIN, GPIO.OUT)

def LED_On():
    GPIO.output(LED_PIN, GPIO.HIGH)

def LED_Off():
    GPIO.output(LED_PIN, GPIO.LOW)

def BinaryToDecimal(binary):
    decimal = 0
    for digit in binary:
        decimal = decimal * 2 + int(digit)
    return decimal

def DecimalToBinary(decimal):
    binary = ""
    while decimal > 0:
        binary = str(decimal % 2) + binary
        decimal = decimal // 2
    return binary

def main():
    while True:
        # Get data from Mindstorms
        data = Com.Binary("101100")

        # Convert binary to decimal
        decimal = BinaryToDecimal(data)

        # Print decimal value
        print("Decimal: " + str(decimal))

        # Turn LED on for 1 second
        LED_On()
        time.sleep(1)

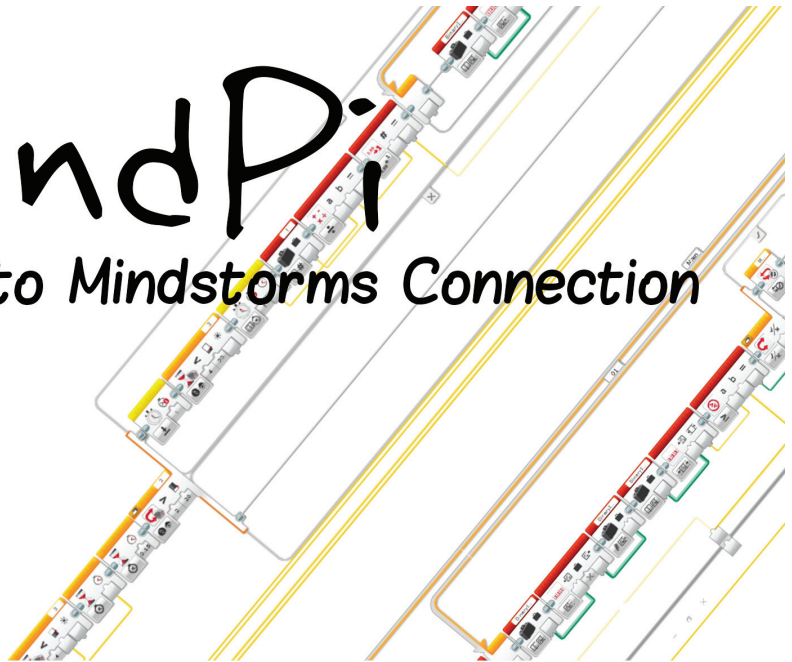
        # Turn LED off for 1 second
        LED_Off()
        time.sleep(1)

if __name__ == '__main__':
    main()

```

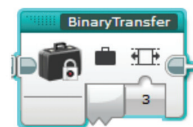
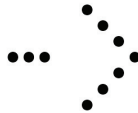
MindPi

Your Raspberry Pi to Mindstorms Connection



By Boston Abrams

Com.Binary("101100")



LEGO® MINDSTORMS is a great tool for easy building and programming, but to get the ease of use that LEGO® Products are known for they need to compromise features, like a web server.

I am sure some of you would say, "BrickPi – What about that...?" Well, BrickPi is another way of being able to control LEGO® MINDSTORMS motors and sensors with a Raspberry Pi (a small computer built for electronics tinkerers and hobbyists) through a board that sits on top of the Raspberry Pi. But after using the BrickPi I thought I could do something different. I wanted to get the LEGO® MINDSTORMS EV3 to communicate with the Raspberry Pi, not a MINDSTORMS Brick replacement as the BrickPi is. Furthermore, another upside of my design is that if you already have an EV3 and a Raspberry Pi – as I do – then it will only cost a few cents.

Well how does this work? With something as humble as an LED.

How it works:

In order to make the EV3 and the Pi communicate with each other they need to be able to exchange information. You can achieve this by connecting a red LED to the Pi: the positive leg needs to be connected to a GPIO pin on the Raspberry Pi and the negative leg to a ground pin. You can then put the LED in a Technic beam and secure it with some other parts in front of the color sensor (Pic to left: The silver pieces are the leads for the LED that would be connected to the Pi) so when the LED flashes, the Mindstorms Color Sensor can read that information! The program that I have written takes the data and sets up the flash pattern, then the MINDSTORMS brick reads that with the color sensor and returns you the data.



As an example, imagine you want to transmit a number of rotations of a motor (a number from 1 to 10). If for example you want to send the number 5, you input to Com.Numeral(), a function that will convert the number to binary and then make the LED Flash in the corresponding pattern. (Quick side note: I chose to use Python because it is preinstalled on the Raspberry Pi and I already have a basic knowledge of how it works!) This flashing can be read by an EV3 Color Sensor controlled by a 'My Block' (what EV3-G, the LEGO® MINDSTORMS Programming language, calls a function) called NumeralTransfer that is waiting for these flashes on the MINDSTORMS EV3 Brick. When the message has reached the length specified by the numerical input to the My Block, it stops recording and converts the binary to a decimal and returns that. In our example this would be 5. That would conclude the transfer of data from one system to another. You can then use this output to turn the motor on for 5 rotations.

This alone may not seem powerful but in conjunction with the strengths of the Raspberry Pi micro computer it can really do amazing things. For instance, it can get information from a website or run a Pygame control station for a MOC. (Pygame is a graphics interface/video game maker for Python.)

As an example, one thing that I have done is make a robot to open chests in the popular cell phone game Clash Royale. You enter some information on a website and it is used to move an arm that presses buttons on the phone screen, thereby opening the in-game chests.

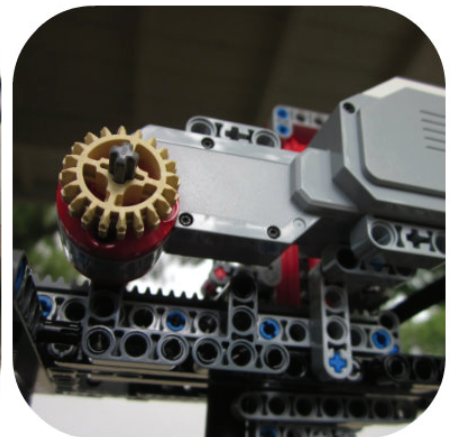
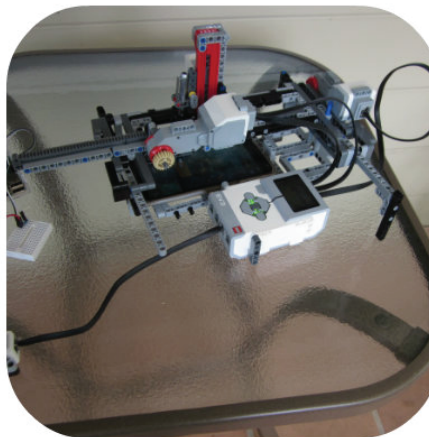
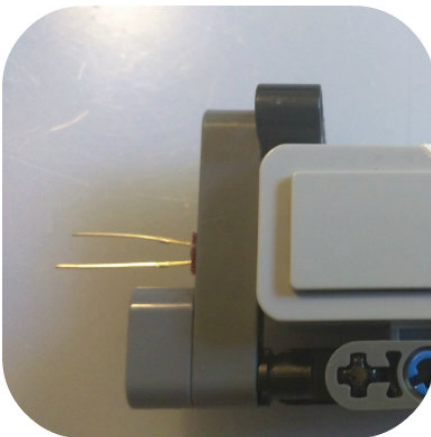
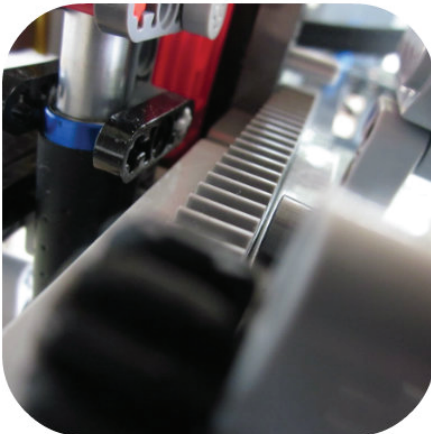
Some other projects that could be built on a similar interface: A web server powered robotic arm, an App for a remote controlled car, or a Pygame powered LEGO® Crane.

Now that MindPi works I still have several goals to improve the project. These include a friendly user interface that accepts letters, increasing communication speed and making the communication go two ways.

For detailed instructions and to try it out for yourself:

<https://github.com/BostonA/MindPi>

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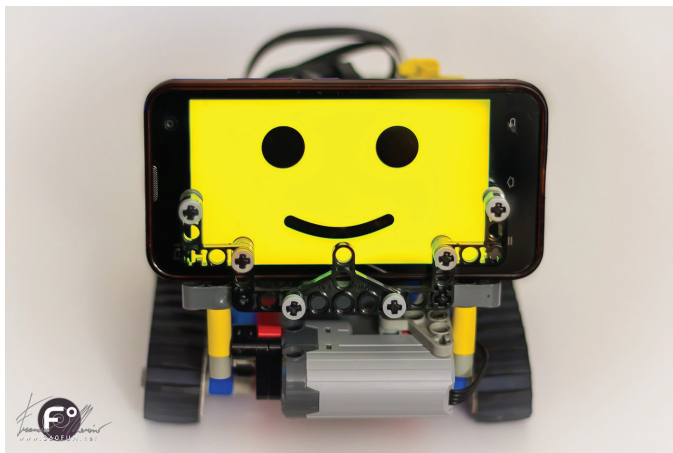


LEGO® (SBRICK) + WEB BLUETOOTH = ROBOTS!

By Francesco Marino

Images by Francesco Marino

What I wanted to pursue with this project was connecting my web knowledge with the physical world in the easiest way possible (without using Arduino or similar) and provide easier access to robotics for everybody. I have been a LEGO® lover since I was a child and I always dreamed of buying the MINDSTORMS set, yet for various reasons I never did. Instead I bought some LEGO® sets with Power Functions elements (battery packs, IR remotes/receivers and motors), which provided an easy way to control my MOCs remotely, though with the limitations of the IR connection. In 2014 a project called SBrick (by Vengit Ltd.) appeared on Kickstarter and it simply blew my mind because it promised exactly what I needed: a Bluetooth RC Receiver compatible with LEGO® motors and any Bluetooth Low Energy device. Google's later release of their Chrome browser with integrated Web Bluetooth API is what gave me the final push in the direction of using web technologies to control LEGO® robots!



BUILDING AN INTERFACE

I wrote two basic libraries; the first being Bluetooth.js [1]. This is designed to help people start playing with Web Bluetooth and perform basic operations like connect, disconnect, read, write and cache services and characteristics. The second library is Sbrick.js [2]. This is the heart of the project, and I've spent a lot of time building it since I had no previous experience with a lot of the technology involved, and I have learned much while developing it. The library depends on Bluetooth.js and can easily be included in any web page, it also supports SBrick Plus and it's able to get data from LEGO® compatible sensors. Both libraries are open-source and are available on GitHub. I then used my favourite WYSIWYG web editor, Tumult Hype[3]. With just an easy drag and drop it is possible to add Bluetooth.js and SBrick.js (in this order) inside Tumult Hype and immediately start sending commands to the SBrick with just few lines of code!

BASIC SBRICK UI CONTROLS

I think the Profile Designer made by the SBrick team is a great tool for basic users – it's really easy to create a customised controller and use it in the SBrick mobile app. At the same time I felt there was a hidden potential waiting to be exploited, so I decided to build similar controls using Tumult Hype, allowing advanced users to play with their SBricks at another level and without having to deal with compilers or tons of code. All these controls work with mouse or touch events, so you can use them from both computers and mobile devices! I used those controls to create two generic joypads and manage the two most common driving situations: car and tank.

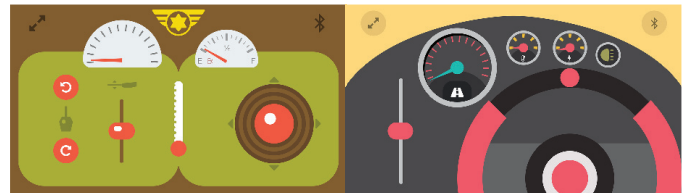
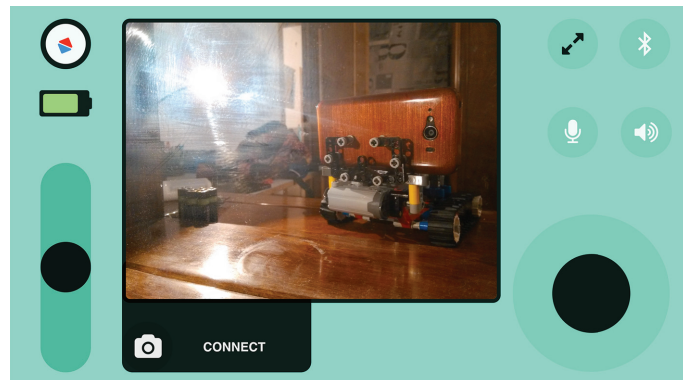


Image caption: A classic controller for your RC vehicle! The UI components are made with free elements found on the web (Font Awesome, The Noun Project...). The battery and the temperature gauges are nicely integrated into the dashboards.

SMART BRICK + SMART PHONE

Since our smartphones are equipped with cameras and microphones, it seemed only logical to me to put my mobile phone on the LEGO® robot and use it to see and hear from my LEGO® creation's point of view. In this case two devices are needed: one is installed inside the robot and the other one is used as a controller.



I used WebRTC to stream audio and video directly inside the SBrick Web Controller, creating a node-to-node connection between the smartphone and the remote control device through the local WiFi. Following this path I also started to play with the JavaScript Device APIs to get access to the mobile

sensors (accelerometer, gyroscope, compass, etc). In this way it is possible to see and hear from the robot's perspective, get sensor data (such as its orientation) and operate from greater distances (through the internet).

PROGRAMMING THE ROBOT

Thanks to the Hype 'Timeline Actions' it is really easy to program actions without writing code, but if you are a web developer the possibilities are endless: you can plan a set of actions or develop complex programs to create robots capable of interacting with their environment using your smart devices!

OVER TO YOU

Well, now it's time for you to have fun with all of this and explore new possibilities!

If you prefer to create autonomous robots and you have more advanced skills be aware that modern mobile devices are powerful enough to manage complex algorithms even if written in JavaScript, so you can use your smartphone camera to track objects, distinguish colors, respond to voice commands and much much more! You can combine the data from the mobile sensors with the data from LEGO® sensors or other Bluetooth devices and make really complex creations! I hope people enjoy this project because I made it to have fun and to help creative people and artists to express themselves using accessible technologies.

MAKING ART

After writing SBrick.js I decided it was time to show how this little JavaScript library could be used in a creative and fun way! At the same time some friends asked me if I was interested in making an art installation for the event 'Absurd! An Exhibition on Human Absurdity'[4], organised by UMANO COLECTIVO in Studio P52 (Barcelona).



THE IDEA

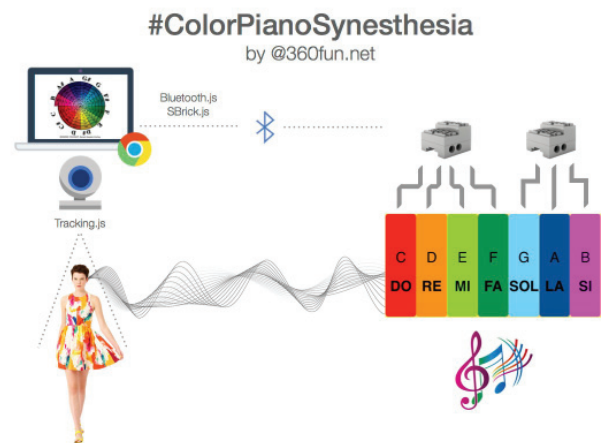
I wanted to create something that would feel magical and that could be played with naturally. In my personal process of learning and exploring possibilities, I felt that it was time to create an interactive interface that didn't require a perfect correlation between action and reaction. I already knew of the existence of Tracking.js (a computer vision algorithm for browser environments) and I was looking for a way to use the color tracking feature. Moreover, I'm not a musician but

generative music got my attention – so these two things were an obvious match. The last piece of the puzzle was already there in the studio: a vintage vertical piano, untuned but perfect for my needs!

THEORY

The relationship between sound and color is nothing new, which is why I didn't spend too much time on it. I instead trust those people who have dedicated their lives to this specific topic. I found some conversion schemes and just applied the color/note relationship in my code.

What I found interesting and what moved me in this direction is the condition of some people called synesthesia – I wondered how it would be to 'listen through the eyes' and that's the main reason why I made the ColorPiano[5]. And of course I thought it would be really cool to play music just by moving in front of a camera!



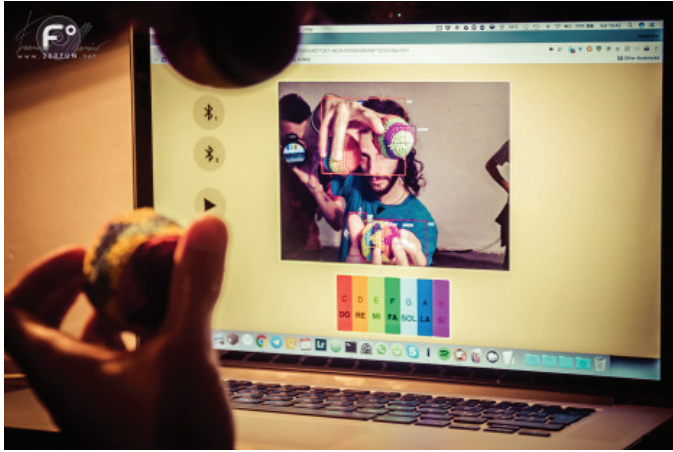
HARDWARE

I used LEGO® Technic to build the robotic fingers, and Power Functions to animate them.

The mechanism of the finger is pretty simple: it attaches to the wood of the piano and uses a wheel as counter balance to bring it back to the original position using gravity. Since the installation had to run for quite a few hours I had to put wires in to prevent them from changing position or falling.

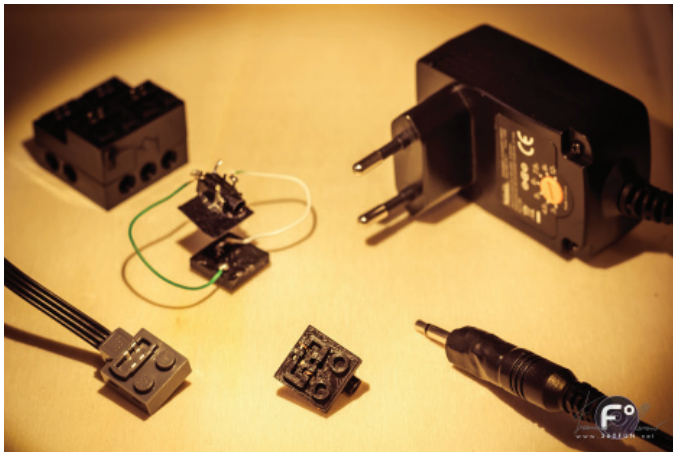


To control the motors I used two SBricks controlled remotely by a MacBook Pro Retina. The color tracking operations are pretty heavy so I decided to avoid using a tablet/phone, though technically the code can run on any compatible device!



A LITTLE LEGO® HACK

For the power supply I couldn't use batteries since the ColorPiano had to run for several hours, so I soldered a mini-jack with a 3D printed LEGO® Power Functions-compatible socket base. In this way I could connect both SBricks to a single DC 9V 1A AC Power Adapter.



SOFTWARE

To build the UI I used my beloved Tumult Hype. I kept it really minimal since I didn't have much time to spend on it. If no SBrick is connected it plays the notes from mp3 files. To manage the color tracking I used Tracking.js [6], assisted by

a function to convert RGB values into HSV, making it easier to define a range for each color.

The entire project relies on Bluetooth.js and SBrick.js to communicate to the SBricks through Web Bluetooth. Everything runs inside Google Chrome without any external dependency.

COLORPIANO LITE

Thanks to a collaboration with Maker Convent and Ro-Botica, the ColorPiano also made an appearance at the Barcelona Maker Faire 2017 in a Lite and more transportable version. In this case I used a MIDI piano – the mechanism is similar but definitely simpler. Thanks to the spring inside the piano keys it was no longer necessary to use a counterweight to return the robotic finger back into place. The motor array is easily detachable and stays in place thanks to the weight of the piano itself.



Official page of sbrick.js and related projects: sbrick.360fun.net
You can support this project on [patreon.com/360fun](https://www.patreon.com/360fun)

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- [1] <https://360fun.github.io/bluetooth.js>
- [2] <https://360fun.github.io/sbrick.js>
- [3] <http://tumult.com/hype>
- [4] <http://umanocolectivo.com/absurd>
- [5] <http://www.360fun.net/colorpiano>
- [6] <https://trackingjs.com>

#





Displaying MOCs For Public Events

By AC Pin

Images by AC Pin

During the last five years I've been more active in bringing out my MOCs for public events, shows and displays. Who wouldn't feel proud when seeing the public's reactions upon viewing their MOCs? Especially when other AFOLs mention that seeing them in real bricks gives them a better perspective and appreciation after years of seeing them only in online pictures.



Theed Hangar with two posters from the BrickJournal magazine displayed in the background at the Morris Museum exhibit

Based on my actual experiences, here are several things to consider when deciding to display your MOCs at public events.

Event Type

The various brick conventions have become very popular around the world. They cater well to the needs of AFOLs, as they're organised and promoted by individuals who are usually AFOLs themselves. These events should be at the top of your list if you're a first-timer, as they often include many other AFOL oriented activities in addition to MOC displays. General toy or train conventions are a mixed bag but may be the next best thing if no brick conventions are available in your area. Be aware that the public attendees at such events may not respond in the same way as those attending brick conventions. Museums, libraries and other institutions offering public exhibits are also opening up their doors to AFOLs, providing further venues where your MOCs can be featured. Charities, bookstores and other smaller personal events typically last only a few hours and may not be as organized as the rest.



Ten MOCs at the Morris Museum exhibit



Seven MOCs at the Philly BrickFest

Fees

Brick and other conventions usually have registration fees which can vary in cost. Museums, libraries and other institutions are typically by invitation only, and rarely require any fees to be paid. And of course smaller personal events for displaying MOCs will not involve fees.

Venue/Location

Conventions typically offer the largest venues, followed by museums and libraries, and then personal events with the smallest space. No matter which venue is chosen, be sure to learn the layout including where your MOCs will be displayed. The proximity of the parking lot to the entrances of the venue will also affect ease of loading and unloading. Safety restrictions may be in place depending on the venue and promoters, so be sure to follow them if they exist. Ask yourself these questions: How far do you have to travel to the venue/location? How will you transport your MOCs? Will you need accommodation for the whole event duration?

Duration, Setup, & Breakdown

Conventions usually last for several days with public access over the weekend. Museums and libraries can last for weeks or even months depending on the nature of the exhibit. Smaller personal events usually run for just a few hours in the day. Consider your setup/breakdown time for your MOCs at any event. You do not want to bring a large scale MOC that needs over an hour of setup/breakdown at an event lasting only a few hours. At bigger venues, you'll have to make sure you arrive and setup your MOCs during the allotted times. It usually pays to be there earlier rather than later, unless you've already arranged and reserved a spot for your MOCs with the event organizers. These venues usually have ample facilities with tables, chairs, stanchions, table cloths, etc. all provided. If your MOCs have any special requirements, such as adjoining tables or power etc., be sure to arrange this in advance with the organizers. Try to be organised and systematic in setting up and breaking down your MOCs so that you can have more time to engage with other AFOLs and event activities.



Akai Shiro Castlegrounds followed by Geonosian Arena



Breakdown of Theed Hangar back into the three containers



Completion of the setup of Theed Hangar

The Public

Generally brick conventions have the most captive audience, and this is where you'll have the greatest opportunities for person-to-person interaction. Be prepared to answer the exact same questions about your MOCs over and over again (i.e. How many pieces? How long did it take to build? How much did you spend? etc). Museum and library exhibits are usually encased and protected, with the public coming and going at their leisure, though I've made it a point to visit the displayed MOCs every now and then. Sometimes side events for visitors to meet the builders/creators may be scheduled depending on what has been agreed upon. For smaller personal events don't expect people to be as knowledgeable as you are with the brick. And avoid leaving your MOCs unattended, as accidents and thefts have been known to happen in the absence of ample protection and security. Get to know the AFOLs at neighbouring displays so you can easily take turns watching each others MOCs when you need a break.



Public access at the Morris Museum exhibit



Public access at the Philly BrickFest with the Grass Plains Battle in the foreground.

Others

Museums and libraries usually require loan agreements to be signed before and after the exhibit. Be prepared to have a short description of your MOCs, cost for insurance purposes, and a one paragraph bio describing yourself as the builder. You'll also be giving the institution rights to make use of any pics taken of your MOCs during the exhibit. Protection and display areas for your MOCs will depend on what the institution can provide. Do not hesitate to ask and negotiate on what's best for your creations.

Summary

Bringing your MOCs to public events can be the most rewarding experience for an AFOL, and will be less stressful when you've been able to plan out in advance by taking into consideration all the above-mentioned factors. Exhibiting at larger venues also means that bigger MOCs can be displayed to more easily grab the public's attention and attract large crowds – like Akai Shiro Castlegrounds (6 x 8 regular baseplates), Theed Hangar (2 x 4 large baseplates), Geonosian Arena (3 x 6 regular baseplates) and Grass Plains Battle (4 x 8 regular baseplates). For this same reason, smaller MOCs are usually grouped together for more visual appeal rather than displaying them individually. If the smaller MOCs are in the same theme and scale as the bigger MOCs, then they can be displayed alongside each other, as Duel Of Fates (1x2 large baseplates) and Queen Amidala Overlooks (1 regular baseplate) go beside Theed Hangar.



The Duel Of Fates and Queen Amidala Overlooks displayed alongside Theed Hangar at NYC PlayFair

Bring out your best MOCs and provide additional information or materials to go with them in the display. Theed Hangar has been featured in the LSW Visual Dictionary, BrickJournal and Blocks magazines with two upsized posters (24"x36") displayed in the background. Queen Amidala Overlooks has one poster displayed together, while Duel of Fates has won a Brickee award that is displayed with it. Lastly, Droids Building Droids has won a Eurobricks contest and displayed together are the fifteen droids prize pack. These add-ons can give your MOCs more wow factor. I've often required anywhere from four to eight tables (30in x 8ft) depending on the venue/location to space out my MOCs. Also, take your time to go over your MOCs after the setup is completed to make sure that everything is complete, stable and clean. Enjoy every moment that your MOCs are in the spotlight and make the most of the opportunity to speak with your fans.

#

På Kloss Hold 2017

By Eduard Petrač



PKH Participants

In April AFOL's from Kockice joined up with more than 70 AFOLs from seven countries for a touch of Norwegian mystique – Brikkelauget's annual event! With more than 1200 events that LUGs organize around the world, we have chosen to visit Trondheim, which is quite high up in the north of Norway, to experience the Norwegian spring. Boy, were we surprised, along with a few Portuguese AFOLs from Comunidade 0937! It seems that spring comes a bit later in Trondheim. Well, it could only get better. And it did!

'På Kloss Hold' was hosted in Charlottenlund High School in Trondheim for the fifth time and the second time in a row. Looking back in history, the first event held at Charlottenlund high school, in 2012, gathered 16 Brikkelauget members and used only a small portion of the premises. The event lasted two days but was only open to the general public for one. The event attracted a little over 400 people in the few hours it was open. It seemed like a good starting point. What has happened in the last few years is that the people of Trondheim have realized what a great event 'På Kloss Hold' is. So the one that we visited this year had a few improvements compared to the 2012 event. It rose to more than 70 AFOLs and guests from Germany, the Netherlands, Denmark, Portugal, Belgium and Croatia, and it covered more than 1000 m2. For the first time the event had two days for the general public, making it more challenging for the organizers and participants to put everything up. Well, it wasn't easy going but we all chipped in and it was ready in time for the opening. The event was visited by more than 5000 people over the two days of public access! Some serious numbers, despite the weather, and a great way to show how the local community can reward your efforts and progress through the years.

The venue was divided into three sections and a variety of themes were represented. The usual City theme is always one of the most beloved by the audience, with trains and lots of things going on just as in real city life. Two big Space dioramas stood out in the entrance section, and between them, you could enjoy some historical LEGO® sets. There was also a chance to see some amazing architecture style MOCs. This year, as a tribute to LEGO® Technic, there was a large display of advanced Technic models that showed the development from the first sets, which are nearly 40 years old, up to the models that can be bought in



'By the river' collaborative display

stores



'By the river' collaborative display

today. Among other interesting areas, one of the most popular for the children was the huge DUPLO playroom. An interesting request for participants at the event was to contribute an 18x16 module, which were all connected to form a very vivid and imaginative display. This year's theme was 'By the river' so everybody created their own vision of riverside fun.

In the off hours of the event we had a chance to enjoy an elaborate workshop with Maico Arts about GBC (Great Ball Contraption) building. His GBC display was also chosen as the most impressive part of the event, with balls going through hundreds of connected modules. We had a chance to hear first-hand experience of how to become a LEGO® designer and how it feels to be one, shared by Markus Rollbühler. With the public choosing the best overall display, participants also had a chance to choose the best displays in several categories. One of the highlights of the event was the Saturday dinner for all participants. While enjoying our meals, we shared experiences from our own events and activities that we organize. Also there was an interesting LEGO® quiz that got us all involved. Of course we were not allowed to use the Internet nor any gadgets to find the answers. During the evening, the organizers awarded the best displays chosen by the participants. The evening ended with an auction. The variety of LEGO® on offer was impressive and the auction was a success. Sunday afternoon was reserved for sightseeing, which was also an upgrade from the previous years. It's nice to see some of the local tourist attractions when travelling, especially when exhibitors don't have to stand by their displays. There was much more time to browse around the event halls and talk to fellow AFOLs or to go sightseeing.

What improvements are we looking forward to seeing next year? The organizers promised us better weather! So we'll have to go back to see how that turns out.

#



New York Buildings by Per Kristian Mork




Brikkelaugets store LEGO®-utstilling
PÅ KLOSS HOLD 2017
 Charlottenlund vgs 1. og 2. april kl. 11-16
 Inngang kr 50 (barn under 2 år gratis) – alle får en LEGO-gave i inngangen




Mange nye og fantastiske kreasjoner
 Store byggebord for egen klossebygging
 Kafeteria med enkel servering
 Yrkesskolevegen 16, Jakobsli



Utstillingen arrangeres av  – nasjonal forening for voksne Lego®-entusiaster

BRICK QUIZ



By Janos Roemer

Since its founding in 2008, the Croatian LUG Kockice has, like many other LUGs around the world, been organizing exhibitions, as well as hosting building competitions and setting up various building games. You may have participated in some of our international building challenges, organized by the LUG itself or in cooperation with other LUGs from neighbouring countries, and you can always check our web page at www.kockice.hr to see if there is an ongoing game.

One season, however, was marked by a game without building. All our building activity was put into exhibitions, and we instead played the Brick Quiz, in which the members of our online forum tackled some puzzles relating to our favourite toy. To mark the cooperation between Kockice and Hispabrick, we invite you to try your hand at these puzzles from the Brick Quiz.

Have fun solving the puzzles and try not to google too much!



What else can you call an AFOL?

- a) BURP
- b) NLF
- c) ALE



The first two-faced minifig was what by profession?

- a) professor
- b) agent
- c) king



Which country has had no LEGO® flag?

- a) Ireland
- b) Iceland
- c) Israel



To what temperature is plastic heated in order for a brick to be produced?

- a) 85°C
- b) 235°C
- c) 850°C



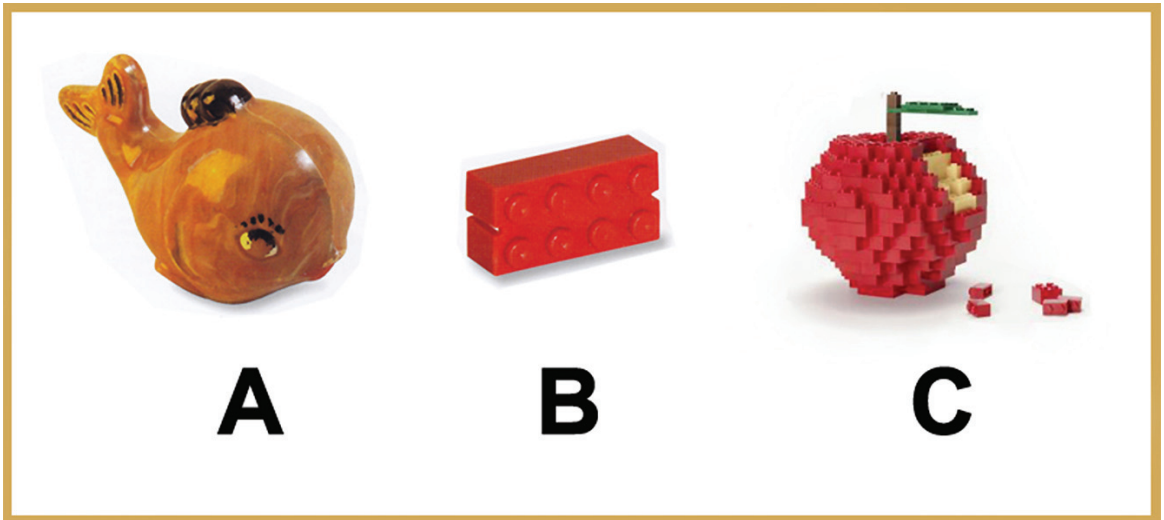
Which motto from his father did Godtfred Kirk Christiansen hang above his worker's heads?

- a) Play well!
- b) Our work is play!
- c) Only the best is good enough!



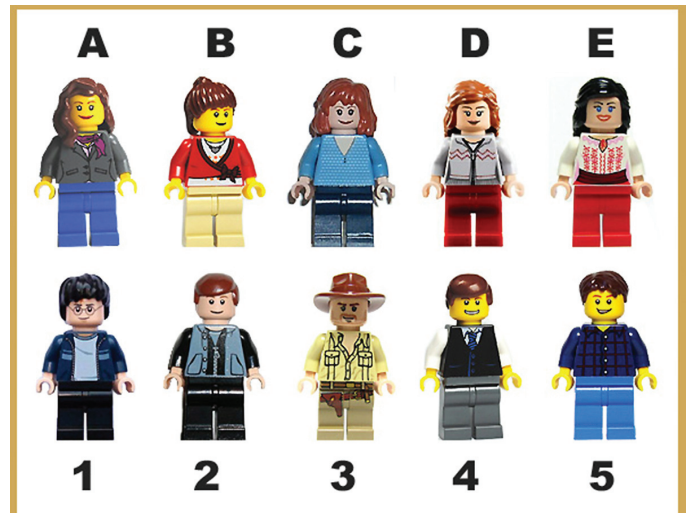
6.

Odd one out: Which one is not LEGO?



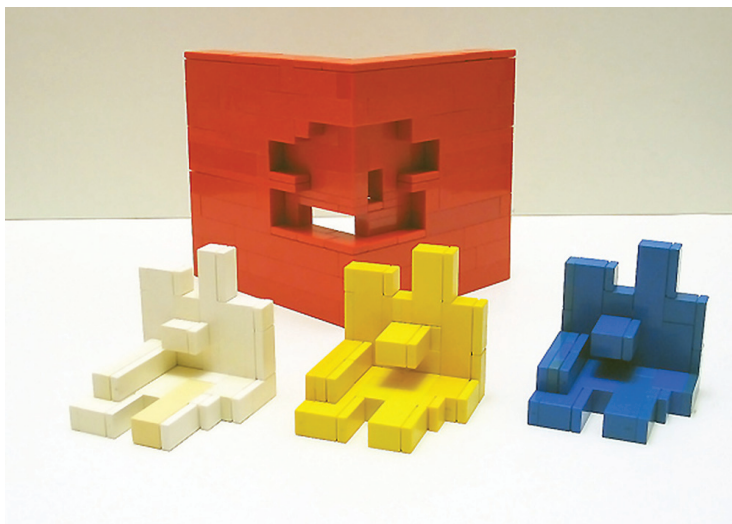
7.

Match the couples! Which minifigurine hangs out with which minifigure?



8.

Which assembly can fill the hole in the wall?

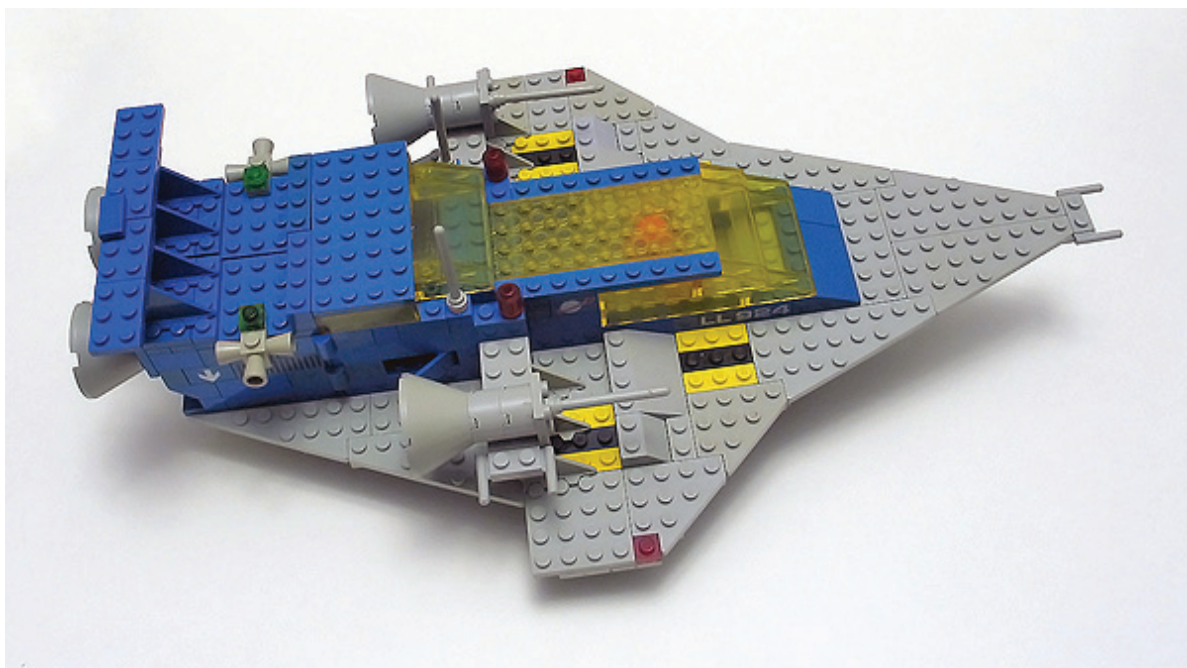




Find the brick! Which brick can make this kind of shadow?



Spot the differences! Find what's wrong with this reconstruction of the famous spacecraft?



Don't pay attention to colour variation caused by age, or the use of two bricks in place of one – we built it with what we had at hand, just as all of us always do – that is part of the fun!



You can find the correct answers on page 77

Minidolls vs. Minifigures

Size matters

By Jasna Miklin

For a long time minifigures were the dominant humanoid species in the LEGO® world, but then came minidolls and everything changed. Well, the minifigs still remain the dominant species, but the dolls are now here to stay as well. Here we'll take a look at what makes them better, worse or just different from minifigs, and how that reflects on their surroundings.

The minidolls are a bit taller than the figures. The head pieces are roughly the same size, the doll's torso is shorter, and its legs are longer. These proportions make the minidolls look more human and win them the first point in this made-up contest.



And how does this height variation affect the minidolls' homes?

Everything that is approximately at waist height will have to be one or two plates higher for minidolls.

The standard doors and windows work with both dolls and figs. The doors are high enough that you can use them in the same way with both, but you will need to position the minidolls'



windows a bit higher, at least if you want the dolls to be able to see through them.

The two brick high cupboards with a plate on top work great with minidolls, so feel free to use them as much as you want.



For minifigs, however, the cupboards are more like a standing desk. To bring them down, you can 'bury' them in the floor. You'll only lower them by one plate this way, but sometimes a plate is all you need.

Moving on to width and depth, which is probably the most noticeable difference between the minis: the dolls are thinner than the figures. But they both have the same arm span, so they will both have the same difficulties getting through doors and windows. No extra-stealthy-burglar points to give out here. Nevertheless, we can look at how closely they can



stand or sit next to and behind each other. We'll only look at square patterns as they are of more use to us than hexagonal ones.

Minifigs stand comfortably next to each other at a distance of two studs. If they are willing to do some awkward hand holding they can shrink it to a one stud gap. With some bending at the waist you could further decrease it to zero, but that may not qualify as standing anymore, so we won't count it.



The minifigs' feet need a space of 1x2 studs to firmly stand on the ground. Does that mean they can stand in line one behind the other with no gap? Of course not. An essential part of a minifig is its head, which is wider than a stud, so the fig next in line will have to back up at least one stud.



The minidolls also need a two stud separation gap for a spacious line-up because of the arm span. However, the narrow shoulders allow for a lot more arm wiggling, resulting in a zero stud gap between dolls standing next to each other.

Since the dolls' feet are a bit larger than one stud, you can only position a doll on every second stud. Not that you could line them up without a gap otherwise – they've got big heads too, not to mention hair pieces.



So, the closest you can pack standing minifigures on a surface is so that every fig takes up a space of 3x2 studs. For standing minidolls the area is smaller: 2x2 studs. Thus, the dolls win their second point. The figs will need to step it up if they want to win this battle. Maybe in the seating department?



The minifigs need a 2x2 space to sit down. But they also need half a stud space on each side for the arms. Therefore, the effective area a fig takes up in a closest packed seating arrangement is 3x2 studs. The minidolls' longer legs occupy a space of 2x3 studs, but the arm bending allows them to be seated right next to each other.

The total area needed for one minidoll is, in this case, 2x3 studs, making this round a tie. Still, both minis get a point: the dolls for the closeness next to each other, and the figs for the compactness after each other.



The most obvious place where you would use the closest packed square seating formation is in vehicles. Just don't forget to factor in the vehicle's walls and the arms of the minis sitting at both ends. With all that in mind, we can look at an example. Three minidolls can squeeze next to each other in an eight stud wide car or bench. The same bench will fit only two minifigs. Similarly, when it comes to the length of a car, you will be able to fit more rows of figures than dolls.



In conclusion, minidolls are taller and thinner than minifigures, and their world reflects that. The windows and desks are a plate or two higher, and the cars are slimmer and longer than the minifigure ones. The minidoll world looks a bit more like the real world, and ultimately that won them this battle of size.

But this is not the only battle to be had. We'll see who wins the next one and who wins the war.

See the video this article is based on here: <https://youtu.be/ZWJo35wmVVc>

Paradisa: Styles and Building Techniques

By Iva Pavlic

Images by Iva Pavlic



Paradisa was a subtheme of LEGO® Town (the major theme today called City) from 1992 to 1997. Paradisa was a place to rest, relax and have fun in a town context that had up to then been mostly police and fire stations, post offices, train stations and suburban houses. With Paradisa the LEGO® town got its own amusement park, country club, lighthouse, horse ranch, playground, bars, cafés, and beaches.

The symbol of Paradisa is the very first thing that comes to mind when thinking of such a place – the palm tree. In larger sets it is an obligatory exterior decoration element, and it is printed on minifigs, walls, the ranch logo, a trailer, and even the ice cream freezer.

green baseplates. The floors, walkways, terraces, building bases and roofs are grey. A shade of pink, slightly lighter and less obtrusive than the one we are used to seeing in Friends sets, was used for details and elements such as stairs, fences, clothes, chairs, umbrellas and doors. Often included in sets were vehicles – a black convertible, an off-roader with a horse trailer, a tilbury, a bicycle, a train, a pedalo, a speedboat, windsurfing boards – all in order for the sets to be appealing to boys. The majority of LEGO® sets are dominated by male minifigs, while girl-oriented sets, such as Friends sets, are dominated by female figs. Unlike these, Paradisa generally had a well-balanced male-to-female ratio.



The sets were designed for increased appeal with girls, but thanks to the design and the attention to detail, boys could play with them just as well. Perhaps this is most evident in the choice of colours. The basic colour used is white on light



New to the line were more elaborate minifigs: female figs had accentuated eyes and red lips, girls had freckles, and male figs had moustaches or sunglasses. Clothes were radically different from those worn by the residents of LEGO® town: bathing suits, shiny jewellery, printed T-shirts, suits, riding and cooking outfits, and each larger set had at least one minifig in

a white T-shirt with the palm tree. They came equipped with caps, riding hats, whips, life jackets, spades, myriad umbrellas, glasses and mugs – everything needed for carefree leisure time.



These sets are also abundant in animals – with the ubiquitous white, black and brown horses, foals and red parrots. There was also a monkey, a dolphin, a cat, and even a crab on a round tile.

Up to 1996, Paradisa sets with more than 50 or so bricks had a baseplate. All of them were light green, while some of them had additional details such as paved walkways or beaches in several colours, from light green to teal to blue.

The building style of the main models was simple, and that of the alternate models featured on the lid and the back of the box was so simple that no instructions were included for them. One might even say that panels and bricks almost the same size are overused in some places. Still, with such simplicity, and all the panels and arches, the result is elegant and aesthetically pleasing.



In 1990, the first set whose atmosphere hinted towards Paradisa was 6376 Breezeway Café. The palm tree and parrots had moved from pirate sets to town, which got a restaurant with a view through large curved panels framed in arches. This building style was continued in Paradisa with more attention to detail: the space between two walls was usually arched, unless it was filled with a large window or a transparent panel. Buildings were no longer cubical spaces, and larger roof surfaces were covered in 8x6 slopes (4515) with a print of pavement or sun shade. The two slopes in the

6419 Rolling Acres Ranch were offset by two studs, and 2x4 curved bricks (6081) were added to the front for a mellow transition between the wall and roof. The third stable had a semi-circular roof supported by an arch. Arches were often used on the entrances of baseplates, as lights or as roof support, such as that of the 6418 Country Club.

With large windows, transparent panels were also frequently used: from the flat one with a curved top (2571) to the large and small quarter circle curved top ones (6002 and 6059). These panels, especially in their transparent versions, were not used in many other sets, and unfortunately were prone to being damaged due to their large surface.

The largest leap outside of the LEGO® town norm and into levels and curviness was in the very beginning of the theme, with 6416 Poolside Paradise – a house composed of a small dome with a parrot habitat at ground level and a more prominent dome with a sitting table on the upper floor. On the left was a spiral staircase and on the right a balcony under which was another staircase. The baseplate itself had several levels and matched the garden well, completing the whole 'poolside paradise' into what most people would picture it to be.

Perhaps the best feature of Paradisa sets is the fact that almost all but the smallest ones had up to five alternate models. Sometimes they were near banal, like in 6410 Cabana Beach – a bit of greenery and a couple on the beach – but larger sets such as the Rolling Acres Ranch and Poolside Paradise had completely rebuilt buildings, even different vehicles. The diversity was helped by many factors, but our favourite is a feature of the Poolside Paradise baseplate: it had two pools that could easily be covered by the plates provided in the set, thanks to the offset edges.



After Paradisa, later LEGO® themes aimed at girls were Belville, Scala and Friends. They are all marked by more vivid colours and less elegant orange, pink, yellow, and purple tones. Belville and Scala came the closest to regular doll houses with very little to be built out of bricks, while Heartlake City is a step back towards LEGO® town, providing a new bakery, the vet's, a school, and even a new airport. Some of these may still be appealing to boys, but the choice of colours and the gender of the figures is at odds with the idea. From an aesthetic point of view, Friends sets lack the elegance of Paradisa, and Emma's and Olivia's houses are plain suburban homes, designed like doll houses. Curved panels and large windows are used again but not to the same effect, thanks to the other colours. One might even conclude that the themes aimed at girls after Paradisa were not worthy heirs when it comes to the idea and building style.

#

Designing Star Wars™ Models

By Oton Ribić

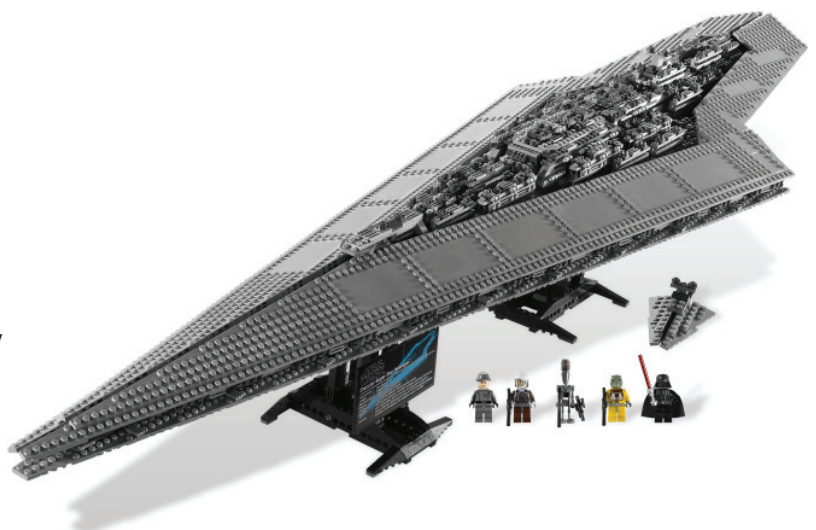
Hardly any 'external' LEGO® theme has been as popular as Star Wars – and its popularity seems to just keep going strong. It has undoubtedly been helped by the official models' meticulous attention to detail visible in the movies, their funny minifigs, and perhaps most of all by the designs capturing that elusive Star Wars aesthetic and touch.

Building something from the existing Star Wars universe does not differ greatly from modelling anything else from basic blueprints, photos or plans. However, those who have attempted to build their own Star Wars creations have certainly faced the challenge of designing not just any science fiction model, but rather one which is distinctively Star Wars-flavoured. To explain what this means, let's go through a couple of official sets and movie concepts, and try to establish some common Star Wars design guidelines.

General ideas

Considering architecture and vehicles - particularly spaceships - sci-fi fans often jokingly say there are just two possibilities: fancy and beautiful at the expense of common sense, and functional at the expense of becoming boring. Star Wars does not distinctively belong to either of those, though it is perhaps closer to the former approach. Or even more precisely, on the large scale it tends to the aesthetic side, while on the detail level it leans towards functionalism.

What does this mean? When viewed from afar, nearly everything in Star Wars is aesthetically pleasing. Few right angles or, even worse, boxy designs. The architecture is based on lots of symmetry, parallel lines, pyramids, slender towers and carefully chosen angles, even when belonging to the antagonists. Likewise, spaceships are often elongated and aerodynamic, featuring large and carefully crafted curves, and always seem to have very powerful propulsion in relation to their overall size. Yet their overall contours remain very simple and pleasing to the eye.



As easily seen in the Star Destroyer, a combination of long, symmetrical lines of the overall model and tiny details within them is a signature of Star Wars

However, when getting down to the level of individual details, Star Wars is almost always bloated with technology. With the exception of a few magnificent exceptions, buildings have lots of ducts, intertwining corridors, openings, antennas, shiny controls, devices roughly mounted on the walls, connectors, and similar fiddly details. Spaceships are even more extreme in that regard:

when their elegant bodies are magnified, they are full of irregular metallic patterns, ducts, mounted devices, pipes, and even remains of rough repair work.



The Sandcrawler is a typical example of using various shades of the overall color to give the impression of wear, rust, etc.

Therefore, should you want to recreate a true Star Wars-flavoured model, perhaps begin with a simple sketch of only a few main lines, probably symmetric, while avoiding right angles as much as possible. This can serve as a basic foundation for the overall design. However, when it gets completed, cover it with lots of small technical parts and patterns, trying not to make it too regular. Do not stray away from the technical stuff, because the art as such is nearly non-existent in the Star Wars world.

Colour schemes

The other important aspect of Star Wars design are its colour palettes. They vary somewhat depending on the faction and time period, but the general approach does not change that much: plenty of grey and heavily washed-out colours do the trick. Antagonists' architecture, particularly the Empire, tends more towards bluish tones (dark bluish gray parts being

perfect) with a good share of black. Smaller details often tend to cooler colours, although the Galactic Empire logo is actually often red.

The Rebel Alliance's craft usually appear in lighter shades of gray, and can handle a slightly larger share of saturated colours, as long as they seem to be independent components like wings, missiles, lasers, etc. But the overall grey scheme, sometimes with details in slightly different grey shades to give impression of age and having been exposed to plenty of heavy use, remains the primary aim.

In addition, Star Wars loves small translucent or backlit details. Craft weapons and blinking wall controls are the most common examples, but actually nearly everything features an abundance of small lights. This may not be as easy to reproduce in LEGO, yet even a few lights should give a craft that Star Warsy look. Note, however, that such lights in buildings are not used for general illumination. To the contrary, the main theme of Star Wars interiors is, more often than not, darkness.



The Millenium Falcon combines many Star Wars design concepts: plenty of detail, tendency towards grey, and carefully crafted main contours of the model

LEGO® Star Wars design in a nutshell

- On the large scale, Star Wars generally tries to be aesthetic – craft somewhat aerodynamic and handsome rather than sensible, and the buildings sturdy and strong. Avoid right angles in all cases.
- At the detail level, there are nearly always many minute patterns, irregular and very techy, spread around all surfaces.
- Star Wars relies mostly on monochrome colours, with some faded colours for details. Vivid colours are used rarely, for faction logos, labels and controls.
- Craft often have patches of varying colours as a result of impromptu repairs, erosion, hard usage, etc.
- The main theme of Star Wars interiors is darkness, with lights used for effect rather than for illumination itself.



Colors are occasionally used, but rather spread discreetly around, rather than as main fuselage color

Take Control of your MINDSTORMS™ bricks!

By Oton Ribić

While there is no doubt that the original LEGO® method of programming MINDSTORMS bricks via 'blocks' is pretty clever and fun, many builders who dive into more complex projects soon find out that this can become impractical, with structures spanning over hundreds or even thousands of modules. In such situations, controlling programmable bricks (pBricks) via a standard programming language is actually easier.

Many solutions have been put forward to achieve this, including custom pBrick firmware and entire programming environments, resulting in interesting and impressive projects. They serve well, receive regular updates, and are a good start. However, for those who like to control things at a more technical level, or at least have some insight into what a communication and 'ordering' system for pBricks looks like, we will reveal some of these in this mini-series of articles. We also assume the user doesn't want to move away from the stock NXT and EV3 firmware.

Keep in mind that for the huge majority of purposes, sticking with the original MINDSTORMS programming environment, or some custom version of it, is perfectly fine; going deeper than this is usually a matter of curiosity, not necessity. Therefore, the following may serve as documentary trivia as well as for practical purposes. If you are interested in the latter, it's worth mentioning right now that this can all be fairly easily implemented in any general purpose language (e.g. it was done by the author in Python, and by another LEGO® fan in C++).

Communication dissection

Let us begin by digging into the methods the pBricks use to communicate with the external world. Although USB can be used, it is actually more common and usually more practical to use Bluetooth, and there are also a few more exotic options. But in all cases, we can begin by stating that all communication happens as a set of digital packages (literally collections of bytes) being sent to and received from these devices, via any of these communication methods. The aim of anything used to control MINDSTORMS systems is to be able to prepare, send, await, receive and interpret the messages containing these packages.

These messages contain all the information that is exchanged by the pBrick and the controlling device – in the most common case, a computer. Sometimes they send some numerical data, in other cases instructions, occasionally asking the recipient to send some data in return (e.g. checking the value of a sensor). And there is also a system of responding to such messages with confirmations that they have been received properly, which is essential if we intend the system to work reliably.



Bluetooth is a practical and simple way to connect computers or other devices to programmable bricks. Older devices usually need a dongle to enable it, but fortunately, it is almost always built-in with newer devices.

NXT vs EV3

The overall concept of exchanging such messages with packages of data applies to both the NXT and the EV3. However, there is one segment where they differ, which will become even more important later when we get into the message construction. Namely, EV3 with its stock firmware allows the controlling device to send instructions directly, regardless of the state the pBrick is in, as long as it is at least turned on, and execute them. Any 'block' we can program in the official software can just be packed up in a message and sent for the EV3 to execute.

On the other hand, the NXT with its stock firmware does not allow that so easily, at least not without using some special tricks which we will not be getting into in these articles as they would just grow into a huge book. But what the NXT allows just fine is running a program aboard itself, programmed in completely regular NXT-G, which receives Bluetooth messages and interprets them in the required way. For example, correctly interpreting a message stating it is an instruction for rotating a motor, then specifying which motor should rotate, then the amount to turn, then the direction, and finally the power. Of course, these messages need to be carefully constructed to be interpreted properly, but that is not really as difficult as it sounds, at least not as long as only a few of the most common commands are used.

But suffice it to say for now that these two MINDSTORMS packages differ in that respect. EV3 is more flexible and allows more direct control, but is also more complex. NXT is a simpler case, but not as powerful. Still, for the most common case of rotating motors by controlled angles, it works just fine.

So much for the introduction – stay tuned for the next article, when we will get down to constructing simple messages and then sending them over to the pBricks.



Slightly older, the NXT is simpler than the EV3 but still allows most functions to be easily controlled with standard firmware.



The EV3 is newer and allows deeper control of the programmable brick, but is more complex too.

LEGO® PIRATES HISTORY

By Kristijan Vuletin

Images by Kristijan Vuletin and LEGO® System A/S

It was the year of the Snake in the Chinese zodiac, the year when Game Boy was introduced, it was the year of the first Simpsons episode, and the first Seinfeld episode... it was 1989. As we watched Tim Burton's Batman in cinemas and listened to the new Cher song 'If I could turn back time', LEGO® introduced something magical that would take us across the ocean, where only a compass and our imagination can take us – they introduced the Pirates theme.

It was a completely new theme, after the Town, Castle and Space themes; a theme that brought us the first LEGO® versions of firearms and the first minifigures with non-standard smiley faces. That same year LEGO® even introduced a comic book called 'The Golden Medallion' to give some background story for the first sets.



THE GOOD, THE BAD, AND THE... ISLANDER?

The pirates were one of the two original opposing sides of the theme – the 'bad guys' we could say – and on the other side we had the Imperial soldiers – the 'good guys'. In 1994 a third 'neutral' side was introduced – the islanders. They have been



known to have both pirate and Imperial prisoners.

Unlike the Imperial soldiers, the pirates did not change over time, but were expanded with new sets added through the years. The Imperials on the other hand experienced some 'radical' changes. The soldiers actually went 'backwards' through time – from 'redcoats' (based on British soldiers) and 'bluecoats' (based on French soldiers) to the Imperial Armada (based on the Spanish Armada).

IMPERIALS THROUGH THE YEARS

Imperial soldiers 1989-1991, and again in 2015

Imperial guards 1992-1996, and again in 2009

Imperial Armada 1996-1997

The initial run of the Pirates theme was from 1989 to 1997.

Wave 1 – 1989.

Wave 2 – 1991.-1993.

Wave 3 – 1996.-1997.

- A couple of re-released sets in 2001 and in 2002. It would take another seven years for LEGO® to resurrect the theme.

Wave 4 – 2009.

Wave 5 – 2015.

- 2011 and 2017 – Pirates of the Caribbean sets – not officially a part of the Pirate theme.

At the very beginning, in 1989, LEGO® gave us what in our humble opinion is one of the greatest pirate ships that would ever sail the brick seas – the 6285 Black Seas Barracuda, and her captain Roger Redbeard! She was the one that set the standard, the one that every other ship is always being compared to. There is something really appealing about her that we cannot really describe. Is it her overall look, the



perfectly balanced combination of colours or just the fact that she is the first pirate ship to be released in the theme? Hard to tell, but it remains a real visual treat to this day.

Other sets that 'stood out' in Wave 1 were 6270 Forbidden Island on the pirate side, and 6276 Eldorado Fortress and 6274 Caribbean Clipper on the Imperial side.

Well, the pirates won the 'best ship' award in 1989, but the Forbidden Island was kind of small for all the treasure and prisoners... or maybe rum? LEGO® knew back then that if you wanted a real blockbuster, you had better bring it in 3D. So, in



the beginning of the second wave, 6273 Rock Island Refuge came with a raised baseplate. Captain Redbeard really knew how to live the good life; he had it all: the Black Sea Barracuda



to conquer the seas and now a perfect little island on which to lock up his prisoners.

In 1992 the Imperials would 'upgrade' their ship and island. The biggest sets in the theme were 6271 Imperial Flagship and 6277 Imperial Trading Post.

In 1993, the Black Seas Barracuda was replaced with the 6286 Skull's Eye Schooner.



Unlike the Barracuda with its four spots for cannons, the Skull's Eye Schooner had eight while the number of cannons remained the same – just four. This ship, however, had a mechanism for rotating the cannons from one side to the other. And speaking of cannons, an interesting detail with the 6268 Renegade Runner pirate ship from 1993 is that the US version of this set had cannons which were non-functional - they couldn't shoot - but they still had nice details, while the European version had no such details yet were fully functional.

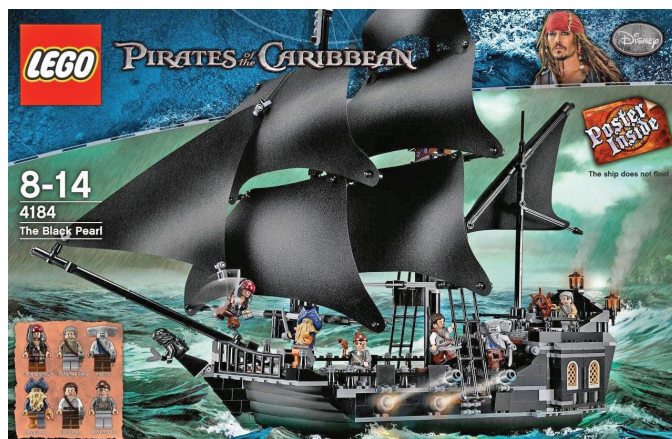
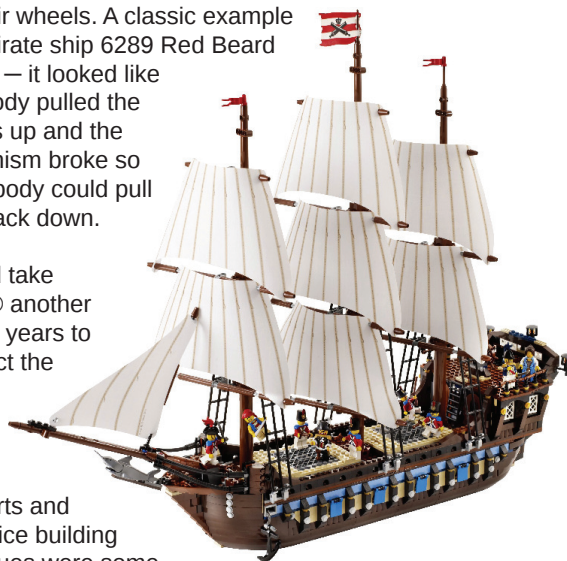
The islanders were introduced in 1994 as a third and 'neutral' side, as mentioned earlier. They were based on the natives of the Pacific islands. The biggest islanders set was 6278 Enchanted Island (the only islanders set to be re-sold again in 2001).



After the amazing opening of the Pirates theme in 1989, and then the excellent first two waves of sets, came the third wave. This was something that most Pirates lovers would like to forget. Everything was downsized, including both ships and islands. The colours in some sets looked like they were chosen randomly and even the cannons lost their wheels. A classic example is the pirate ship 6289 Red Beard Runner – it looked like somebody pulled the curtains up and the mechanism broke so that nobody could pull them back down.

It would take LEGO® another thirteen years to resurrect the Pirates theme. Fresh ideas, new parts and some nice building techniques were some

of the characteristics of wave four. Unlike the previous wave, the colours didn't burn the retinas in your eyes. Looking back at the sets of wave three was like looking at your old pictures, from back when you thought the mullet haircut was a good choice. Some of the best and biggest sets of this wave



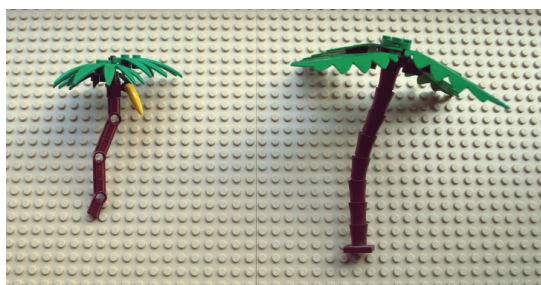


were 6242 Soldiers' Fort, 6241 Loot Island and of course a new pirate ship: 6243 Brickbeard's Bounty. Although 300+ pieces less than the famous Barracuda, it still looked very attractive, and nothing seemed to be 'missing'. And then, like a cherry on top of the pirate cake, came the biggest ship that LEGO® ever produced – the 10210 Imperial Flagship.

But not even this piece of art managed to keep the theme going; it would take another six years to reboot it. Again, luckily for us the movie blockbuster 'Pirates of the Caribbean' came out and we did then get our 'shot' of pirates-themed sets, though under a different name, of course.

The last of the Pirates of the Caribbean ships came just a few months ago – the Silent Mary. Kind of a spooky name if you ask us, or we've just watched too many horror movies. But this name fits the ship perfectly. Spooky lookin', hollow hull, lots of cannons (non-functional unfortunately), and a very nice colour scheme. You could say we liked it at first sight.

But let's get back to the official theme. The year 2015 was when LEGO® brought us the (currently) most recent line-up of the theme. Some familiar faces were on that Brick Bounty ship: a captain that looks a lot like Captain Redbeard, with some familiar enemies on the other side – bluecoats. Back to the roots I guess – trying to win us back with some nostalgia, aren't you LEGO? Well, it worked. We don't know whether it's because of the familiar faces or just that the sets were nice in general.



Why did we say "nice in general"? Well, some things really bothered us. For example, the biggest set of the year (within the Pirates theme, of course) was 70413 The Brick Bounty. Although it looks nice overall, when you look at it closely some things on the ship look like the build is still in progress or some things are simply... missing (only two cannons in the hull but four spots for them, almost no space for a minifig to walk on the sides of the ship, the back of the ship lacking details, etc.).

Other sets have no such defects but there is one detail in them we wish was different – the palm tree. We simply cannot get used to the Technic version.

All in all, not a bad pirate year. You have to be grateful for the fact that the theme lives on, but on the other hand, some things could have been better.

We have seen how pirates have evolved through the years – there have been some ups and downs. We had a magnificent start with a couple of classics, then some years when maybe even LEGO® did not know where to go. LEGO® had some rough years in the late 90s, and you could say that this was reflected in the Pirates theme very much. When LEGO® recovered as a company, the Pirates were back, along with fresh new parts, building techniques and, most importantly, fresh ideas.

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Interview: Cecilie Fritzvold

By Kockice



Cecilie Fritzvold is one of the prominent builders from Brikkelaugset, and one of the not so many FFOLs (Female Fan of LEGO®) around the world. Her creative work stuns many of us in the community so we were eager to talk to her.

Kockice: Cecilie, welcome! First things first, tell us something about yourself.

Cecilie Fritzvold: My name is Cecilie, I am 33 years old and I come from Norway. My LEGO® hobby is funded by my job as a software developer. I am a member of the Norwegian LUG Brikkelaugset, for which I am the ambassador and part of the steering group.

K: What is your earliest recollection of having LEGO® – maybe you remember your first LEGO® set?

CF: I have been a fan of LEGO® for as long as I can remember. My parents bought me a whole lot of DUPLO and later LEGO® sets. One of the first LEGO® sets I can remember owning is the yellow airport (6392) which was released in 1985. Although I suspect I was a little older than two years old when I got it, I'm pretty sure I had this set from a very young age. I later passed through all the stages of LEGO® sets through to Technic and MINDSTORMS, before leaving my LEGO® behind when I moved out and went to university.

K: So the common 'dark age' didn't pass you by? Usually there is a story around the return to LEGO. Can you share yours with us?

CF: My dark age lasted through my days of being a poor student, but I never stopped having this special connection to the brick. Sometimes I would go to a local toy store that used to have some larger LEGO® displays in their window, and just look at those, or grab a catalogue when nobody was watching. But a couple of years after I had gotten my first job, I came across a LEGO® X-wing on one of my toy store escapades. I went back to look at that set several times before I finally caved in and bought it, deciding I could spend my money anyway I wanted to now. But it was still another year after that before I took my second step towards being a true AFOL. For some reason I randomly went online to search for images of a large LEGO® model that had been on display outside the cafeteria at my university the last couple of years of my studies, and which I had admired every time I had passed it to go get lunch. And after looking at those images online for a while, I just decided that this was what I wanted to do. Create cool stuff out of LEGO® bricks. This was in December, so I decided to ask my brother for LEGO® for Christmas that year, and he delivered! After that it quickly went downhill, as it didn't take me long to realize I needed a lot of LEGO® bricks to be able to create all the stuff that my brain was able to think up. That was now a little over seven years ago, and I have created a lot of MOCs in that timeframe.

K: What drives you to create? Looking at your MOCs, the inspiration seems to be flying all over different themes.

CF: My drive to create comes from many sources. For one I really enjoy having this outlet for creativity through LEGO® bricks. Seeing what it is possible to do. But I also really enjoy being able to create things that come from my other interests, such as characters or scenes from video games I enjoy. Which is why I often build stuff that is recognizable from some media source. But I also enjoy creating something original, it all depends on what I'm feeling like at the moment. I also have quite a competitive mind, so I enjoy the thrill and challenges provided by entering MOC contests, and that also drives my creativity quite a lot, being bound by the limitations and rules of a contest and trying to be creative within those limits.

K: Can you describe to us a typical process around a certain idea?

CF: When working on a MOC, I usually have a pretty clear idea in my head for how I want it to look, although the end result might not always end up like that! I usually search for images online for inspiration but I don't do a lot of sketching. Sometimes I might draw a rough sketch or outline if I feel like I need it, but mostly I will just build. I also rarely use digital building tools.

K: Do you aim to inspire or create a sense of wonder with your MOCs?

CF: My process of creating is very much driven by wanting the result to be as accurate and visually pleasing as possible. I don't try especially to be creative with the parts usage, but I try as hard as I can to find the best part possible for a certain purpose, which will often lead to creative parts usage. I am quite the perfectionist, so sometimes it can be hard to accept that I have to compromise on some detail to be able to finish a build. I don't mind using 'illegal' building techniques, but I do consider myself a purist in that I don't want to modify parts or use non-LEGO® elements in my builds, although I can't hide that it has happened a couple of times.

K: To be able to create as much as you do, do you buy lots of LEGO? Would you say your collection is big?

CF: I do buy quite a lot of LEGO, both as sets and loose parts. I have quite a backlog of unsorted LEGO! But I also have a pretty sizeable sorted collection. People who visit me tend to agree that I have a lot of LEGO.

K: With all this variety of themes, do you have a special one, a favourite one?

CF: I don't really have a favourite theme; I'll build anything and everything, from Space to Castle to pop culture and beyond.

K: As previously mentioned, your work is stunning to a lot of people in the Community. That also means bloggers and magazines. How did the blogging start?

CF: I didn't get blogged so much in my first years as an AFOL, but lately, as my building skills have improved, I have had quite a few of my MOCs featured on LEGO® blogs, which I find to be a great honour. One thing I have improved a lot on over the years is my photography and the presentation of my MOCs, and this I think is also part of why I have been blogged more lately. Good presentation sells a MOC much better. I always try to find the best angle to photograph my MOC from, and a background colour that works well with the colours of the MOC.

K: Is there something you don't see yourself building?

CF: There are probably many things I don't like building, but I will never say never on anything. Some things that currently don't interest me in terms of building are GBCs and mosaics. GBCs put a lot of stress on the bricks and I'd much rather build interesting movement into my regular MOCs than to just move balls from A to B. Mosaics I just don't find challenging enough, as most of the ways of creating mosaics come down to using computer software to figure out how to build the image, and then just putting down the parts in a grid. I find it much more interesting to have to experiment with various different parts, and I quickly get bored covering a large area with basic parts. Although I do acknowledge that there are some really good mosaics out there that have taken a lot of work, it's just not a type of work that I think I would personally enjoy.

K: Which MOC of yours would you say was the most challenging one?

CF: Every MOC is challenging in its own way, although some do present challenges greater than others. It's hard to say which has been the most challenging overall, but of my most recent MOCs, I'd say the sushi bar (Itadakimasu!) that I created as my final build for Iron Builder has been the most challenging, mostly due to wanting the sushi conveyer belt to actually move around. This turned out to be a lot harder than I thought it would be, as I needed it to not only work, but also look good, and I had to do it in a very short amount of time. Once I had a prototype working, I thought it would be smooth sailing from there, but for every part I added to try and make it look good, I created a new problem with the movement that I had to solve. The whole build was made in about four evenings worth of work, including a very late night on the last day to get all the last details in place and make the photo and video (I wasn't in bed until 4 a.m.!)

CF: With getting well-deserved appraisal for your MOCs, you've been approached by the community for collaborations. Can you tell us something about that experience?



"Itadakimasu!" built for "Iron Builder"

CF: I have participated in a few collaborations, from the StarCraft collaboration to participating in the Eurobricks collaboration for Brickworld the last 5 years. Those are all coordinated online as the different contributors live around the world. Of course, this is a challenge, as we have to make sure everything comes together on site, but it all comes down to defining standards for scale and connections that we can all use to make sure everything will fit together.



StarCraft Group Project

K: Recently, you were chosen for the Iron Builder competition, a month long head-to-head competition between two builders. Just reading about it sounds stressful. How was it from your point of view, as a contestant?

CF: Participating in Iron Builder was a very thrilling but also exhausting experience. Having to be creative and build at a high pace every day puts quite a strain on the brain, and sleeping was not in abundance during that month! The first week or so, however, it was not much of a problem, as I had a lot of adrenaline driving me, but as the contest progressed, it became harder to stay motivated and keep going. I wasn't lacking in ideas, but I was at one point lacking in ideas for builds that really interested me, and that hurts the motivation and quality of the builds. I also had to push my limits in terms of what I thought I could build, and I had several creations during that month which were far outside my comfort zone. But in a way, it's all part of the fun, and I am happy to have been able to participate in this. It has probably been my biggest challenge as a builder yet!

K: Taking into consideration your previously mentioned trips to Chicago, you can be found on many international gatherings of AFOLs. Did you sometimes stop and think you could use that money to get more LEGO? And do you have a favourite event?

CF: I enjoy travelling to events around the world, as this has enabled me to meet many people I otherwise would have only known online, and also make a lot of new friends, in fact some of my best friends. It's also interesting to see how events are being done around the world, and to bring some of those experiences back with me to my own LUG. I would never consider dropping events so I could buy more LEGO, and frankly, I think it's wise of me not to buy more LEGO® than I already do anyway, as I am running out of space! My favourite event is probably Brickworld in Chicago, mostly because of all the people I have gotten to know there and who I enjoy hanging out with very much, but also because it's a great event for AFOLs. It's quite a long trip to make from Norway though! But it has been well worth it to me.

K: Listening to you, it would seem that everything goes as smooth as you plan. Is that actually the case? Or do you sometimes find yourself 'overly' challenged or limited?

CF: I regularly meet challenges I think I can't overcome. Sometimes I just need a good night's sleep or to think about something else for a while to get past the hurdle and figure it out, and other times I will end up giving up for quite a while before being able to come back to it and figure it out.

K: So maybe new elements would be helpful?

CF: As an AFOL there are always new parts I'd like to see, or parts I'd like in more colors, but if the part you want doesn't exist, there's usually another way the problem can be solved!

K: Any unfinished projects?

CF: I do have some half-finished builds lying around that may or may not ever be completed. The limitations sometimes come from a lack of parts in the colors I need, but most often they come from my own negative thinking that I can't solve something, so I just need to come back to it with a more positive mindset another day.

K: Have you considered 'getting out' of the hobby part with LEGO? There are a few MOCs you've created for your family and friends. Maybe in the near future we might see your commissioned work?

CF: I have built gifts for some of my closest family members a few times, to very positive responses. But I wouldn't gift something built out of LEGO® to someone I didn't know would appreciate it. I have also built gifts for some AFOL friends. But I don't see myself making a living out of LEGO. It is a hobby and something I use to unwind from my job and any other stresses in my life, and I'd like to keep it that way.

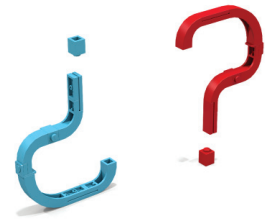
K: To wrap things up, maybe you have some tips for all of us out there in the Community?

CF: The most important thing for improving one's building skills is to keep building and not be discouraged by what other people are building. And presentation is important, so think about how you want to present your MOC while you build it, and don't let the photos be an afterthought.

#

BRICK QUIZ

– ANSWERS



1.

c) *ALE*

AFOL stands for Adult Fan Of LEGO®, and ALE for Adult LEGO® Enthusiast. An AFOL therefore can never be a BURP (Big Ugly Rock Piece), nor an NLF (Non-LEGO® Friend).

2.

a) *professor*

Professor Quirinus Quirell from Harry Potter was made into a minifig in 2001. He was the first minifig to feature one face on one side of his head and another on the other side, corresponding to his role in the wizard saga.



3.

c) *Israel*

The Irish flag was featured in 939, and the Icelandic flag in 940.

4.

235 °C

Cooling takes 10-15 seconds.

5.

c) *Only the best is good enough!*

LEGO® is an acronym of Danish leg godt, meaning play well, but the motto used by the LEGO® Group founder Ole Kirk Christiansen is det bedste er ikke for godt.

His son liked it so much that he hung it onto the factory wall for everyone to be reminded of what LEGO® toys are meant to be.





C - apple

The whale (A) is a rattle, one of the first plastic toys produced by LEGO. The brick (B) is an Automatic Binding Brick from 1949, renamed into LEGO® Mursten (LEGO® Brick) in 1953. The apple (C) is built out of plastic bricks by another manufacturer.

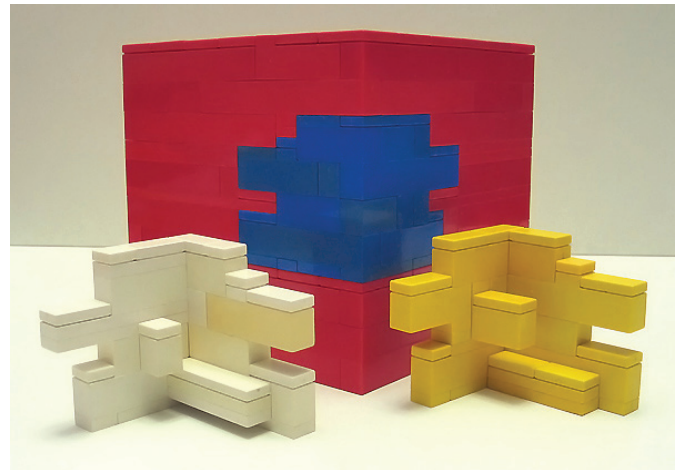
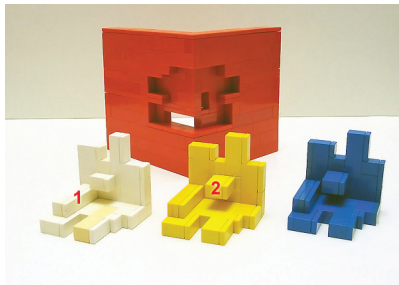


A5 – cashier and truck driver from 7848 Toys"R"Us City Truck
 B4 – passengers from 7937 Train Station
 C2 – Mary Jane Watson and Peter Parker from 4856 Doc Ock's Hideout
 D1 – Hermione Granger and Harry Potter from 10217 Diagon Alley
 E3 – Marion Ravenwood and Indiana Jones from 7195 Ambush in Cairo



C - blue

The white assembly has the step (1) one plate too high, while the yellow assembly has the bump (2) equally off.



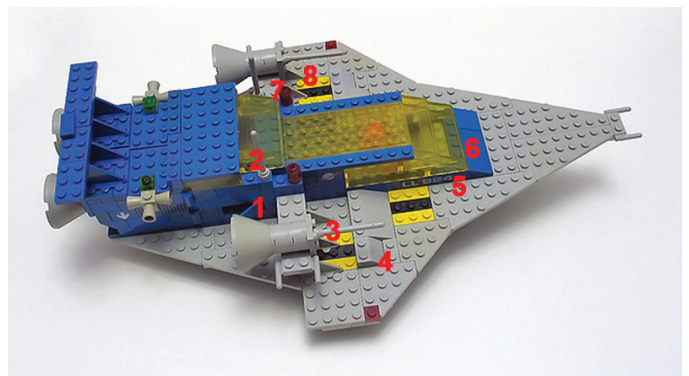
614 Plate, Round 1 x 1 with Towball



Eight mistakes

This is an attempt at reconstructing the 479/928 spacecraft, with eight mistakes!

1. Hatch door colour.
2. Antenna position.
3. Engine tip.
4. Slope angle.
5. 'License plate'.
6. Logo missing.
7. Round brick with hole.
8. Engine position.



Exhibition of LEGO® constructions at the XV Collectors Fair of Mungia

By A. Bellón (Legotron)

Pictures by A. Bellón (Legotron)

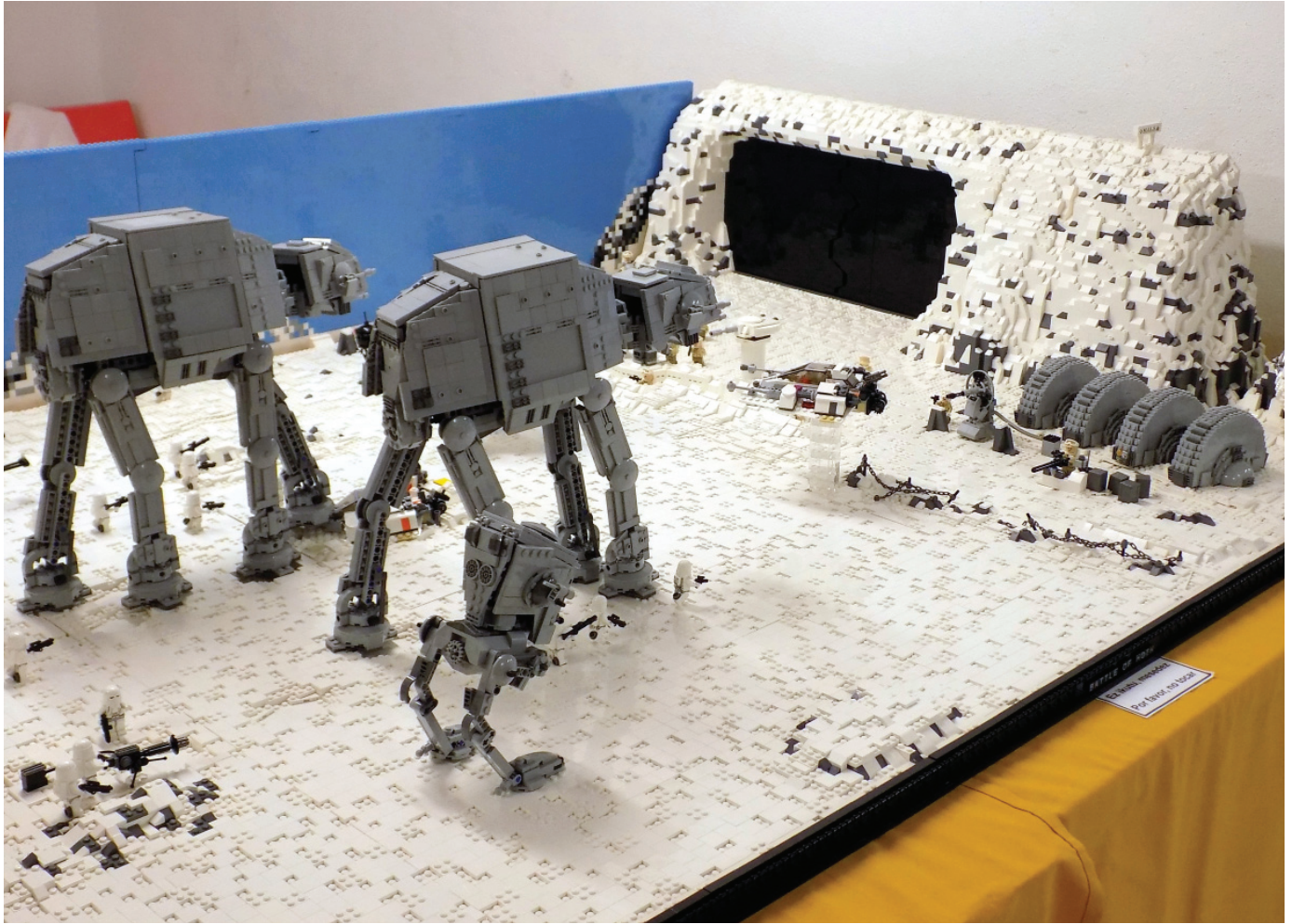
On April 22 and 23 the XV edition of the Collectors Fair took place in Mungia, Vizcaya (Spain), and HispaBrick Magazine once again participated in the fair.

As in previous years, the fair was organised by the association of collectors Bitxikiak (www.bitxikiak.org), and we would like to thank them very much for the marvelous way in which we have been treated and the kind way in which we were received.

This year there were fewer participants as the fair took place later in the season – the fair coincides with the Easter week – so there were fewer MOCs and dioramas on display. Even so, thanks to the efforts made by those participating, the event was still a success. The undisputed stars of the exhibition were the Technic vehicles and the GBC, which had a constant flow of admirers. There were also dioramas in the themes of City, Western, Winter and Star Wars.

As in previous editions, some of the more veteran exhibitors surprised us with creations like the scale model of the Magdalena Palace (<https://palaciomagdalena.com/es/galeria-palacio/>), which dazzled us with its faithful representation of the royal edifice and the care with which every detail was represented.







As a conclusion to the exhibition, we were visited by troops from the Galactic Empire. Their presence encouraged us to participate in the fair again next year.

#



RLFM Days 2017

By Jetro de Château

Images by lluisgib, Jetro de Château and RLFM



For the second year in a row, LEGO® has organised the LEGO® Fan Media Days, and HispaBrick Magazine was one of the RLMF that attended.

Purpose and scope

The LEGO® Fan Media Days are organised by the LEGO® Community Engagement department, and specifically by Kim E. Thomsen, who is the Community Manager for Global LEGO® Fan Media. You may remember from our report from last year that the Fan Media Days served to do a considerable number of interviews with different departments inside the LEGO® Company. While this is an important reason for organising the Fan Media Days, it certainly isn't the only one, nor the most important one. As Kim E. Thomsen explained in the run-up to the event, it is a lot easier and much more feasible to get different departments inside LEGO® to take a day out of their calendar and dedicate it to talking to different RLFM than to get the RLFM individual interview opportunities along the year. However, the Fan Media Days are primarily a networking event.

Not sure what to make of that? To be perfectly honest, I wasn't entirely certain either before I went to the event, so let me tell you how it went and you'll soon see what I mean.

The (un)official start

The Fan Media days ran from Wednesday May 31 to Friday June 2nd, but since the program for the Wednesday started at 9 AM, we travelled to Billund the day before. After checking into our lodgings, we had a first taste of what the following days were going to be about over dinner at a local restaurant. Representatives from half a dozen RLFM gathered at the same place and we had some interesting conversations.



Presentation of HispaBrick Magazine what their plans for the future are.

The event was truly international. 20 different RLFMs were represented and some came from such faraway places (from Billund) as South Korea, Australia or Chile. For some (including me) it was also their first visit to Billund, making the whole experience even more memorable.

After hearing from about half the RLFM we had a short break and rearranged the tables we were using into a more informal configuration. We were expecting a visitor who had asked for an informal setting (and no sound recordings): the (then) CEO of LEGO® Bali Padda.



After that we were given a short presentation about the LEGO® House by Stuart Harris (Senior Experience Manager) and Jesper Vilstrup (General Manager), which included the first images of the three dinosaurs – one in each system (DUPLO, “System” and Technic) – that will be on display in the masterpiece gallery, followed by a tour of the facility. We were the first group to be able to visit the house without hard hats and other protective elements and although there were still a lot of empty spaces we got a good impression of what the finished LEGO® House will look and feel like.



To finish off the day, we had dinner at a local restaurant and were promised a surprise unveiling at the end of it. When we spotted several LEGO® Ideas employees in the restaurant as well as Robert (aka Robenanne) it became obvious we would be the first to see the Official version of the LEGO® Ideas Old Fishing Store. When the time arrived, we all lined up in a semi-circle, camera's at the ready, but in the final moment the excitement got the better of several RLFM representatives who started diving in front of one another to get the first and "best" picture of the model. Later on we had a chance to examine the model in detail and see how much of the original design made it through the LEGO® (re)design process.



The Interviews

Day 2 started in front of the LEGO® Idea House where the interviews with different LEGO® themes would take place. The LEGO® Idea House is normally reserved for LEGO® employees to get inspiration, visiting the LEGO® timeline exhibition and the famous vault. It was a day of frantic activity and much nostalgia. If you want to get a feel of the vault, check out the video Beyond the Brick posted about "memory lane" and you may even find a few RLFM ambassadors in it.

<https://youtu.be/EgFvzpB6BsQ>



Our editor Jetro during one interview



Our editor Lluís at the Vault with his first set

Of course, we will publish all the information we gathered in the interview in this magazine and you can already find a good selection of articles in the current issue.

It is hard to pinpoint any special moment in the day, as it was a succession of exciting moments. If I had to pick one (or maybe two) highlights, those would be the visit to the vault and a surprise appearance: the LEGO® Idea Studio – more about that in the next issue!

The evening program included a visit to the main offices – the perfect picture opportunity in front of the amazing LEGO® logo made with minifigures – and a traditional Danish dinner during which we had plenty of opportunity to network with other RLFM representatives.

LEGOLAND Billund

The third day of the Fan Media days started off in LEGOLAND Billund with a nice group photo, followed by a short guided tour and some time to soak up the local atmosphere. It was a short but intense visit, because after lunch we had to do some last minute shopping, and then back at the LEGO® House to finish the RLFM presentations!

We finished the day with dinner in the Hotel LEGOLAND with most of the LCE team. Of course it didn't all end there, but some things will simply have to stay between friends :)
#



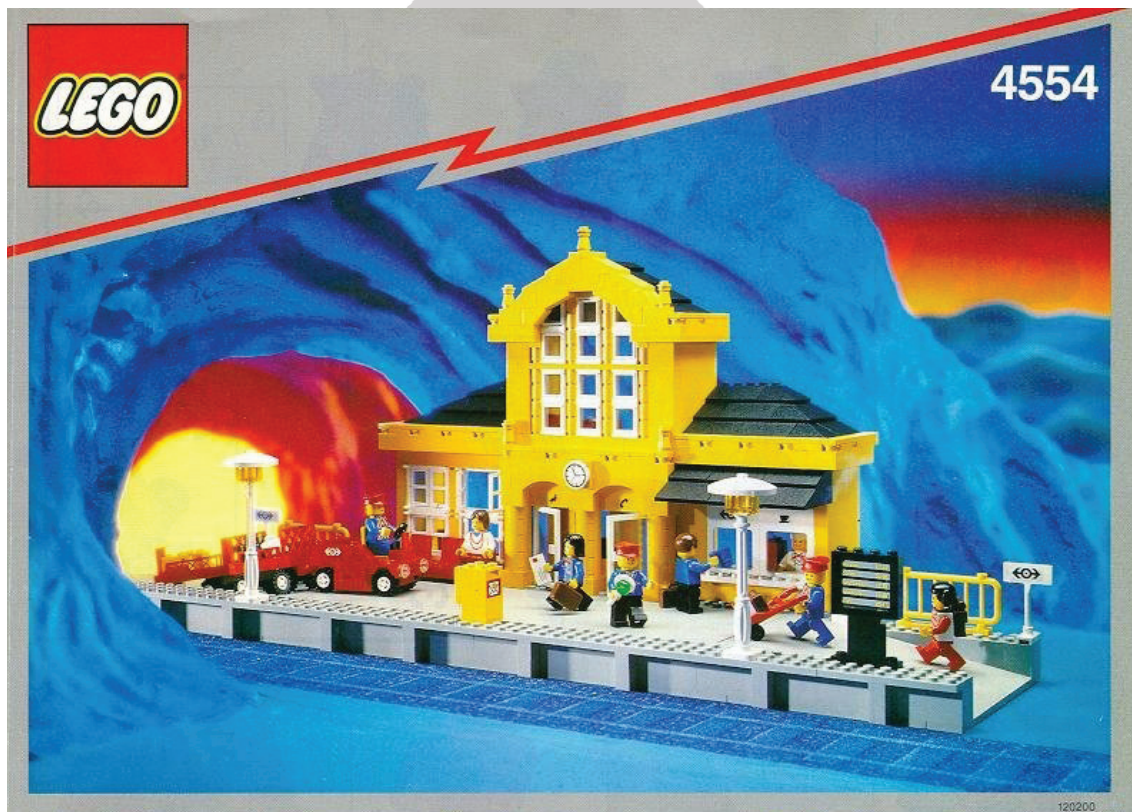
LEGOLAND Billund Miniland Manager doing some explanations about models

Remembering 9V

All aboard!

By Vicente Lis

Images by Vicente Lis and Brickset



More than 25 years ago, and lasting for more than a decade, LEGO® brought to the market a new collection of sets dedicated to the railway world. This sub-theme has remained in everyone's memory as 9V (9 volts).

This new system was the replacement for the 12 and 4.5 volt systems that were in the LEGO® catalog for 20 years, until 1986. The new 9V system improved the way trains worked, since (unlike the 4.5V which used batteries) this new system took its power from the rails which were connected to a 9V transformer/regulator, without any need for central rails as was the case with the 12V system. But the biggest change was the design of the rolling stock and other railway material.

In this series of nostalgia articles, the most outstanding sets of 9V system will be remembered, beginning in this article with the beautiful 4554 Metro Station.

The Metro Station is probably the best train station that LEGO® has ever designed. It was released in 1991 and contains approximately 600 pieces and 8 minifigures, with a selling price of about €75.

The set is an easy build, with the instruction manual not exceeding 25 pages. This kind of construction is what nostalgic LEGO® fans remember from old sets, without numbered parts bags or call-out boxes indicating the pieces needed for each step. That means opening the bags, mixing all the pieces together, and then guessing the parts added in each step of the instructions before having to search and rummage through all of them. Oh the memories... that noise of the parts moving from one place to another of the drawer while looking for the corresponding piece...

The main part of the assembly is the station building, which is complemented with the platform and the luggage vehicle. The station building has four rooms: the waiting room, the main hall, the coffee shop and tickets area, with windows to the outside of the facade, and upstairs, the railway control room. The set is open at the back to increase playability and to recreate different scenes within the station.

The set has eight minifigures, which for the size of the set may look like enough, but there are certainly none to spare. It must be remembered that in those years the minifigures all had the same face – the standard smiling face – so the character and personality were entirely given by the torso and what covered their heads. Those were good times... There is the chef, who is in charge of the station's coffee shop, three passengers (the man with the briefcase, the girl with a backpack and those curious pigtails, and the woman with a necklace), and four station employees (two operators with red striped torsos, a sales clerk, and the station manager).



Some minifigures of the set 4554

Despite the simplicity of the assembly, which consists mainly of raising the building's perimeter, there are many details which enhance this set; such as the simple but very aesthetic finishes of the cornices, or the access stairs to the first floor, especially if one considers that most building sets of that time did not communicate between floors. And of course there are other details like the flowers, the information panel, and the lampposts.



Front Façade



Rear Façade

In 1996 LEGO® released a set that was a red version of the same station (2150), but it has not reached the hearts of fans in the same way as this one. This is a pity as it is a hard-to-get set, and quite expensive on the second hand market. So although it qualifies as a 'must have', unless LEGO® decides to do a re-release (or a similar set with the current techniques, just saying...) this set will have to remain on the wish-list of many fans.



In short, the aesthetics of the building's facade reminds you of countless classic train stations, and that is where the success of this set lies. The two-story façade with the clock in the middle, the gable roof, and the central body finishing in a front arch in front of the gabled roof, together with the colour combination of a yellow façade with black roofs, make this set one of the most beloved of fans.

See you at our next stop on this railroad trip around the 9V system.

#



Reviews

Review: 76020 - NINJAGO CITY

By lluisgib

Images by lluisgib and LEGO® System A/S

Set: Ciudad de NINJAGO

Set number: 76020

Parts: 4867

Contains: 16 minifigs

Let me start by saying... I don't have enough pages to talk about this set!



I recognise that, although I am not a big NINJAGO fan, I have bought a couple of sets from this theme over the years. I started with a couple of spinners, which I bought more out of curiosity than because I liked them. Later on there were some models I bought because I liked the design, like the Fire Temple or the Temple of Airjitzu.

When discussions about the NINJAGO movie started I was sceptical about the movie sets. Honestly, I thought they would be a mix-up of previous sets or less interesting models with a couple of minifigs as "bait". And then the NINJAGO CITY was announced and everything I had imagined went up in thin air.

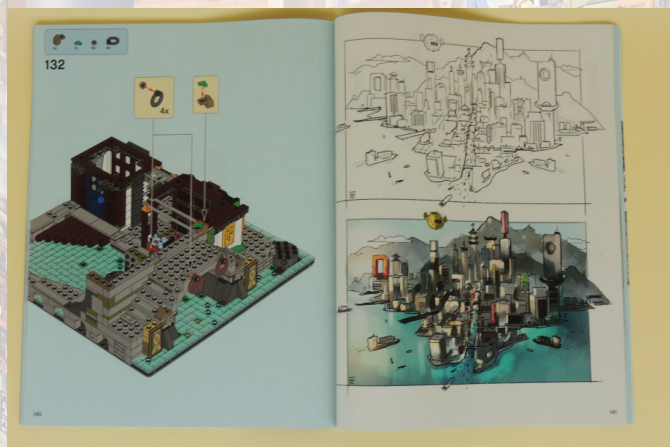
It is the largest set I have ever built. And it is so full of details that I have decided the saying "a picture is worth a thousand words" applies perfectly. That's why I will limit myself to briefly describing what you can see in the images.

In the set video, the designers tell us they have built the NINJAGO CITY vertically to make it somehow compatible with modular buildings. That's why the "building" consists of three levels, each with their own identity.

The set comes with three instruction books, one for each level of the city, two sticker sheets, 16 minifigs and a numbered bags that divide the elements into 16 sections.



The instructions books do not only contain the building steps, but also contain information about the set and about the movie.



In book 1, there are interviews with the director of the movie and with the designers of the set, a description of the alphabet that has been invented for the movie, and some additional images. In addition, each book includes a description of the level it corresponds to and a description of the minifigs for that level. To top it all off, in the centrefold of the books there are

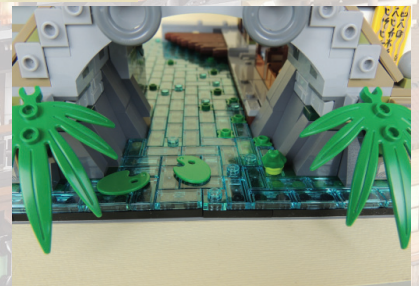
sketches of the movie and of the set.

The 16 minifigs correspond to characters in the movie. Some are ninjas that have already appeared in other sets, since they are the main characters in the plot of NINJAGO. I don't know if the other characters have appeared in other sets, but they all appear prominently in the movie. Anyway, as usual, the quality of the designs and the printing are excellent, and so are the complements and accessories that come with them.

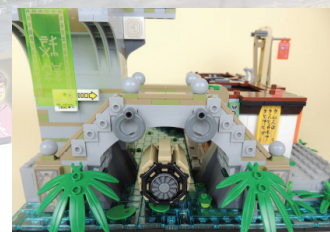


Level 1 - The Old World

This is the oldest part of the NINJAGO CITY. In this level you will find some buildings that are inspired on the traditional East Asian design. The first thing you build is the river on a 32x32 baseplate. A "bed" of different coloured plates is laid down and covered with trans-clear-blue tiles. The effect you get is that of water with different shades. The water surrounds the entire building. Some plants, among which the water lilies made with green minifig palettes stand out, provide some detail to this natural part of the set.



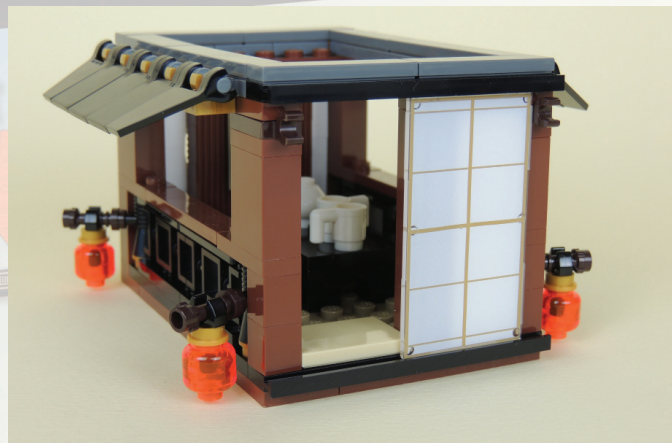
This old part centres on an old bridge that provides access to the City. The technique used simulates a stone bridge that is high enough to let a small fishing boat pass under it.



Once we are in the City, there are two two-story buildings in this old part. The first one is a fish shop that sells fresh fish which has just been brought in by boat. An interesting detail is the marquee that is made with black crowbars. The result is very realistic and it is a novel building technique.



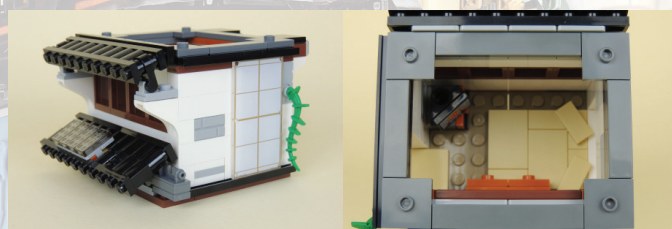
On top of the fish shop there is a small tea room. It contains a plant made with green minifig hair, a teapot, two teacups and a painting of a dragon. The entrance to the room is closed with a sliding door that looks like it is made of paper. On the outside there is a canopy that covers the window and a pair of red lanterns.



Next to the fish shop, separated by an alley, there is a small room where SWEEP, the robot in charge of cleaning the City, is being recharged.



In front of it there is another room with a sliding door made of "paper". It is a traditional room with a sofa, a small cupboard and a TV. On the side that has windows there are two roofs, one on the lower side, which protects SWEEPS room, and the other on the upper side, sheltering the people who sleep on the sofa. The roofs are also built in an oriental style, although they are different from the ones in other parts of the City.



Right in front of this room there is a wooden dock where the fisherman can store his catch of the day.



Not a single corner of this set has been left unused and there is a ladder to get to the upper rooms on the side of the room where Sweep is charging.



This first level reminds me of the images you can see of traditional neighbourhoods in China, Japan or Korea, to mention just a few countries. It is the part I like best personally, because of the level of detail in reproducing all the traditional elements.



Level 2 - The Street

This is the busiest part of the NINJAGO CITY. On this level there are shops, restaurants and services. This level also consists of two floors. On the bottom level there is a comic shop, a restaurant that specialises in freshly fished lobster and a cash dispenser.

The comic store is chock full of materials. In addition to comics there are action figures, posters and collectibles. The shop is small, and the design of the façade is not especially outstanding, except for the COMICS sign and the air-conditioner on the outside.



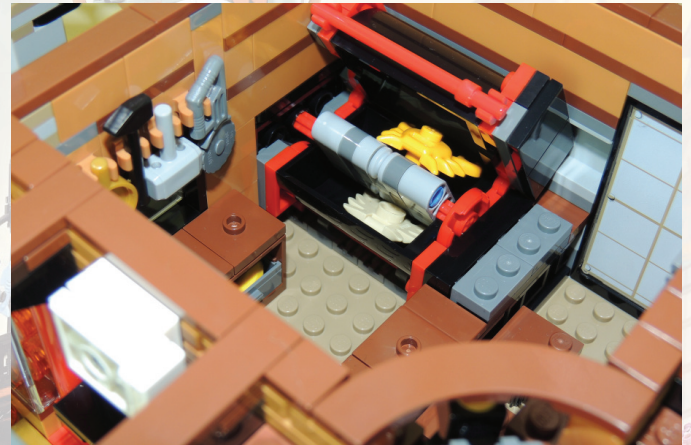
The cash dispenser is right next to it. The curious thing is that it actually dispenses money. Behind the dispenser there is a drawer that holds up to 13 banknotes and a mechanism that pushes them out through the front.



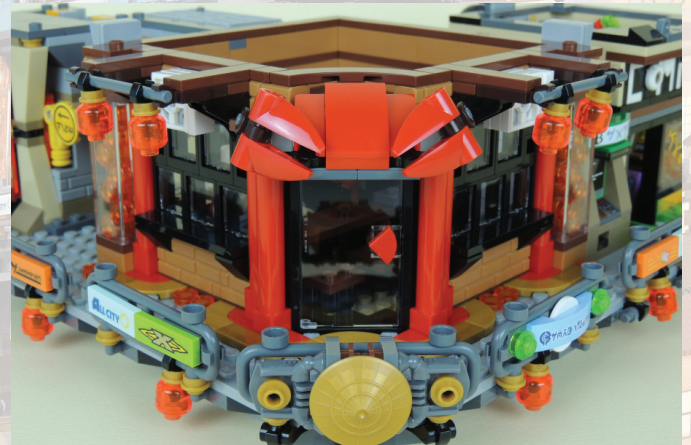
The star of this floor is the seafood restaurant. Both the exterior and the interior of the restaurant have a traditional design. Inside you find the board the cook prepares the lobsters on, the oven to cook them and a bar with three seats.



The oven is fun to use as it has a turntable that allows you to put in a raw lobster and pull out a cooked one.



Over the entrance door there is a giant lobster. The corners of the building are flanked by red columns. There are windows on both sides that let you look inside. On top of those there is the air conditioning and some lanterns.



Behind the lift there is a billboard announcing the NINJAGO Movie. In the rear there is a small storage space for three more posters so you can change the movie that is announced as you like.



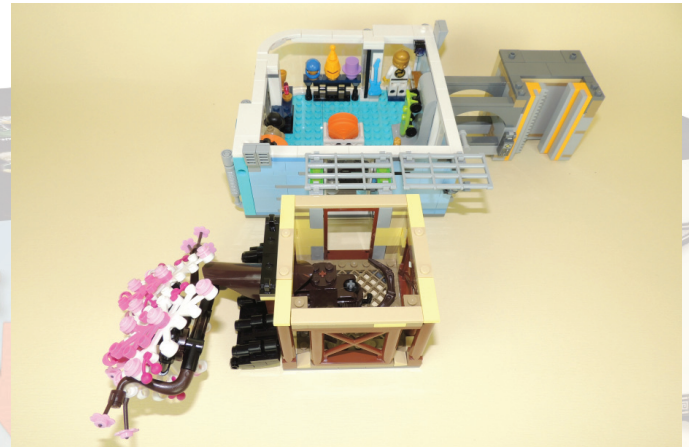
The top floor of this level has a fashion shop where you can buy clothes and complements, electronics and sports equipment. These are all displayed in sections and the shop can be accessed from the lift.



The exterior is has large shop windows providing a great view from the outside. The design is much more minimalistic and the colours are more lively. The fashion shop is right above the restaurant.



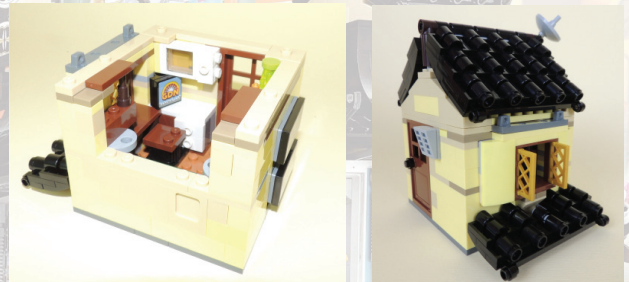
On top of the comics shop there is a small room that has a blossoming cherry tree growing out of the window. Although I love this detail, I don't quite understand what this cherry tree is doing here or how the structure of the building could support a tree this size.



On the outside there is a promenade that goes all the way around the ground floor of this level. There is lots of publicity, lanterns and decorative elements. When you put the two floors together it reminds me of places like Dotonbori or Osaka. Everything is very concentrated, colourful and full of people.

Level 3 - The High Rise

The top level is the luxury level of the building. At this level there is a sushi bar, a luxury apartment, and the communications tower of the City.



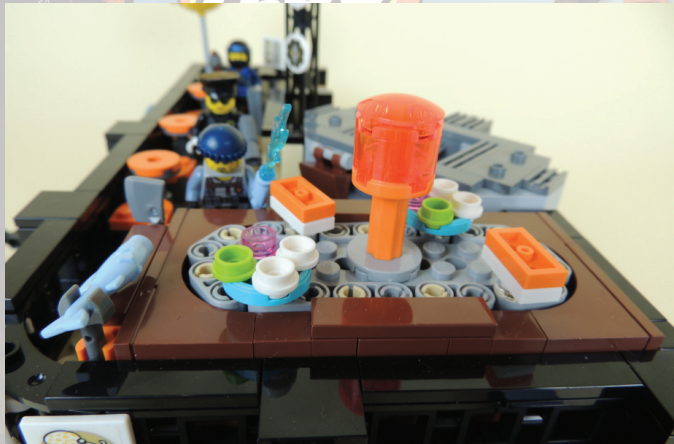
The apartment is small. Two of the main characters of the movie live here. Lloyd and his mother. It is a minuscule



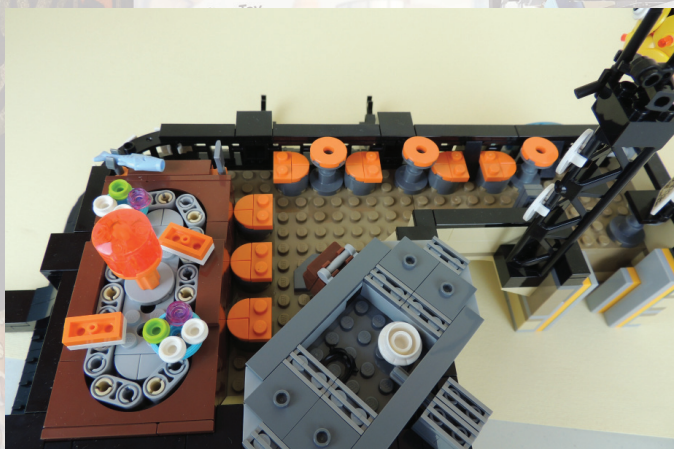
room, but it is fully equipped, with two bunk beds, a kitchen, wardrobes, bookcases and a TV. The shelves are full of objects and things from the comic shop.

The outside is austere and modern. Again, a different construction technique provides another black oriental style roof.

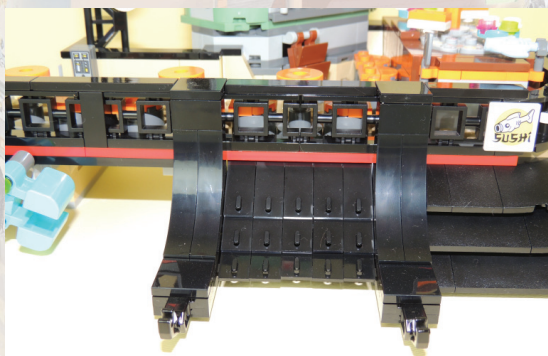
The sushi bar has one of the mobile elements I like best in all of the set. The Kaiten Sushi (a Sushi train). Some time ago I saw an AFOL model that included a Kaiten Sushi and I loved the idea and how it had been executed. I believe the designers have been inspired by that idea to add a small Kaiten Sushi bar in the restaurant. There are four plates on the Sushi train, waiting to be picked up.



The restaurant also has an area where the cook can prepare his Sushi, cut the Fugu (pufferfish) and serve it on the tables on the terrace.



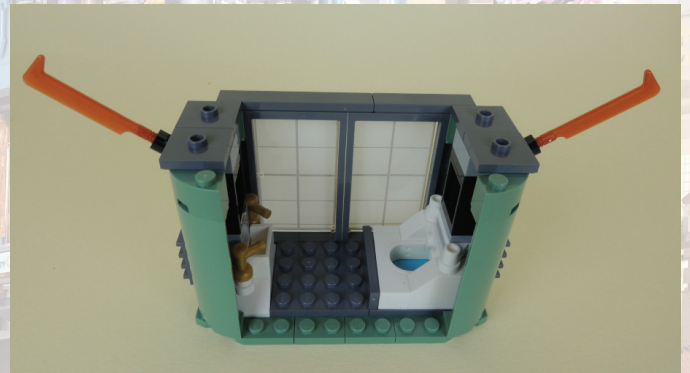
On one side of the façade there are several billboards announcing the restaurant. Special elements include a fish made of pieces and a giant yellow pufferfish.



The TV tower, in sand green, includes antennas for communications and a bathroom for the restaurant.



The bathroom has paper sliding doors and the windows in the back are also made of "paper" to let some light in. The toilet itself is traditionally Asian, so you have to squat. The toilet paper is pink. On the opposite side there is a wash basin with two taps.



The façade serves as a roof for the lower floor. Again the design is different, this time using car doors..



Overall Impression

Once you connect the different levels, the model is spectacular. And very heavy. Of course that's to be expected with nearly 5000 pieces. As I mentioned at the beginning, the level of detail is exceptional. I could write 20 pages and it wouldn't be enough. Each building, each corner, every accessory has a purpose. What I'm trying to say is they are not just there to fill a gap.



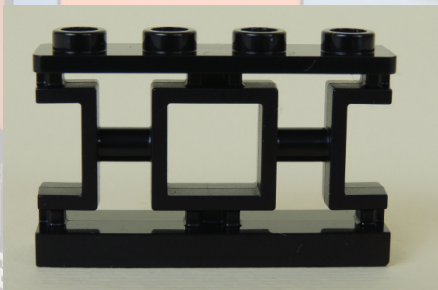
The completed model is really big. And it can be connected to modular buildings. Here you can see it together with the Assembly Square. That's the reason why the set is made up of vertical levels, instead of creating a lower and more horizontal set.



The building process is very entertaining and there are no repetitive elements. You come across all sorts of surprises as you build; things you don't appreciate at first glance. Also many different building techniques have been used in this set.

The movie will surely give more visibility to some of the elements of the set. Anyway, the set is worth having even without taking into account the movie. As for the price, I was pleasantly surprised that a set of almost 5000 pieces costs around €300. I was expecting a much higher price since the set is marketed as a licensed set, just like the LEGO® Movie and LEGO® Batman Movie sets.

There are some new elements, among which I'd like to point out the oriental style fence which is used extensively all through the set, and that helps to give the set an "oriental" feel.



To sum up, any LEGO® fan, no matter their preferences, will enjoy building this set. I believe it is a must-have, especially for fans of modular buildings, oriental culture or even Friends, because of the level of detail it has. It's been some time since I last enjoyed building a set this much, and I find it hard to find anything I don't like as everything is exactly where it should be.

Find a large table, take a seat, open the box and ... enjoy!

NOTE: All opinions expressed in this review are entirely my own.

#



Review: 21310 Old Fishing Store

By Jose (Satanspoet)

Images by Jose (Satanspoet)

Set: Old Fishing Store

Set number: 21310

Parts: 2045

Contains: 4 minifigs, 1 cat, 3 seagulls

The old fishing shop model was originally designed by LEGO® Ideas member Robert Bontenbal (Robenanne), and after getting the necessary backing it has become an official LEGO® set: the LEGO® Ideas 21310 Old Fishing Store.

The shop contains all the articles you might need to go fishing, as well as a watchtower with a 360-degree lookout and a small office. The set contains four minifigs, a cat, three seagulls and a total of 2045 pieces.

Upon opening the box there are bags numbered from 1 to 7 and a booklet with information about Robenanne and the LEGO® designer Adam Grabowski who created this set, a sticker sheet, and a Tan 32x32 baseplate.



Minifigs

The set comes with four minifigs: a captain, a fisherman, a fisher woman and a child, and also a cat and three seagulls. The seagulls are the same ones that appeared in series 10 of the collectible minifigs in 2013.

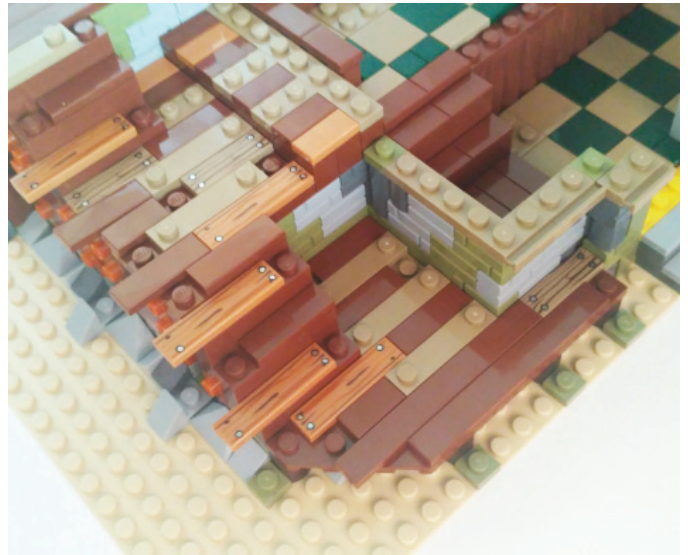


Building the set

We start by building the foundation of the shop. All the structural elements the shop rests on are placed on the 32x32 Tan baseplate. This involves mainly arches and pillars in Reddish Brown. In addition, rocks are built using slope elements. As a decorative element, there is a cobweb with a big black spider.

Next you build the floor of the shop, which consists of tiles in Dark Green and Dark Tan, as well as the floor of the watchtower next to the main building.

Stairs provide access to the shop at the front of the building. These feature a combination of 1x2, 1x3 and 1x8 tiles in Reddish Brown with wood patterns. Next to the shop there is a small office with a desk, a swivel chair, a small lamp and a newspaper on the desk. There are two windows in this office, and stairs that lead to the upper floor.



The shop has a counter with a till, a mug, a bottle, some money and a desk lamp. There are also many other items in the shop, like oars, fishing tackle (rods, harpoons and nets), three helmets and three sets of oxygen bottles, flippers, a sextant and a decorated map indicating possible treasure.

The rear wall of the shop opens on hinges to make it more playable. This wall is made up of two parts. The lower part has a tap and two pipes with water or gas meters and the top part has two windows and a ventilator.



The upper level of the watchtower has a removable roof with a weathercock, two windows that open, and a lookout that goes all around the tower. There are also decorative elements including a rudder and some lobsters. The roof of the main structure is also removable to provide easy access to the interior and it is decorated with tiles featuring printed wood patterns.

Outside there is an anchor, two tires with chains, three boxes with two fish each and trans clear slopes and tiles by way of ice, four fish hanging from hooks, two life vests, a box of hooks, and a toolbox with a drill, a can of oil, and a wrench. The façade of the building is covered in sand green tiles, which is the predominant colour of this set.



The entrance to the shop has a sign that reads “Anton’s Bait Shop”, and a poster with the opening times. On the side door there is a sign explaining that Anton has “gone fishing”.

After finishing the build, the set is about 32cm tall and has a 25x25cm base.



Conclusions

This set is magnificent and the building process is both easy and entertaining. In addition, the many details, both inside and out, make for a very realistic final model.

We would like to thank LEGO for providing this set for review. However, LEGO does not approve nor endorse the opinions we publish about their sets.

#



Review: Hilton Paris Opera

By Iluisgib

Pictures by Iluisgib

Set: Hilton Paris Opera

Set Number: Set designed by LCP Dirk Denoyelle

Parts: 2503



In addition to the interview with Dirk Denoyelle included in this issue, the LEGO® Certified Professional (LCP) has also been so kind as to offer us his most iconic set for review.

In the interview, Dirk explains a little about how this project came about:

The Hilton project – summer of 2015 – was an amazing experience for us. We had our art exhibit in the hotel all summer, we built a large scale model of the hotel (picture AmazingsLEGOArchitectureDirk&HiltonParis) , we did some team building workshops there for companies, we built a small scale model of the hotel concierge and we built an exclusive set, a miniscale impression of the hotel.

The model was only on display at the Hilton Opera Hotel in Paris and, from what I know, was only displayed to the people who were staying in the hotel. A LCP can produce sets, provided they are for special events with specific characteristics, and they are always to a maximum of 500 copies. Over the last few years sets produced by LCPs have gained a lot of popularity in the AFOL community due to their quality and limited access.

This is the first time HispaBrick Magazine® has analysed a set created by an LCP. And it is the first time I have built a set of this type, which makes it quite the experience.

I received a cardboard box with the set inside. It was very well packed for protection during shipping. Together with the set there was also a small card from Amazings (Dirks company) that read: "with compliments". After removing the protective material I see a luxury box – very glossy! On the front is a picture of the model and the corporate logo of the hotel. On the back there is a short description of the history of the hotel with some historical images. I'm almost afraid to touch it as I don't want to spoil anything. It's also a pity to break the seal, but there is a fantastic model inside waiting to be built. I open the seal with a pen knife and carefully take out the bags with parts and the building instructions.



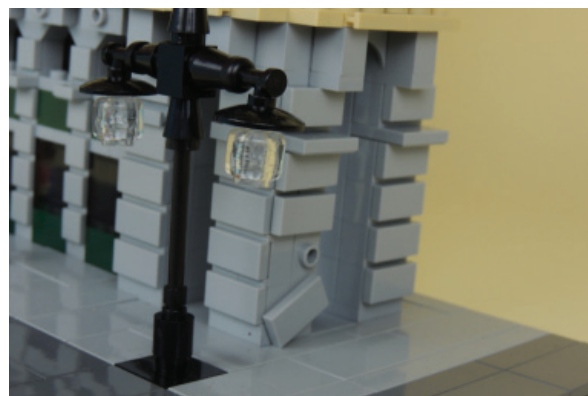
The parts are inside zip bags. I have to admit I was a little taken aback. There are 2503 parts, but no numbered bags and no logical order inside each bag. I don't even want to imagine the work the employees of Amazings must have put into preparing almost 500 sets with 2503 parts each. Of course there is some fear that parts may be missing since manual packaging can cause some errors. But at the end of the build there were parts were left over.

The spiral bound instruction manual is also different to what we are used to seeing in LEGO® sets. The front and back have a gloss finish and the interior pages are printed on glossy paper that must be 120gr or more.

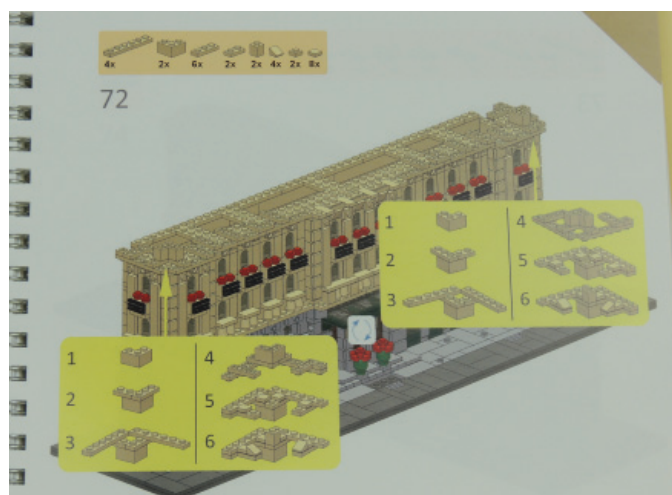
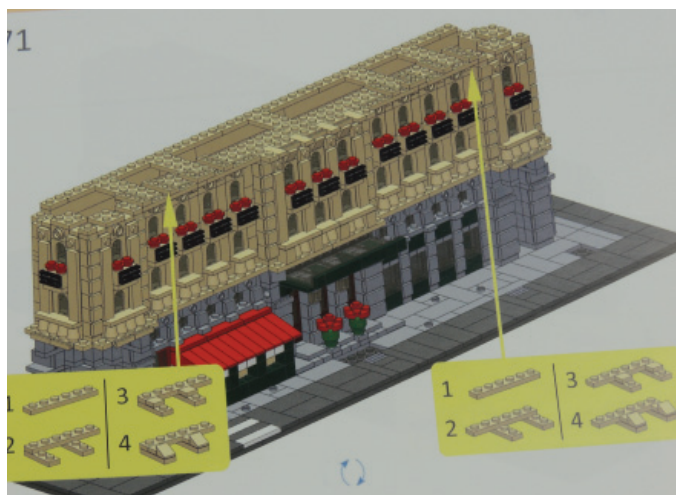
The build is very interesting. The base of the model is predictably quite standard, as you need a robust base to build the model on. But once I start with the actual building things get more interesting. Since this is an 'unofficial' set – meaning it is not oriented at children – it incorporates building techniques, some of which are explained below, which would be forbidden in sets for little ones. The ground floor is Light Bluish Gray and represents the entrance to the hotel with its steps, flowerpots and marquee. To the right there are some glass windows. To the left, in Dark Green with a Red roof, there is a restaurant which stands out a little from the façade of the building. On either side of the building there is a lamp post with a classic design. Finally, right in front of the main entrance there is a printed tile with the logo of the Hilton Paris Opera.

On the side of this ground floor you can see the first of the concessions Dirk has made. Since the Brick, Modified 1 x 1 with Studs on 2 Sides, Adjacent which has come out this year wasn't then available, he has connected the tiles on this side with a single stud, which means you need to align them very carefully.

In the construction of the upper floors there are many interesting design techniques. For example, some parts are placed on a tile and are only connected by the stud at the top. This allows the creation of certain shapes that would not be possible otherwise. The first and second floors are similar, with the main difference being that the first floor has railings on the balconies while on the second floor there are flower pots with red flowers.



Between the second and third floor there is another curious detail – a cornice with studs facing down. In order to achieve this effect, an interesting technique is used that you can see in the picture. The third floor is again similar to the floors below. The difference is in the central module which has decorative elements instead of rooms, and small roofs between the rooms by way of decoration.



There are attic rooms in the roof, each with their own canopy. I really liked this stage of the building process because of the shapes built with cheese slopes and slopes on the sides in order to better simulate edges that are not perfectly linear. There are six vertical wall sections breaking the continuity of the roof. The central part roof section is higher than on either side and it is finished with a decorative trophy element.



Building this set has been both a challenge and a pleasure. I had my doubts at first as to what it would be like to assemble an unofficial set. Even though it was visually appealing, would it be a mediocre set in terms of techniques? Not at all! The model is fantastic. A luxury model in every aspect. It took me 5-6 hours to build, and once finished it is a delight to the senses. The similarity to the original building, the size, the building techniques, the details... it is one of those sets I feel fortunate to have built and which shows what can be achieved if you don't need to adhere to the strict (though understandable) design rules of the LEGO® company for regular sets.

NOTE: I would like to thank LCP Dirk Denoyelle (and Amazings) for providing the set for review. All the opinions in this review are entirely our own and may not coincide with those of the author of the set.

#





The LEGO® Boost Experience

By Jetro de Château

Images by Jetro de Château and LEGO® System A/S

Set: Creative Toolbox
Set Number: 17101
Parts: 847

Opening a long-expected LEGO® set is always an experience, but this set is somewhat different. First, I have made sure to have an assistant: only a seven-year-old will do to see if this set really lives up to its expectations. In addition, this is not just a LEGO® set, but a robotics kit (although LEGO® never uses that word when advertising the set) which has me just about as excited as my helper.



The box for this set has a peculiar format – it feels very long – and is full of information about the set. The front of the box indicates we need a tablet (required but not included), as well as batteries (6x AAA), and the back of the box includes a link to a LEGO® webpage where you can check the compatibility of your tablet. Both sides also prominently feature the five models you can build with the set. Interestingly the front shows off Vernie the robot plus all five models in cartoon format, while the back has Franky the cat as the large main model along with photographs of the other four models.

The box contains 11 numbered bags and one bag with some large wheels, long Technic bricks, a motor and a sensor. There is also a white box that contains the hub. There is a cool poster of Vernie, with all the mandatory safety information as well as instructions on how to insert the batteries and reset the hub. Finally, there is a cardboard playing mat with some additional product information on the back, including the bill of materials. The mat also instructs you to find the app using the keywords LEGO® Boost, but I did not find any QR code to take me straight to the download page.

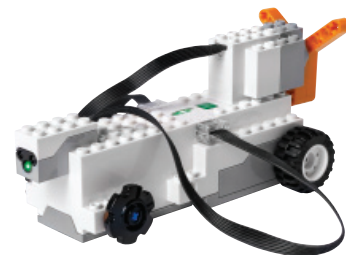


The app requires quite a bit of memory and processor power. The link [LEGO®.com/DeviceCheck](https://www.lego.com/en-us/DeviceCheck) takes you to a page that explains the minimum requirements for iOS and Android devices. Unfortunately, the list of Android devices LEGO® have checked themselves is quite short and you are better off visiting the LEGO® Boost Community on Facebook where you can find an extended list of devices confirmed by users. Also, although LEGO® plays it safe and lists Bluetooth 4.1 as a minimum requirement, I have found that many devices with Bluetooth 4.0 also work, provided they are BLE enabled [1]. An 8" screen is also not a hard requirement (several users have reported being able to install on 7" devices), but using the app on a smaller screen becomes uncomfortable.



First steps

With the app installed and the numbered bags in front of us, we set out to start building. The big question is what exactly will we build? When you open the app, it points very decidedly at a very minimalistic model – just the hub and a pair of wheels – that you can build with the parts in bag number 1. It is a very satisfying experience because you immediately get to use the app to make that base move and try out some code sequences. The two little robots you build with a couple of bricks each serve as target practice and we had some good fun programming with just a handful of pieces.



Result of building bag number 1



Vernie

A note to the uninitiated: BLE works different from Bluetooth in that you do not establish the connection in the Bluetooth configuration section of your device, but rather in the app itself. If you try to connect to the hub in the configuration section of your device you are likely to run into some issues, so simply turn on your Bluetooth and start using the app.

Vernie

The numbered bags have been designed to build Vernie as the next step. My seven-year-old thought Frankie the cat was much cuter, but she conceded that it made sense to first build Vernie because the bags were numbered – talk about pragmatism.

First you build Vernie's torso and head. Then it's time for some quick programming. The expressions on Vernie's face are good fun and things get even better when he starts to speak and asks you to program his head so he can move it. Vernie tries to use his tracks, only to realise they haven't been built yet, so then it is on to building again. The setup is fun and keeps a nice balance between serious building and lightweight programming.

Programming

The programming interface uses two kinds of blocks. While building the 'Hero models' there are numerous combined action blocks, specifically designed for a specific model. In the case of Vernie, for instance, there are blocks specifically for moving his head one way or another. As you progress through the building stages you discover new blocks, and those get added to your treasure chest so you can reuse them later on. The advantage of this is that kids are not presented with too many options right from the start, and instead learn what the blocks do little by little. If you don't have the patience to collect all the blocks or simply want to get into some more serious programming you can always go to a special area of the home screen. To the far right there is a vortex, hidden by a curtain. If you go in there you get access to all the small blocks that make up the larger actions that the Hero models use. This is also the programming area you need to use to follow the Boost Programming tutorial in this issue of HispaBrick Magazine.

The app with the instructions and programming interface has only been released for Android and iOS, although LEGO® has announced they are developing this for new platforms and will release a version for Kindle devices in late September. LEGO® has learned an important lesson from the WeDo 2.0 release which launched on numerous different platforms and had some serious trouble at the start. Personally, I would like to see versions for Chromebook, Windows 10 and Mac, but it is unclear whether that will happen. In the meantime, and before LEGO® has even announced the release of an SDK[2], Jorge Pereira has reverse engineered much of the Boost protocol and made it available on GitHub [3]. Picaxe has also released a helper app that allows you to program Boost with Scratch [4].

Battery Life

When you start using Boost, you will soon realise the batteries run out relatively quickly. AAA batteries are not particularly high capacity, and it may be worth your while to invest in decent rechargeable batteries. Philippe 'Philo' Hurbain did some tests around power consumption and found that once the hub is linked to the app, consumption is at 70mA. However, after a program has been launched it doubles to 140mA and stays like that unless the hub is powered down. That means when using standard 1000mAH batteries you have around 7 hours of idle life – without any programs running! That's not very good and hopefully this can be optimised in future firmware updates. We only got halfway through Vernie before the app started informing us the batteries were running low. An official rechargeable LiPo battery would be the perfect solution, but since Boost is not a LEGO® Education product I very much doubt they will ever produce one.

5 in 1

The official name of the Boost set is "Creative Toolbox". It contains no less than five complete models. While Vernie is the star of the show, there are no obvious 'secondary' models. Frankie the cat has a lot of personality and an important cuteness factor. The Auto Builder is a robot that builds robots and MTR4 is a bulldozer with different attachments.

My only disappointment was the Guitar 4000. The model is solid and the functions are cool. It makes sounds, and pretty cool ones at that, but you simply cannot make music with it. Much of this is due to the inevitable lag in BLE communications. Because the program runs on the tablet it takes a few milliseconds for the sensor information to be sent from the model to the tablet and processed, and for the appropriate instructions to be sent back. In any of the other models that's no big deal and goes virtually unnoticed, but in music timing is everything.

Once you are done building the Hero models, you can move on to creating your own models. This is where the name "creative toolbox" really applies. Not only do you have the parts and the electronics to create your own robot, the app also provides instructions for a wheeled base and a walking base. This means that rather than figuring out the complicated mechanics of such a base, you are provided with a starting point for your own designs.

If I can keep up the supply of batteries the set is sure to be an absolute success at home, and I look forward to seeing what models AFOLs come up with for this set.

[1] You can use a BLE Checker app from the Play store to confirm if your tablet has BLE

[2] Software Development Kit

[3] <https://github.com/JorgePe/BOOSTreveng>

[4] <http://www.picaxe.com/LEGO-Boost/>



Different screenshots of the App



Trains

By HispaBrick Magazine®

LEGO® started its Train theme in the mid 60s with set number 323 and the 4.5V system.

Later on it continued with the 12V system which used metallic centre rails to conduct electricity to the locomotive. The sets evolved towards greater realism and playability. Elements like signs, colour light signals, lamp posts, crossings and switches with remote control were added, allowing for more more complex and realistic dioramas.

The 90s brought the 9V system which consisted of trains with 9 Volt motors taking current straight from the track through metal wheels. This system brought new light and sound elements, but switches and crossings were no longer remote controlled.

In 2006 the RC system was introduced and the tracks for these trains were 100% plastic. This meant all metallic elements disappeared, including the transformers. The trains drew their energy from batteries and were controlled with infrared remotes.

Finally, since 2009 with the introduction of the Emerald Night set, the current LEGO® Train system uses Power Functions.

What happens when a person is a fan of both trains and LEGO®? The result is the perfect combination to take their passion to the next level. In this section you can see a few outstanding examples.

#

Massimo Biancardi (CLV LUG), FS ("Ferrovie dello Stato") E 645 (1959), Italy, May 2016



Maciej Drwiega, Snow Plow PKP 411S-121, Poland, January 2017



https://www.flickr.com/photos/maciej_drwiega/

Scott Wardlaw, Union Pacific GP60, U.S.A, September 2014



wardlws: <https://www.flickr.com/photos/wardlws/>

Michal Melerowicz, Erie Triplex 01, Poland, December 2016



melerro: <https://www.flickr.com/photos/48231488@N00/albums>

**namo, Rhätische Bahn
Ge 6/6 I and Alpine Classic Pullman Express, Japan, September 2011**



namo-den: <https://www.flickr.com/photos/namo-den/albums/with/72157627746918636>

Peter Norman, Vale SD80ACe Ready For Shipping, U.S.A, July 2012



swoofy: <https://www.flickr.com/photos/swoofy/albums>

Antonio Bellón, Steam engine DR Baureihe 86 (2-8-2), Spain



legotron: <https://www.flickr.com/photos/panzerbricks/sets/72157652184091300>

Oskar Steger, SBB Doppelstock



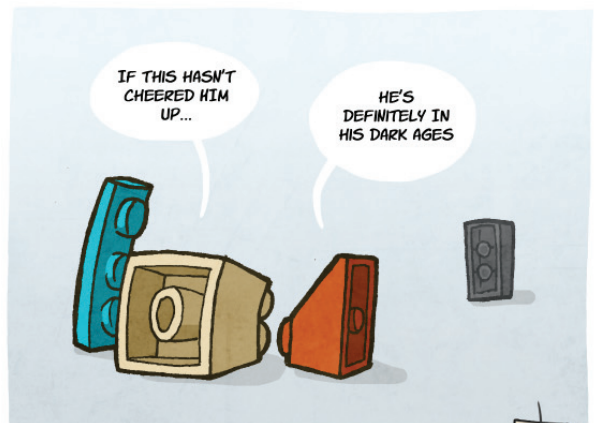
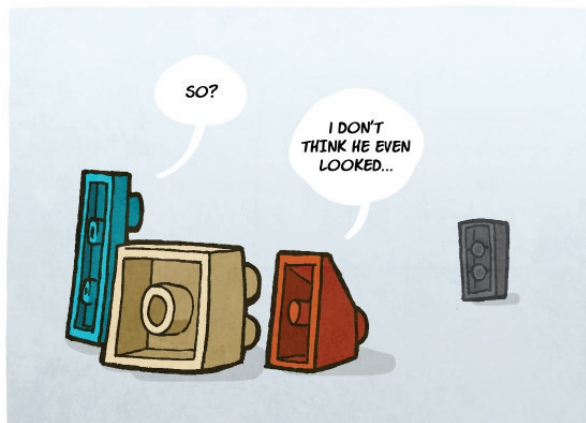
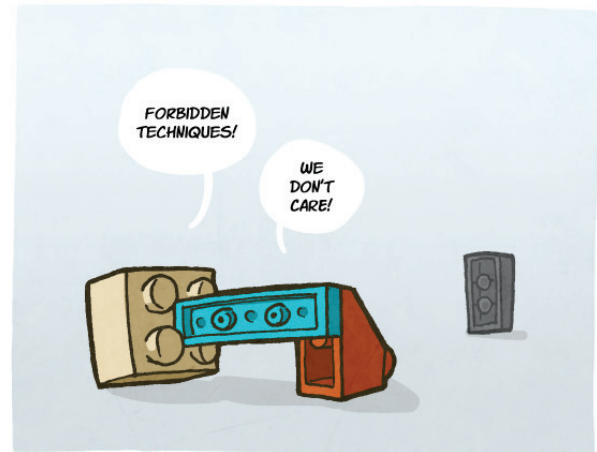
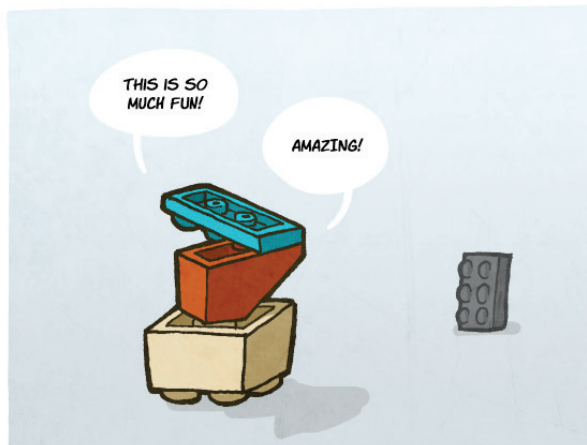
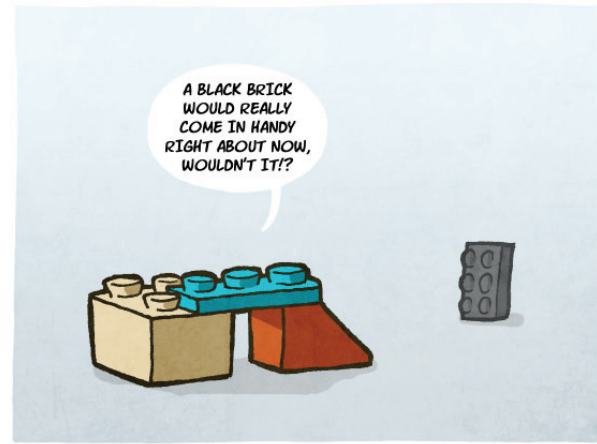
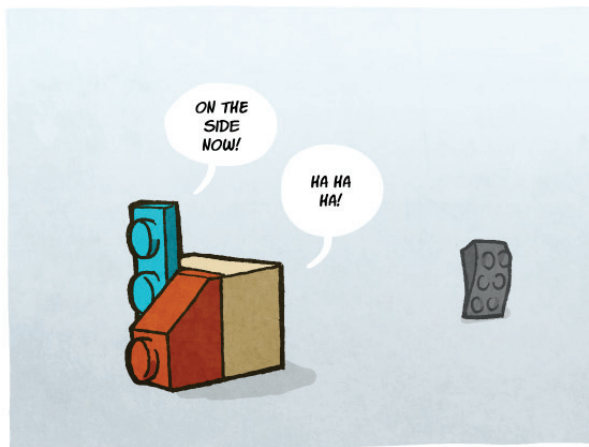
legobauer: <https://www.flickr.com/photos/125244080@N03/>

Cecilie Fritzvold, Yellow Flash, Norway, 2011



Cecilie: <https://www.flickr.com/photos/cecilihf/>

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