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The Unofficial LEGO Builder's Guide also includes the Brickopedia, a visual guide to more than 300 of the most useful and reusable elements of the LEGO system, with historical notes, common uses, part numbers, and the year each piece first appeared in a LEGO set.

Focusing on building actual models with real bricks, *The LEGO Builder's Guide* comes with complete instructions to build several cool models but also encourages you to use your imagination to build fantastic creations!

The Unofficial LEGO Builder's Guide by Allan Bedford No Starch Press ISBN 1-59327-054-2 \$24.95, 376 pp. AVAILABLE NOW

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**Publisher/Editor in Chief** Joe Meno

**Assistant Editor** Jim Foulds

**Photography Editor** Geoff Gray

**Business Manager** and Proofreader Carin Proctor

West Coast Editors Todd Kubo Ashley Glennon

#### Writers:

Steven Apers, Solomon Baru, Allan Bedford, Serge Belsack, Jared Burks, Didier Enjary, Joe Fulton, Anders Gaasedal, Anne Henmi, Robyn and Don Jessiman, Kelly McKiernan, Gregor Meier, Peter Reid, Bryce Rollins, Allen Smith, Ludo Soete, Zachary Sweigart and Erik Varszegi.

#### Many thanks to the websites who have served as mirrors for *BrickJournal*:

www.rtltoronto.org www.lugnet.com www.northcomp.com www.bzpower.com www.brickshelf.com www.peeron.com www.brickmodder.com

#### **About the Cover:** Rendering and art by Geoff Gray.

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# From the Editor:

I'm writing this as I am finishing up the layout, and I gotta tell y'all:

This is really fun!

You thought I was going to say something different. weren't you?

Maybe you thought I would make a comment about how hard this magazine is to run and how it's a lot of effort and late nights.

Well, it is.

Maybe you thought I would complain about how so much has to be done to get an issue done, from planning to gathering articles, editing and then laying things out.

A lot has to be done, but I'm not alone in this - I have editors look over each article and proof them. This issue especially is noteworthy because Geoff Gray managed the articles of this issue's spotlight: Digital Building. I'm proud of this issue because while it is run under my editorship, someone else took on a section and did a great job! Thanks, Geoff!

I'm not going to lie to anyone - this IS a major project and at times very challenging. Events are missed, and sometimes I can't find people on a gallery online. Sometimes and article or two will get late, and sometimes things just don't work out. Sometimes in the rush of other projects, things get dragged out.

So why do I do this? What is the payoff?

In this case, about 100 pages. Almost every page is a note from one AFOL to all of you, an invitation to explore and see what the AFOL community has done.

To all of those who have written for me in this issue and past issues, I applaud you.

To those writing for the next issue and those yet to write, I welcome you.

And to those reading this magazine, I thank you.

Joe Meno Editor

P.S Have ideas or comments? Drop me a line at admin@brickjournal.com. Or go to www.legofan.org or www.lugnet.com and leave a comment on their forums! I'm open to suggestions and comments and will do my best to reply.

P.P.S. If you want a short LEGO-oriented newscast with set reviews, fan news, and community news, go to the Spamcast, by Tom McDonald - you can find it at: http://www.spamcake.com/spamcast!

LEGO<sup>®</sup> WORLD, in the Dutch town of Zwolle is the biggest LEGO event in the world. The 2005 event was the fifth edition. And BeLUG (the Belgian LEGO Users Group) was present as well, of course !

The reporting, however, starts a lot earlier than the first day of LEGO World.

#### Spring 2005

The first drawings for the 2005 layout were put on paper at the LEGO Festival 2004 in Brussels. As this event wasn't organized in 2005, we could concentrate on having us in full force on LEGO World. After thinking of these basic ideas, the first real plans and schemes were designed in the spring of 2005. It didn't last long before an avalanche of new ideas came along with the BeLUG members who wanted to build some MOCs for the layout. This led to a fast expansion of the layout. It became so much bigger than in 2004, we realized we needed to assemble new modular tables.

#### Summer 2005

The assembly of the modular tables took place in July. Just as in 2004, we had the gym hall of the primary school of Stasegem (Belgium) at our disposal during summer school vacation for our tryout sessions. Because the construction of the tables took a lot more time than expected, the test setup in the school began several weeks later than in 2004. Because of this, we had less time to "rehearse", and with the layout being much bigger, and the builders not all being present at each rehearsal, the layout was never entirely built!

#### September 2005

Full rehearsal. The plans for the layout changed a lot since the first drawing. Version number 25 (!) should be about the definitive one. During an open house event of the Ingelmunster fire station (Belgium), a part of the layout is shown to local public, and the reactions are very positive.

#### October 2005

The LEGO Group was kind enough to transport our tables for the build-up of our stand, from the depot in Schoten (Belgium) to Zwolle. Only, in 2005 there were 5 pallets to transport, and only 2 the year before !

The MOCs also had a bigger volume than in 2004, so one of our club members had to come with his truck to bring the other material on site, followed by some heavily loaded cars.

#### October 19th, very very early in the morning

All the vehicles were charged and ready for take-off to Zwolle. A few hours later, the whole BeLUG team arrived. We had a warm reception from our Dutch friends. Our location in the exhibition halls had been determined in advance, so we started immediately with the setup. The build-up of the modular tables took about 6 hours, as there were several levels in the layout. Once these were ready, we could start to put

MOCs on them. Here and there, we had to rebuild some MOCs that hadn't survived the transport, but after about 10 hours of hard labour, the result was worth seeing ! All the items formed one big nice setup.

Time to go to Ommen, where we would stay the whole week in a bungalow park. Once there, we finally got something to eat, and had an after talk about the long day. Around midnight it was time to go to sleep, because the next morning, we had to rise early to go to the exhibition halls (the IJsselhallen).

#### October 20th

The organization supplied a daily shuttle bus from the bungalows to the IJsselhallen, which we used to get to the exhibition. When we arrived, we had to quickly adjust some last details, because at 10 AM, the first visitors were coming in.

For this edition of LEGO WORLD as in previous events, our Dutch friends of De Bouwsteen could count on several foreign clubs, not only from Belgium (BeLUG), but also from Germany (1000-Steine), France/Canada (FreeLUG), England (The Brickish) and Italy (ItLUG).

The visitors as well as the exhibitors were both amazed with the enormous number of beautiful creations on the different stands : we noticed De Bouwsteen with a working pinball machine made of LEGO elements, steered by 13 RCX bricks linked by infrared, models by order of firms (an office building of more than 2 m high and a tugboat of about 1,5 m long), a gigantic castle and a Star Wars battlefield.

#### News: LEGO World

# LEGO<sup>®</sup> World: Another Perspective

Last issue, BrickJournal had an article on LEGO World. We follow up with another article from another club that was involved with the event.

*Original text : Serge Belsack, Ludo Soete, Steven Apers* 

Translation : Serge Belsack

Photos by members of BeLUG



Members of BeLUG with LEGO executives, including Kjeld Kirk Kristiansen at LEGO World and Hans Beuze, president of De Bouwsteen (the Dutch LUG)



Presenting the BeLUG display to the LEGO executives

evolution of the techniques and the building methods of LEGO throughout the years. The entire Bionicle series was there as well.

trains.

on it.

FreeLUG showed a rollercoaster with a vehicle that was pulled up to the highest point and then let loose to go down through a loop and back to the starting point – using only gravity. Further on, another Frenchman built an automatic milling machine, with which he cut all kinds of logos in a sort of hard

At the stand of the English delegation, we saw a large space ship (a space vessel hosting several little other space crafts), a beautiful zeppelin and some self-made

Reinhard Beneke from Germany, as always, showed some superdetailed trains as well as a farm with everything

There was also the Dutch Maico Arts who made a review of all the Technic sets ever released, so you could see the

styrofoam, all very nice.

And of course, TLC also brought some nice things to LEGO World : the Ferrari F1 (scale 1/1), a lot of showcases with nice displays and a whole zoo of full-sized animal models.

But... don't let us forget our own stand, about 50 m<sup>2</sup>, and in fact the only layout in the whole event that was built as a whole (so not only separate MOCs): a real-life city with all its components (a station, a port, buildings, a mountain etc.). The visitors noticed this as well; the comments were very positive. Just like the year before, our Dutch friends didn't have enough eyes to find all the details of our layout. During the setup, they came to "spy". As one of the Dutch board members remarked, " the Belgians are real builders" and someone from ItLUG said that our models evolved a lot in the last 2 years, from "standard LEGO" models to grown up MOCs. It seems that we are going in the right direction !

The great enthusiasm of the 48,000 visitors also gave us a really good feeling.

The highlight of the event was the visit – on the last day – of Kjeld Kirk Kristiansen, the big boss of TLC and grandson of the founder of LEGO. He took the time to visit all the stands. He also stopped a while at the BeLUG layout and was delighted with the city we created. That, for sure, was enough of a boost for us to create a whole new layout for the 2006 edition! BeLUG member Peter Seynhaeve even used his best Danish to give some explanation to the LEGO leaders, who were guided throughout the exhibition by the board of De Bouwsteen, and their president Hans Beuze.

All exhibitors of LEGO World, as well as the members of De Bouwsteen who were present, received an EXCLUSIVE minifig with certificate, of which only 1,000 were produced (- 30 destroyed because of production error).

During the buffet offered by TLG on Saturday evening, the participants of all 5 editions of LEGO World were thanked with a Parker<sup>®</sup> pencil and ballpoint with the inscription "2000-2005 LEGO World ". For BeLUG, Ludo Soete (our president) received this gift.

Do you want to learn more about the online LEGO community? Then swing by http://www.legofan.org. LEGO Fan is a web site dedicated to helping people learn about all of the great online resources available, and to help connect people with each other.

#### LEGO Fan - Your entry into the world of LEGO Enthusiasts.

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Kjeld Kirk Kristiansen at LEGO World



Minifig and certificate given to LEGO World exhibitors

# Skærbæk

# In October 2005, some European LEGO clubs took part in an event - this is their report!

#### Article by Anders Gaasedal

Photos by Anders Gaasedal, Chris Paton, Peter Vingborg, Carsten Straaberg, the members of Byggepladen, Menno Gorter, Thekla Borchert

At the last Brickfest in Jelling, 2005 I was contacted by Jan Beyer from the LEGO Group, who asked if I wanted to join an exhibition with my models at an event in the fall 2005 if he could make the arrangements. I and several others from the Danish club Byggepladen did not waste time to reply and said yes to join the event.

Jan Beyer, Project Manager at LEGO Community Development, (who takes care of the contact to AFOLs around Europe) put a huge amount of work in arranging all the necessary details for the event. The results were a lot of LEGO building and enjoyable days with other LEGO enthusiasts.

#### The Exhibition

The event was arranged in cooperation between the LEGO Group and Rømø-Skærbæk Turistoffice, and the location was chosen to Skærbæk Fritidscenter which had the necessary space and equipment for this kind of event.

The event was announced in newspapers before the event, such as Ribe Ugeavis. The poster to the right was also placed in different locations around Skærbæk.

It was planned to last for 3 days, from Friday to Sunday. Friday was for setup, Saturday for exhibition, and Sunday for exhibition and close down.

#### Friday, October 7

Friday morning, I was ready with all my models and pacakages at 9 o'clock, and met with Carsten Straaberg, manager of the club Byggepladen. Carsten owns a minivan, which made it much easier to transport our model. At 9:15 we headed towards Skærbæk, arriving at around 12:30. We met Jan, and said hello to the other participants from Germany and the Netherlands who had already arrived.

After the welcome session, we had a delicious lunch then we were ready to setup tables and start building. Jan had made a plan for everything, sizes of tables and locations, so it was pretty easy and quick to get started.

Members from the German club, 1000steine, had already arrived, so they had started to setup their models, and before long, everything started to take shape.

The setup of our city took almost the whole day. In between we also had a dinner in the restaurant, but we were quickly back to the setup. The city consisted of parts from 6 members of the club, which meant a large puzzle for our four participating club members to fit together. When the day was over, we finished and had a city with lots of life and detail.

During the afternoon, the last participants from the Netherlands also arrived, and they brought a lot of exciting creations, such as a racing track for trains, which we were excited to see built.

When everybody had finished the setup and everything was ready for the grand opening next day, we went to the restaurant and had a small talk and a goodnight-beer.

I was lucky to stay together in a small house with Peter Vingborg, Chris Paton and his wife Jane, so after the bar we had another small talk in the house, about some of the real important things in life - LEGO.

## News: Skærbæk



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#### Saturday, October 8

Finally, Saturday arrived and we were met by a huge breakfast at 8 o'clock. After that we went to the hall to make sure that everything was prepared for opening at 10.

Everything was ready, and at 10 we saw a lot of visitors. Jan really did a great PR job, as both adults and kids visited the event, and when the day was over, we have had almost 300 visitors!

The day went so fast we almost forgot to eat, but on a little break we all got our lunch while somebody looked after the models. It's a little hard to avoid anyone from 'looking' with their fingers, so it is best to have somebody to look after the layout to avoid any train crashes and destroyed models.

The LEGO Group had also made some competitions, where you could win some LEGO prizes from the LEGO shop.

When the clock was 17 (5pm), we closed the exhibition and the last of the visitors went home. When Jan announced that dinner was served, it didn't take long before the hall was closed.

After a delicious dinner, Jan went around and gave each of us a bag with all sorts of LEGO parts, from minifigs and space parts to Bionicle and Technic parts.

After a few minutes of sorting, everybody started to walk around and exchange parts with each other.

After the dinner we went to house 21, Jan's house, where everybody met and discussed the past day.

Also today we had a little time in our own house to talk, and another exchange of a fine LEGO present from Jan..

#### Sunday, October 9th

Oh, it was tough to get up early on Sunday, but that probably is normal when you have fun in the night and the talk is about LEGO.

Breakfast at 8, again a huge amount of delicious food, all from bread to bacon and eggs.

After the breakfast we were ready to check our exhibition for opening at 10.

Today, the people started to walk in, right after 10. We had a lot of visitors, with the total attendance almost reaching 600! But again, all too soon, the clock had turned 15 and we had to close and pack everything down for transportation home.

After packing up, we had a quick soda and a small talk in the restaurant. After saying good bye to everyone, it was 4 hours of driving home.

#### **Final remarks**

Such a great event deserves a few final remarks.

I thank the prime mover of the event, Jan Beyer. He put a lot of work into making it a great experience for both the participants and the visitors, and I hope the models we brought lived up to his expectations. I can sure say for myself that I had a great weekend, with a lot of LEGO discussion, and a lot of enjoyable company with other nice people. The rumors are already running that Jan will arrange an event next year in Skærbæk again, and I hope I will have the opportunity to join and meet a lot of colleagues and visitors again - hope to see YOU there!













Here I should remember to thank all the photographers for all the fine pictures, which I have also used some of, on this site.

#### Miscellaneous

Links for other pictures

Here I have made a collection to galleries, with pictures from the event:

Chris Paton, Brickshelf gallery http://www.brickshelf.com/cgi-bin/gallery.cgi?f=148970

Peter Vingborg, Brickshelf gallery http://www.brickshelf.com/cgi-bin/gallery.cgi?f=149128

Carsten Straaberg, Brickshelf gallery http://www.brickshelf.com/cgi-bin/gallery.cgi?f=148983

Byggepladen, Brickshelf gallery http://www.brickshelf.com/cgi-bin/gallery.cgi?f=149189

Menno Gorter, Brickshelf gallery http://www.brickshelf.com/cgi-bin/gallery.cgi?f=149271

Thekla Borchert, Gallery http://festum.de/1000steine/myimages/ 31Skaerbaek2005

#### Participants' Homepages

Here I have made a collection of links to homepages, galleries, shops, etc. made by the participants of the event

Carsten Straaberg, homepage. http://www.straaberg.dk/lego/

Peter Vingborg, Bricklink shop. http://www.bricklink.com/store. asp?p=Wingcastle

Chris Paton, Brickshelf gallery. http://www.brickshelf.com/cgi-bin/gallery.cgi?m=chrisp

Knud Thomsen, homepage. http://www.sitecenter.dk/legomodeljernbane

Christian Rasmussen, homepage http://www.geocities.com/EnchantedForest/Cottage/5900/Adventurers.html

Per Langkilde, homepage. http://swcreator.homepage.dk/

Bruno Kurt, Bricklink shop. http://www.bricklink.com/store. asp?p=legocastle

Klaas H. Meijaard Bricklink shop.http:// www.bricklink.com/store.asp?p=greenman

Thekla og Ronald Borchert, homepage. http://www.robothek.de/Lego.htm

Menno Gorter, Brickshelf gallery http://www.brickshelf.com/cgi-bin/gallery.cgi?m=Menno-Gorter

Anders Gaasedal, LEGO Trucks & Cranes http://www.gaasedal.dk

#### News: Frechen

# LEGO<sup>®</sup> goes to Frechen

and the world record in fast bricking goes back to Germany

Article by BricksInLev (alias Gregor Meier)



In the middle: Noppingen by TRETTY, JuergenL, Misch, Lemming and me; in the rear: some sellers; in the front: the world record audience



Jan Beyer giving the start-signal



TASTERS Taskforce Team (from left to right: Tobias Reichling, Christian Krützfeldt, Bruno Kurth, Dominik Gerlach and Holger Matthes)

8



1000steine-tram by Misch

In the beginning of 2006, on the 6th and 7th January, the German 1000steine-community met in Frechen, a small village near Cologne, for the third time. TRETTY (alias Andreas Tretbar), the master of disaster [sorry ;-)], called, and about 150 community-members answered his call.

There were attendees from the Netherlands, Belgium, Luxembourg and Germany, presenting their old and new MOCs in the sports hall and the small theatre hall of the local CJD BBW, a religious organisation which helps young people, giving them chances learning a new job and socialising themselves.

The event was covered by various local and regional newspapers, radio-shows and one TV-station.

Between 3,000 and 4,000 people visited the event during the 2 days. They were able to see a huge number of wonderful creations and models, take part in various activities for children and adults and talk to and discuss with the exhibiting AFOLs.

And, of course, there was a special task which had to been done. The world record in building Set 8421 (Technic Mobile Crane) should come back to Germany. And a special task needs Special Forces. In case of this, the "TASTERs Taskforce Team" was created. Members of this team were: Tobias Reichling (alias TASTER), Holger Matthes (alias HoMa), Dominik Gerlach (alias dominik), Bruno Kurth (alias legocastle) and Christian Krützfeldt (alias Q).

Many of the visitors joined us just to watch when Jan Beyer, (Project manager, LEGO Community Development) gave the start signal.

Five team-members with ten hands and fifty fingers began putting the bricks together. The audience was astonished at the techniques the 5 were using. But these became the right ones - after 1 hour, 10 minutes and 46 seconds the new world record in building Set 8421 was set!

Congratulations and a great "thank you" to: Tobias, Christian, Bruno, Dominik, Holger and Jan, making the record possible and "official".

For the first time in the history of this event, we were proud to present a kind of LEGO<sup>®</sup>bazaar, with different sellers from the Netherlands, Germany and the team-members of the LEGO-Store Oberhausen.

And it was a great job they had done. The community-members and the crowd of visitors used the opportunity, picking up some bricks, sets and rare parts they were searching for.

The visitors' children had much fun and used their creativity in a special area of the sports hall, by building their own small cars, animals, buildings and other fantastic creations with bricks donated by Jan Beyer and LEGO Germany.



Detailed MOCs by Frank Deuter



The kid's corner

Surely, some of the parents realized it was amazing, seeing their children sit down and play so they could spend plenty of time looking at the huge number of detailed models shown all around.

Frechen 2006 was a great success for the community, for the LEGO Group and for visitors, both young and old. It was in each way a familiar happening. We can say: "studs are not only able to connect bricks, but also connect people".

Hope we will see you next year on 6th and 7th January, in Frechen and we may able to say:

"Same plan as every year".;-) 🚺

More information is available here: http://www.jahrestreffen-frechen.de/ home/index\_d.php



A guest-model: The AIDA

### News: Intl. Toy Fair



# 

# Peeking at the 2006 Sets at Toy Fair

Photos by Jim Foulds and Joe Meno

In February, *BrickJournal* was invited to attend the International Toy Fair in New York and see the upcoming sets from the LEGO Group. While many of the sets that were shown there were recently put on shelves, a few are yet to show.

Here's a look at some sets that haven't been released - a small preview of this year's sets! Enjoy the pics!

















# Community: Collecting

# Promotional Bricks: An Introduction

LEGO promotional bricks have been around for over a decade, but who collects them? BrickJournal talked with a person who has a website dedicated to them.

Article by Ashley Glennon Photos by Mark Papenfuss

www.PromoBric

Who would have guessed a trip to a gas station in the year 2000 would ultimately spark one of the largest known collections of "special" LEGO bricks to date? As Mark Papenfuss, a Southern California LEGO fan tells it, "I was getting gas one day at a Shell station and they had some little sets that I thought my son would enjoy. He was just about old enough to appreciate them so I bought a few and the next thing I knew I was sitting beside him building and playing. That's when it all came back to me."

"IT," it turns out, was an emergence from a dark age of LEGO building, and the catalyst for what would ultimately lead to the launch of www.Promobricks.com, the only site on the web dedicated exclusively to the collection and chronology of LEGO promotional bricks.

LEGO promotional bricks are limited edition printed bricks produced by the LEGO Company to commemorate a special event or milestone. In the majority of cases, promotional bricks are produced in the larger sized "DUPLO" format and are given away free.

Although the fueling incident re-kindled Papenfuss's passion for LEGO products overall, it was a trip to LEGOLAND California in October of that same year that introduced him to promotional bricks.

"Back in 2000 I was at LEGOLAND California and they had the 'Brick or

Treat' event and were giving out promotional bricks along with other random goodies. I received some bricks that I liked but had no idea what they were or why they were special. When I got home I checked out a post on LUGNET<sup>™</sup> and verified that these bricks were indeed special. My first thought was that I could sell some of the bricks I received and possibly purchase a cool LEGO set with the money. Instead, I decided to keep them. After a few months I noticed other styles and designs of bricks popping up on Ebayand the rest is history."

*BrickJournal* caught up with Papenfuss recently and asked him to provide additional insight on his collection and the launch of his website.

**BrickJournal:** How many promo bricks do you have in total? **Mark Papenfuss:** Actually, I'm afraid to know the answer to this question! I can tell you that in my personal collection I have 103

unique DUPLO promo bricks and 16 unique FABRIK style bricks. FABRIK bricks are given out at LEGOLAND in Germany and have a stud pattern like standard, system bricks. When you take the fact that I like to have two of each DUPLO promo brick and then add the FABRIK bricks, I have 184 bricks in my collection. If I add the bricks I have for trade or sale, my collection exceeds 2,500 bricks. The vast majority of these are from LEGOLAND California.

Fabrik Pre-Opening Brick LEGOLAND Deutchland, 2002

"Brick or Treat" Brick,

2000

LEGOLAND California,

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lai 2002

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#### **BJ**: What is your favorite brick in your collection?

MP: It definitely has to be the 'Downtown Disney, Orlando, LEGO Imagination Center Store Opening, November 1997' brick, because this brick was the most challenging to obtain. I searched for this brick for a few years with no luck. I finally managed to arrange a trade for one - and I'm still looking for a second, since I like to collect two of each brick for display purposes.

**BJ**: Do you know if there are other promo brick collectors out there? If so, how many would you guess?

MP: Without a doubt! I've made many great friends from across the world the UK, Germany and throughout the USA, as well as a few other countries - all thanks to my interest in promo bricks. I break the collecting group into three categories:

Visit the

LEG0®

Imagination

Center

at the

DOWNTOWN

**DISNEY** Area!

- Hard Core: Willing to spend over \$100 on a single brick
- Serious: Has a limit of about \$50 \$75 per brick.
- Casual: Only goes after the new bricks that you can get for under \$10

I would say there are about 10 Hard Core collectors, 20 Serious collectors and countless Casual collectors.

**BJ**: What's the rarest brick in your collection? **MP:** There are actually a few bricks in my collection that I would consider very rare. All of the older employee-only bricks are very hard to come by since there was not that many made, and they are from a time before anybody really collected them. And if you look on my site and see an, "\*I NEED ONE MORE OF THIS BRICK\*," you should know it is a rare one.

# Grand Opening November 6, 1997

LEGO Imagination Center Opening Brick, Downtown Disney, Orlando, Florida, 1997

#### **BJ**: When did your site go live?

MP: I started to publish my collection up on my first site, "Land Of Bricks," on 6-19-03. My web logs showed I was getting many hits to my promo bricks page thanks to online search engines like Google. Also, thanks to the Commemorative Brick program LEGOLAND CA started up, the page was getting rather large and I decided the collection needed its own home. I opened PromoBricks.com on 9-10-04, and the site gets more and more hits each month. I have more plans for the site such as forums and expanded stories with pictures.

**BJ**: What is the value of the rarest brick or bricks in your collection? MP: The most I have paid for a single brick was \$150 and I have a few bricks I paid over \$100 for. The most I ever sold a single brick for was \$199. Buying bricks is rare for me, but when I do spend a high amount for a brick, I rationalize with my wife by reminding her of how much money I have made from selling bricks I got for free-- and that I am using that money to pay for the new bricks. I usually trade bricks-for-bricks with fellow collectors.

BJ: What do you think about the idea of a commemorative brick associated with BrickFest?

MP: You are asking me if I think a new brick is a good idea? Yes, actually -I would love to see as many new LEGO-produced bricks as possible.

BJ: Are you aware of any fan created promo bricks?

MP: None that I am aware of, I think people like to make their own special mini-figs because everybody loves a mini-fig.

BJ: Do you also collect the various non-promotional printed bricks (regardless of standard or DUPLO size)? For instance, some folks like to collect one each of every printed tile.

MP: I thought about this but I decided that sticking to one aspect and putting 100% of my effort into that one avenue would be the best route to go.



Mark@PromoBricks.com

**BJ**: Do you have any speculation as to how many additional promo bricks might exist that you are not aware of? Might there be some Danish bricks for Billund, Denmark, employees?

MP: As much as I would like to think I know about all the bricks out there, I am still finding out about new bricks that are from pre-2000. Just a few months ago somebody contacted me offering to sell me a collection that contained three bricks that were new to me and other rare employee bricks. And I also found out about a new key chain / brick very recently. I am just about certain that I'm aware of all the post-2000 bricks, as the word was out by this time. But for the older bricks, most of them were employee only items, and as far as I know, LEGO never kept track of them. I don't believe there are non-USA employee bricks because there is no evidence of any, but you never know. I am always on the lookout for new bricks!

BJ: How long have you been a LEGO fan? What got you started? MP: When I was a kid I loved the Classic Space sets. I'd buy them all the time and had a very large collection going on. I am not sure what made me go into my 'dark ages' but I was in it for quite some time.

#### **BJ**: What are your other LEGO interests?

MP: Town and Space hands down. More town these days since unless you like Star Wars any new space sets are impossible to come by. And, more specifically - gas stations! I think it has to do with the Shell station helping to get me back into LEGO - but every town needs a good gas station.

Mark's website,

www.promobricks.com, recently expanded with a forum: www.forum.PromoBricks.com.

Ashley Glennon is one of the West Coast Editors to BrickJournal, and is known as one of the foremost builders in the micro theme.

California, 2005

LEGO Maniacs FIRST Competition Brick, Connecticut, 1998

Star Wars Weekend Brick with holder, LEGOLAND



# Jasper

#### Interview: Mike Wilder

# "The MINDSTORMS robot that filmed a 3D documentary"

Solomon Baru interviews Mike Wilder about his 3D movie, and the MINDSTORMS robot that made it possible.

**SB:** Tell us about "The Carnivorous Syndrome in 3D".

**MW:** In summer 2004, I began to work seriously on a 3D documentary about carnivorous plants. Since it covers those plants which exhibit *the carnivorous syndrome*, it is called "The Carnivorous Syndrome in 3D." The goal was to make a 3D nature film comparable to "Microcosmos" or Winged Migration", but with no budget. As it turned out, the best way to do that was with a MINDSTORMS robot.

**SB:** I'm most interested in that robot, but first, I wonder--why carnivorous plants?

**MW:** I have been growing carnivorous plants for over 10 years now, and I have a very large personal collection. I find carnivorous plants to be fascinating creatures, and in talking to people, particularly school children, I've found that cp's are a great way to get people excited about plants in general. In 2003, a group of filmmakers were working on a documentary called "The Beautiful and the Fine." They asked me to shoot some time lapse video of cp's for that film. As I worked on that, I just kept thinking "Man, if we could see these plants growing and flowering in 3D, it would be absolutely incredible!" So the 3D seed was planted at that time.

**SB:** So did you just start working on the 3D film straight away?

**MW:** No (laughs.) It very quickly became clear that filming tiny plants in 3D is quite difficult. If you wanted to make a 3D movie of people playing cards, you could place two cameras side by side, and film the scene. The camera on the left captures a left view, and the camera on the right captures a right view, so you'd have the 2 views needed to make the 3D movie. Easy enough. But if you wanted to shoot one inch tall plants, very close up, you would need two cameras that were each only 6mm wide! If such cameras exist, I know I can't afford them. There are other optical solutions to the filming problem, but all of them are too expensive and too complicated. For example, IMAX made a 3D documentary about insects recently. Obviously they were filming small subjects in 3D, so they faced the same problem. Their camera apparatus





The Juxtaposition Module

weighed 3 tons. That wasn't an option for me! (laughs)

**SB:** So how did you use MINDSTORMS to solve the problem?

**MW:** Well, I was interested in shooting time lapse video in 3D. That meant that I could use a digital still camera, rather than a video camera. If you take a picture of a plant every ten minutes for a week, and then turn all of those pictures into a movie, you will see the plant growing, or flowering, or whatever. So that's a way to make 2D time lapse video with a still camera. The camera isn't shooting video, but you can convert the photographs it takes into video. I realized that if I built a robot that could take a picture, slide the camera over 6mm, and then take another picture, my 3D problem would be solved, because the robot allows me to capture the left and right views. I said that we could have placed two 6mm cameras sides by side, and that they would have captured the left and right views. My idea was to *simulate* two cameras, by simply moving one camera back and forth, and taking pictures at each position. In effect, this is a mechanical solution to an optical problem.

**SB:** So the robot holds the camera at a left position, takes a photo, and then slides the camera over to the right, and takes another photo, and that's it?

MW: That's the idea. Every left/right

pair can be made into a 3D picture. So if the robot can make left/right pairs every 10 minutes for a week or two, you can convert each pair into a 3D picture, and then convert all of those 3D pictures into a 3D movie of the plant growing or flowering. So that's the concept behind the robot.

SB: It sounds simple.

MW: Well, it is a very simple solution, but implementing it is a bit complicated! We're trying to create the illusion that a 3d movie camera is sitting on a tripod, filming a plant grow. But what is in fact happening is that a still camera is moving back and forth all the time. So the robot had to be very, very precise. If the left and right positions are A and B, the robot had to move the camera *exactly* to A and B every *single time*. If the robot wasn't very precise, the final film would appear jittery or blurry. It wasn't clear

at the outset whether I could get this level of precision with MINDSTORMS parts, since a .5 millimeter error is unacceptable. When I told 3D experts about my robot idea, they thought I was joking-- No one would be crazy enough to try to make a 3D movie that way! I told a plant photographer about it, who also happens to have a Ph D in physics, and he basically said that it would never be precise enough, especially if I used Legos. So the robot had to be designed very carefully!

SB: So how did you do it?

**MW:** The first thing was to make the sliding mechanism very stable. We only want the camera to move left to right—in the x axis. We don't want any motion in the y or z axis. So I decided to make the camera slide back and forth on technic axles. We usually think of axles rolling inside of fixed technic bricks.. But it occurred to me that axles could be fixed, and technic bricks could *slide along* those axles, because of their holes. (See the Juxtaposition Module detail at left.)

**SB:** Okay, I see how that gives you movement only in the x axis, but you still have to generate precise movements, right?

**MW:** Yes, exactly. The key here was to use a high reduction gear train, so that the camera moved very slowly. Then, I simply put a touch

sensor at the left and

Modu

# "The rotation module is sort of a bonus feature"

right positions, so that the robot "knows" when the camera is in the correct place. We get precision for free, since the robot is going to spin the motor until one of the touch sensors is closed. Since the sensor is in the correct position, it's only going to be closed when the camera is where it should be. Voila--precise, repeatable motion! This was a simple way to avoid problems from gear lashing.

**SB:** You call that portion the juxtaposition module, right? What are these other modules?

MW: Yes, what I've described so far is just a machine that moves the camera back and forth precisely. But the robot still needs to take the pictures! I have an electronic cable release-basically a remote control for the camera. So it occurred to me that the robot could simply push the button on the remote control. It's a bit more complicated than that, but basically, the cable release module is a contraption that holds the remote control securely, and has a moving "finger" that presses a button on the remote control. Again, the solution was to use a very high reduction gear train, and to use a touch sensor, so that the robot would "know" when it had pressed the button. This approach seemed wise, since we don't want the robot touching the camera-it would be too easy to shake or otherwise move the camera. By having the cable release module as a separate component, the robot can take pictures without disturbing the camera.

**SB:** That's cool! But you also have this rotation module—what's that for?

**MW:** Well, the rotation module is sort of a bonus feature. One thing that you rarely see in time lapse video is rotation or tracking generally, the camera just sits still and films the subject. I was very interested in seeing plants *rotate while they grew*. Moving the robot/ camera around stationary plants

would be way too complicated, so I decided to build a turntable that could rotate the plant subject. It's just like an lp turntable, except that it rotates a plant at one revolution per month, instead of an album at 33.3 revolutions per minute! The key here is that the turntable must rotate in discrete steps. If it were rotating continuously, the subject would have moved a tiny bit in the interval between the time the left photo was taken and the time that the right photo was taken. That isn't acceptable. So, the robot takes pictures from the left and right, then the turntable turns one-tenth of one (.1)degree and stops. The robot waits ten minutes, and then repeats. After doing this 900 times, you end up with 900 3D photos that show the plant growing while it rotates 90 degrees. In order to get such tiny motions (.1 degree), you need a very high reduction gear train. In this case, it's 1728:1. Although this kind of reduction wouldn't work in a lot of mobile robot applications, it worked very well in this case. In any event, I think it's pretty nifty.

**SB:** It *is* nifty! I'm amazed that you were able to get a LEGO robot to make those tiny motions. **MW:** Me too! (laughs) It just goes to show that you can do a lot with MINDSTORMS. As I said, IMAX used a 3 ton apparatus to film close up 3D. I was able to use a digital still camera, a remote control, and 396 MINDSTORMS parts to do the same thing.

**SB:** I understand the three modules, but why did you call the robot jasper?

**MW:** Well, we are all familiar with the nerdy convention that robots are named acronymically. Obviously I'm kind of nerdy, so I decided to follow that convention. jasper is: Juxtapositioning Automatic Stereo Pair Emulation Robot. I don't capitalize 'jasper' because jasper is a machine, not a person. A very helpful robotic buddy to be sure, but still just a machine.

**SB:** I think a lot of people would be interested in seeing your documentary. How can they do that?

**MW:** If they just want to see some stills, or a sample clip, they can go to my website: www.3dsyndrome.com. You



Left side picture of the plant



Right side picture of the plant





Merged 3d picture of the plant

can also see instructions for each of the modules there, as well as the Mlcad files. You can order the DVD securely at:

#### www.3dsyndrome.com/purchase.html

**SB:** I really enjoyed your film. I think it's just fantastic that you were able to make it with a MINDSTORMS robot. Is there anything else you want to say about it?

MW: Thanks (laughs.) This was my first attempt at building a MINDSTORMS robot. I'm very excited that it worked, and that the film turned out so well. I am very grateful to the AFOL community for all of the work they have shared online. As a novice MINDSTORMS roboticist, I benefited greatly from the Syngress books, the LDRAW/MLCAD tools and community, the POV-Ray community, etc. I tried to thank everyone in the (movie) credits, but I'm sure I missed some people. In any case, I'm grateful to all of these people who have shared their work. I hope that jasper and my film will inspire others, and that we will see many more exciting MINDSTORMS applications in the future.

b



The biggest LEGO fan event will be held in Berlin from 18th - 20th August 2006. The location will again be at the "Tegeler Seeterassen" and lots of great MOCs will be shown. The moonbase group is also planning something BIG! The first day is set up as a special day for 1000steine members and their friends. Other AFOLs from other LUGs will be warmly welcomed. There will be talks,games and contact with LEGO people from TLG. Don't forget - the main aspect is meeting each other and having fun.

More information: http://www.1000steine.de/1000steine-land • Contact email: rene@1000steine.com



#### **Video Games**

# **LEGO Star Wars II:** *The Video Game*

So you've played the video game, and you thought "this is pretty cool." Then you wondered about the making of the game, so you turn to BrickJournal for the scoop, but we show you a poster of characters and scenes that weren't in the game. So what's up with that? Well, it's called "LEGO Star Wars II: The Original Trilogy" and we offer now an exclusive preview and interview with one of the developers of the games, Jonathan Smith.

**BrickJournal:** What's your favorite part of working on the LEGO Star Wars games?

Jonathan Smith: The moments when we see a new character animated and

experience. We based the whole design, from the start, on the idea that two people could play the game together, whenever they chose. We call that "drop-in/drop-out" gameplay; whenever someone's playing on their



brought to life for the first time are always highlights. We have huge affection for all the different characters, and our animators always manage to interpret their personalities and quirks with a delightful style and humour.

**BJ:** What was your first reaction when you learned about the LEGO Star Wars project?

**JS:** Utter delight. I'd been working on some LEGO game ideas for a while, and it was immediately fantastic to get the opportunity to put them together with such a rich, emotionally involving story universe.

**BJ:** What is your favorite part or feature of LEGO Star Wars?

JS: Without a doubt, the two-player

levels, and use their special abilities to discover secrets and bonuses. Seeing your character switch from Obi-Wan Kenobi to Darth Maul, to R2-D2, to a Battle Droid, to Jango Fett, is a unique LEGO feeling. Both the original LEGO Star Wars, and the new LEGO Star Wars: The Original Trilogy, are built around those features.

**BJ:** How early in the game cycle did you get to (or have to) learn the secrets of Episode III? Did that bother you to know before the movie was released?

**JS:** Yes – once we'd decided that the original LEGO Star Wars would tell the whole story of Episodes I, II and III, it was clear that we'd need access to the movie story materials, and the folks at Lucasfilm and LucasArts were

extremely helpful there. We started building models based on the new LEGO toy range early in '04, but left the bulk of the Episode III level work to the end of development. We were privileged enough to see an early cut of the film in progress back in November '04. It was an amazing experience; and, no, it didn't spoil anything, at all. When you're so immersed in a world, you appreciate every detail.

**BJ:** Once LEGO Star Wars was a success, what were your ideas for LEGO Star Wars II?

**JS:** We were all so proud of the original LEGO Star Wars, we were determined to be equally proud of any follow-up. That meant aiming high, right from the start, in our aspiration to be a true sequel – not merely a continuation. Although we had enormous love for



the Original Trilogy content, we also wanted to drive the gameplay forward. A couple of areas were a particular focus for us: firstly, to give players more freedom, with bigger, richer and more interactive environments to play



#### The LEGO Star Wars Teams:

TT Games Publishing Ltd (formerly, Giant) Jonathan Smith: Development Director Loz Doyle: Producer

#### **Traveller's Tales:**

Jon Burton: Director James Cunliffe: Lead Artist John Hodskinson: Lead Programmer

#### **Amaze Development**

Game Boy Advance version of LEGO Star Wars Game Boy Advance and Nintendo DS versions of LEGO Star Wars II: The Original Trilogy.



in; the opportunity to explore more freely in classic LEGO Star Wars vehicles like the X-Wing, the Millennium Falcon, AT-ST and Snowspeeder; and the power to create and customise your own minifgure characters. Secondly we worked hard to give the many different playable characters in the game really distinctive personalities and cool new abilities.

**BJ:** Is there anything else you'd like to say about LEGO Star Wars II?

**JS:** Only that we've genuinely loved working on the game, and we hope everyone enjoys playing it, too!



Jonathan Smith, Development Director for TT Games Publishing Ltd., working on LEGO Star Wars II



# Alban "Banban" Nanty

BrickJournal goes to France to meet a builder with an ambitious goal: To make a Star Wars<sup>®</sup> film.

But not any film, as you will see...

Article and Photos by Didier Enjary

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Alban is both an AFOL and Star Wars fan. That's not very original. But he is also brickfilms dedicated which logically inspired him to start the LEGO Star Wars Project.

**BrickJournal:** Hi Alban. First of all, could you introduce "Banban" to our readers? **Banban:** I'm a 31-year-old French guy and work in the video-game industry as a programmer.

I played with LEGO bricks from 4 (my first set was the #218, gift for my fourth birthday) to 16 years old then had my Dark Age until my 25th birthday. When Mindstorms was released, I came back to LEGO, since I was interested in the robotic programming. Then I became a "host" on the official LEGO Mindstorms forum.

But like you said I'm also a big fan of Star Wars, so when TLC released Star Wars Sets I started to buy them as a collector.

This was the first step into my "mad project" which is the LSW Project.

**BJ**: So what exactly is this LSW project ? **BB**: Well, it's quite simple, I can explain it in few words: "LSW Project" stands for "LEGO Star Wars Project" and consists of remaking the George Lucas's film "Star Wars Episode 4: A New Hope" with LEGO bricks in stop motion.

My LSW brickfilm will be as similar as possible to the original movie (same duration, same shots, etc...)

BJ: Are you kidding me? You are really making "StarWars: A New Hope" as a brickfilm? How did this crazy idea come to your mind?
BB: I was quite impressed by the "StarLEGO" film made by Torps production (http://www.torps.com/starlego.html) the first time I saw it. But I was a bit disappointed because the starships were not built of LEGO (it was the original shot of StarWars). So, at the office, near the coffee machine, I said to a colleague that I could remake the shots of the starships in LEGO. That was quite of a bet, a challenge! Then I built the Star Destroyer, shot the scenes and showed them to my

colleague. At this moment he says to me "Great! Now you have to finish the film!" It was clear he was joking, but I just reply, "Ok I will, just be patient."

**BJ:** How long have you spent on this project so far?

**BB:** Oh! A lot of time... I don't know exactly. I'll work on this project for 4 years I think, and plan to finish in 2008.

For example, I know that I worked more than 100 hours on my *Millennium Falcon* MOC.

**BJ:** Let us have a look at your work. What kind of material and software do you use?

**BB:** Since I was a child I always dreamt about making a stop motion film. But the technology was not very accessible when I was young. Now with a webcam you can easily make brickfilms (a "brickfilm" is a film in animation frame by frame made with LEGO bricks). Moreover you can now find on the internet free software like Anasazi (http://www.animateclay. com/modules.php?op=modload&name =Sections&file=index&req=viewarticle& artid=24&page=1).

It's software that drives your webcam to make stop motion films with special

features like the "onion skin" feature. The "onion skin" allows you to see the current frame blended with the previous one, in order to control the smoothness of the animation.

**BJ:** For such a project, you must have a huge collection of bricks in order to recreate all these scenes.

**BB**: No, not really... well my collection is what a respectable AFOL should have. :-) In fact once I film all the shots on a specific set, I destroy the decor to reuse the bricks. But before that, I make the MLCAD file in case I would need to film again some shots.

**BJ:** Have you ever made others brickfilms or is LSW a unique project? **BB:** Well... maybe I should say yes, because I made some little films just for fun, like a musical video with some battle droids or a very short film (made with a friend) with the Joe Vig character (http://www.brickfilms.com/films.php?mode=basic&query=banban&basicText=banban&a=0). and Joe Vig video :http://www.lswproject.com/download/pizza\_fly.avi

**BJ**: Do you use official LEGO models or have you created some customs models? **BB**: Of course I use the Star Wars minifigs when they exist, and try to create the ones I missed (like the jawas). Don't forget that some shots of my LSW project were done several years ago, when not all the Star Wars minifigs were released.

For the models (ships and decors), I don't use the official ones, because I think they are too small (like the Millenium Falcon), or not detailed enough. In this project, a part of the pleasure is to create Star Wars MOCs, and not only filming.







Banban cleaning his model before a shoot

#### "She may not look like much, but she's got it where it counts."

Unlike Han Solo's quote above, Banban's *Millenium Falcon* model is a beautiful rendition of the classic spacecraft and was made much more movie accurate for filming. Here's a closer look!

But usually I don't build the decor entirely. I work like a set designer in the cinema industry. I build only the visible parts on the screen. For the vehicles, I usually build a version for external shots (without detailing the interior), and I build a totally new set for the interior shots, because it's easier to film.

**BJ:** So you are a custom builder. What theme are you interested in, aside from StarWars? BB: Yes of course! I really do like to make MOCs! In fact I'm also interested in LEGO train, microscale, castle, and Joe Vig vignette... and this is bad for the productivity of my LSW project, because I spend a lot of time to make all these MOCs.

BJ: Are there plans to do another feature-length brickfilm?

**BB**: Yes I do. I would like to make another brickfilm when I would have finish my LSW project, but this time it will be a totally original film based on a famous english book (sorry I don't want to say more here, I prefer to keep it secret for now). The challenge will be more, more difficult, since I will have to write a script with dialogues, choose the locations and the angles of view of the camera, and make the entire sound track (dialogues, sound fx and music).

But I don't think I will be able to start this brickfilm before 2009.

**BJ:** Thanks for talking to us about your movie! **BB:** It was a pleasure.

Banban's Brickshelf gallery can be foound here: http://www.brickshelf.com/cgi-bin/gallery.cgi?m=Banban

Banban's LSW website is: http://www.lswproject.com/





#### BrickJournal: Tell us about yourself.

**Mark Larson: I** live in Indiana with my partner and three large dogs. Large dogs. Rottweiler, Yellow lab, German Shepard, all girls, 80, 70 & 60 lbs. respectively. I am a graphic & web designer, an artist and an actor. Which means I make no money. My artwork & design portfolio can be seen at scorpioart.com and my ankle can occasionally be seen on the TV series Prison Break.

#### BJ: When did you start building?

ML: I started building before I started walking. I can't remember life without LEGO. I've always been a complete slob as a person but I always had my LEGO separated by size, shape & color: Matchstick Men style.

#### BJ: When did you start BrickZone.net?

**ML:** I started BrickZone.net in January of 2006. I had a site for a little while called BrickSolutions that was just an extension of my professional website. It had tips on how to sort and clean and how to solve geometric conundrums in LEGO. I never promoted it and I never updated it. There was a set of the week box that stayed 6383 Public Works the entire time the site was up. I wanted to eventually have enough articles to publish a book but then *The Unofficial LEGO Guide* by Allan Bedford came out and it was better than what I was putting together, I gave up on it.

#### BJ: What's you favorite theme?

**ML:** Galidor. What if I was serious? Would you still think I was worth interviewing? I wouldn't. What theme don't I like lately? I was annoyed for a while with juniorization and the bley fiasco, but what's to complain about now? The LEGO company has really been producing great lines lately. I love the Vikings and the Creator sets, Star Wars of course. I'm obsessed

# Mark Larson: LEGO Storyteller

*Earlier this year, the online series "Fabuland Housewives" launched on www.Brickzone.net.* 

BrickJournal chatted with the creator about his site and his series, and got a little more...

Article by Joe Meno Photos by Mark Larson



Officer Brody Bulldog encounter Fenix Fox and Peyton Pig



Betsy Bunny, Doctor Dalton Dog, and Randy Rabbit look over a fallen stranger



Mayor Langston Lion and Marcus Mouse discuss the front page of The Fabuland Gazette...and why the mayor is not on it

with Exo-Force for no good reason. It's like there's subliminal advertising for it or an addictive substance lining the manual of each set. I don't know, maybe it's the fact that there's a story line or maybe I like blue hairpieces. Who knows? Exo-Force=cool!

**BJ**:You started a storyline on your website called *Fabuland Housewives* – what inspired you to do this?

ML: What didn't inspire me to do this? I promise not to answer every question with an opposing question. I won't pretend this is going to be a short story. When I was little my sister and I watched Days of our Lives with our baby sitter. I had a card table set up in my room that had my Fabuland town on it along with the 6392 Airport and the 6375 Exxon station, of course. So, I decided that the town was Days of our Fabuland and I would tell my sister the stories that were going on in Fabuland and she would of course say, "All right so the rabbit is Bo Brady, right?" and I'd get all defensive like I'd thought of it all by myself. The town was quite brilliant, I have a picture of it somewhere I'll put up on BrickZone eventually.

There's a very convenient multi-colored house built in the middle of the road to save space. Anyway, to make a long story longer, the same still holds true today. I've completely ripped off *Desperate Housewives* and the entire story is the exact same. No, that's not true. I don't even watch Desperate Housewives so I wouldn't know what to rip off. But over the years of sorting and storing I never wanted to get rid of the Fabuland pieces and they took up too much room in my sorting system, so I've kept them out on display shelves. When my sister came over to my first apartment she went straight to them and asked "Is this Fabuland?" and I said, "yes." And then she asked "Which one was the prostitute?" Yes, as a child I watched Soap Operas and then played with LEGOs, playing that a little plastic lamb was a prostitute. Who needed football? I was quite well adjusted.

Chapter 2: Modern day. At some point in time I decided that there were still stories to be told in Fabuland that didn't find their origins in Salem. Every time we'd move and I'd set them back up or build something new, I'd find a new part of the story. It just happened. Anyway, the stories were more complex and mature than what I was ripping off of *Days of Our Lives* at the age of nine. And then the sick part: I started buying bulk lots of Fabuland on eBay to create more Fabuland creations. I'm pushing thirty here. I've come to terms with this adult obsession with a short-lived spin-off of regular LEGO that was meant to introduce girls to the market, but I don't exactly bring it up at dinner parties. So, I've got this story in my head, and it kept building and I always knew I would put it online. I'm a huge fan of the Brick Testament and the Adventures of the Unlikely Society which unfortunately disappeared because that was one of the funniest things I've ever seen. I knew people enjoyed reading stories people had put together with LEGO, so I hoped people would enjoy mine.

#### BJ: What kind of planning does it take to do a series?

**ML:** Some would be nice. I need to budget my time a little better, but it goes a little like this. I have the arc of the first "season" written loosely in a word doc. Then I separate the action into episodes. Once I have the episodes written I try to come up with a shot list. Also, I make a list of what sets need to be built in order to tell the next portion of the story. Then I photograph each shot, watermark and airbrush them. Then I put them in an html template and add the dialogue.

BJ: How long does it take to build and photograph the 'episodes?'

**ML:** The first episode took me about 2 weeks of eight hour days. Now obviously I didn't do that all in a row. It was spread out over a couple of months. What's nice about the work I put into the episode is that most of the busy work is done. The major sets are built, the story arc is finished and I have a great HTML template for each episode.

#### BJ: What's the most enjoyable aspect of this?

**ML:** The best part about this is how much of the story fleshes out while I'm filming because I don't think of it until I have the situation physically in front of me. For example, the first episode of Housewives ends with a character being murdered. The victim is holding something when the murder happens and I didn't think of what happened to that object after the murder until I saw the scene in front of me. I thought, "What would happen if we couldn't find that for a while? Hmmm." Then I scratched my chin and made a very pensive face. I find it's a great way to flesh out stories. I do a lot of creative writing and having the situation in front of you physically, changes the way you see it in your head and takes you in directions you wouldn't have thought of otherwise.

Also, Fabuland has always had a special place in my heart, but the "simple" aspect of building the sets with the large pieces is actually challenging because the pieces are pretty limiting. I really enjoy putting together a cool-looking set with those limiting pieces. I spend a good amount of time surfing my own web site looking at the creations. I enjoy that almost as much as I enjoy looking at a mirror...

#### BJ: What else do you build? And what's on the horizon?

ML: I build whatever pops into my head. Then, of course it turns out completely different, but to me that's the fun of it. I've done some custom Star Wars ships, which can be seen in the fbtb customs section or my brickshelf gallery. I built a big Star Destroyer before the official one came out. I used to sit there with the Star Wars Guide to Vehicles book and try to build things straight from the schematics. Cool book. I have always loved Town building. It's not unlike an addiction in that there's always another building to create. Different and better than the last one. I love my little town and can't wait to share it's growth with the AFOL community. Recently, I've started building castles. I have another story that I've been writing since I was in college, The Kingdom of the Lakes. When I moved to Chicago it was a huge transition in my life for many reasons, but it was also my re-introduction to LEGO. I didn't bring my LEGOs with me to college because I didn't want them to get lost or stolen or God forbid played with. No one plays with my LEGOs. Seriously. I've dated guys who think it's the coolest thing that I still "play" with LEGO (we know it's not play, but art, of which ABS is our medium, right?) and they ask if they can come over and play with LEGOs, how fun blah blah. I never liked those guys. Jerks. Anyway, where was I? Oh right' In college when I moved into an

apartment I lived with a bunch of frat guys and would come in with LEGO sets hidden in my bag. It was really hard to sneak in the bigger sets, especially since all I had was a backpack. So, when I moved to Chicago I worked as a bouncer at a bar, I worked four hours a day between 10pm and 2am. THat left plenty of time to catch up on my LEGO work. I had my entire collection with me. The bar was really slow after 9/11 and I ended up going home early a lot. Literally, some weeks I worked 10 hours. So, I took my story and made every character out of LEGO minifigs. Luckily for me the Harry Potter line had just come out and I had plenty to work with. Anyway, this story is an epic and I hope to begin publishing the chapters beginning in the fall. I just recently began building the settings and Fabuland Housewives has kind of taken over. But Housewives is more of practice for my brainchild: The Kingdom of the Lakes. It will probably come out slowly. It's a six-part story that involves a lot of "Oh, I should have seen that coming, but I didn't!" I hope anyway.

**BJ**:What do you like to do outside the hobby? **ML**: Play with my dogs, work out, social-



Gavin Gorilla is paranoid about the furniture attacking him...or is there more to it?



Randy Rabbit , Betsy Bunny, Doctor Paco Panda, and Doctor Dalton Dog, check over the fallen stranger,,,but who is he?



Marcus Mouse and Lily Lamb share a quiet moment...or do they?

ize. My partner and I live right outside Chicago in Indiana. It's a small beach community and only has about 700 people. I get into the city a lot for auditions and hanging out with friends. I miss the city, but I love the country. We go to the beach a lot. I'm writing a musical. I paint. I do medical research. No, I don't do medical research. That's a joke. I write jokes.

You can read the latest episode of FH at http://www.brickzone.net/fabuland\_housewives.html:

Building: Military

# The B-1B Lancer: A Study in Brick

Photo courtesy of the US Air Force

Building in scale is a challenge, but a very rewarding one with patience and planning. BrickJournal asked a military builder about how he built his scale aircraft. So he built one for us.

Article, art and models by Bryce Rollins

Renders by Geoff Gray

I can't remember a time when there weren't LEGOs in my childhood. I'm probably not alone in this, but my first LEGO pieces were hand-me-downs from my older sister – just an assorted collection of multicolored parts that I kept in a miniature golf bag. My parents may have wanted me to be some sort of proto-Tiger Woods but to this day I'll see a golf bag and start thinking about how many parts I could fit in there. I would dump these parts out of the bag, stack a random part on top of another, step on particularly jagged pieces and pop the occasional small part in my mouth. Again, I'm probably not alone in this but let me defend myself by saying that A) I was like 5 at the time and B) Those choking hazard warnings weren't as common as they are nowadays.

The first set that I can remember that was totally mine was the classic yellow castle. There may have been a police car that predated that set, but I can remember discounting that model as the minifig cop that came with the car did not actually fit in the vehicle. Even back then I had a problem with scale - more on this later. I never really built any other model out of those yellow parts or mixed them in with the rest of my collection, and every time I wanted to play with the castle I would have to build it and when I was finished it would be taken apart and put back into its box. It was some kind of building ritual learned by rote.

I really didn't start building my own models until I became old enough and tall enough to see what my uncle was building.

He would spend months turning sheet plastic, light grey paint and hallucinogenic model glue <sup>TM</sup> into scratch built models of US Navy ships. They were good. Really, really good. The only detail missing on any of his ships would be the crew because it's too hard painting the eyebrows on a figure that's less than a millimeter tall. When he was finished with a model he would put them in display cases and place them on the higher shelves in his room, hence the height requirement to view them. He would also (and still does) build these ships in an uncommon 1:311 scale so I suppose that there is a precedent for odd scales in my family. More on this later.

I didn't have sheet plastic or ex-acto blades or mind altering plastic glue but I did have that golf bag full of LEGOs, so I did what any self-respecting young LEGO fan would – I proceeded to build horrendously multicolored models out of the meager parts at my disposal. I didn't have enough parts to build ships like my uncle did so I somehow decided upon airplanes as my subjects of choice. They really didn't resemble the real world article that they were patterned after but they were swooshable and playable and more importantly, they were mine. My MOCs remained at this level of sophistication until around my 10<sup>th</sup> birthday, but by then I was hooked. I converted every favor/birthday/Christmas that I could into LEGO sets to expand my collection, and those friends and relatives that I couldn't cajole into funding my building empire usually ended up giving me the sort of aircraft reference books favored by military historians and adolescent aircraft engineers.

It was while I was flipping though one of these books that I came across an illustration that fueled the second of my LEGO epiphanies (By my count I've had 3 LEGO epiphanies in my life. The first occurred when I stopped simply following the in box creations and began to make my own models. The third came when I discovered LDRAW and MLCAD and began to make digital MOCs out of virtual bricks.). The illustration was a cut-away line drawing of a F-14 Tomcat, and as I sat there looking at it I thought to myself that what I needed was a system of building – after all it said on the boxes that LEGO was a Building System – what I needed was a Scale.

Had I been thinking clearly at the time, I would have chosen a nice, easy to calculate, logical scale like 1 foot per stud. Had I been leaning that day towards a European bent, I could have selected 3 studs per meter and been equally happy. What I did end up doing though, was come up with a scale based upon the height of the minifigure. While this at first glance might seem like a good starting point (at least it seemed quite logical to me at the time), if you dig out a standard minifig and think about it, you'll realize that if we were built like them, we'd be about 6 feet tall, which is still somewhat accurate, but we would have shoulders 4 and a half feet wide and a head the size of a beach ball, which most people would agree is a little unusual. In any case the scale that I ended up with comes to 3.06 LEGO studs per meter, which is close enough to 1 foot per stud that sometimes wonder why I didn't go for that in the first place. Needless to say, I still use this unwieldy scale for my models to this day, and with each additional model I build there is an ever shrinking chance that I'll ever switch to something that makes more sense.

Armed with my doomsday scale and a pocket calculator, I set out to build my Tomcat. I still have it. It's gone through 3 major redesigns, countless minor alterations, and several crashes, both simulated and actual. Every once in a while I'll unearth it from hiding, tinker with it as much as my meager parts collection will allow, lament at its rainbow colored nature and hide it back in my closet.

#### **Building the B-1B Lancer**

The first thing I do when building a new MOC is to decide what exactly it is I want to model. Often this is the most difficult part of the whole process. Looking through various reference sources – books, internet sites, etc. shows that some aircraft convert into bricks more readily than others. Naturally I tend to chose aircraft that I'm more familiar with but this isn't always the case; sometimes I intentionally chose an aircraft that is new to me so I can learn more about it during the building process.

In this case, I wanted to build something a little more substantial than your average fighter-bomber. Since I'm a little more familiar with American aircraft than with those of the rest of the world, I think that I'll limit my choices to US planes. I tend to model modern aircraft more than retired ones, so a quick look at in-service US aircraft gives us a list of finalists. After eliminating the C-5 Galaxy and C-17 Globemaster cargo aircraft (Too bulky and large internal spaces are a headache), the KC-135 and KC-10 Tanker aircraft (Useful but not glamorous enough) and the various AWACS and Elint 707 types, I've settled upon the B-1B Lancer Bomber as my subject.

The next step in my building process is usually the longest single stage, and it doesn't even require that I load up MLCAD. Here I try to collect as many visual references on the aircraft as possible. Plastic scale modeling websites tend to have some outstanding pictures of areas of the aircraft that are hard to see in real life,

#### A Short History of the B-1

(from www.faqs.org)

What became the B-1 bomber was the result of cold war concerns in the late 1950s. The first bomber was a Mach 3 bomber, the B-70 Valkyrie, however it was rendered obsolete by technological advances in air defences and ballistic missiles. However, the Air Force remained interested and began various studies, with the Advanced Manned Precision Strategic Aircraft becoming the precursor to the B-1.

By the time all four prototypes were built, however, the B-1 seemed all but dead. The 1970s saw a push for disarmament, and production of the B-1 was cancelled by US President Jimmy Carter on 30 June 1977. The price of the B-1 had been creeping upward, and Carter believed that cruise missiles would be a cheaper nuclear deterrent.

A resurgence of tensions with the Soviets and other factors led to the election of Ronald Reagan as US president in 1980. Reagan was committed to a major arms buildup, and this led to the resurrection of the B-1 as the "B-1B", which was promoted as a cruise-missile carrier though it still retained its freefall nuclear bombing capability. The original B-1 prototypes were retroactively given the designation "B-1A". Reagan announced the decision to go ahead with the B-1B in October 1981, and formal contracts for a hundred production machines were finalized on 20 January 1982.

The first production machine performed its initial flight on 18 October 1984, with initial service delivery on 29 June 1985. The last of the hundred was delivered by the end of the decade, with five bomb wings operating the type. Although formally named the "Lancer", the B-1B is more generally known as the "Bone", from "B-One". while military aviation sites tend to have lots of photos of the genuine article. I'll also read up a little on the history, development and design of the subject as this sometimes helps to identify unusual or unique features that could find their way into the MOC. The most important thing I need at this stage is an accurate 3 view schematic of the subject as I'll be using this as the primary blueprint for the model. A quick look at the resources I've collected point out some interesting features of the Bone (Real Nickname. B-1 = B-one = Bone) that I'll have to include in my model. The Lancer has large Variable Geometry Wings that may prove tricky, it features some interesting wing/body blending that could turn out to be either quite fun to build or a major headache, and I'll have to figure out a way to fit in all 3 bomb bays without them getting in the way of anything else, but there's nothing right off the bat that makes me think that the MOC is unbuildable

Using my unfortunate 3.06 studs per meter scale, I'll now calculate the various dimensions of the aircraft and convert them into LEGO units. Typically I'll measure out the wingspan, length, fuselage width, tailplane span and the length of the nose to the canopy. Depending on the aircraft in question I'll also take the measurements of other prominent features that I can use as proportional references. Looking as the Lancer I've measured out the length of the engine nacelles, the length of the fuselage from the radome to the nacelles, the width between the engine pods, and the length from the end of the nacelles to the tailcone. Taking all of these measurements this gives me a total length of 137 units and a wingspan of 128. This is enough to get me started with the actual building process.

Now I'll finally open up MLCAD and lay out the framework for my model. My first step is to build up a 137 by 128 grid to properly visualize the size of the B-1. Having done this I'll begin to map out with plates the shape of the aircraft as viewed from above. At this stage nothing is concrete, and I'll probably try out 2 or 3 variations until I find one that I'm happy with. Since the B-1 has a variable geometry wing, I'll try out a few different wing designs and figure out where to place the wing pivot so that it will look accurate through the whole range of its sweep settings. While I'm at it, I'll also build in a few versions of the tailplanes so that the top profile looks complete. Both the wings and the tailplanes will be built as separate files so I can try out various designs and plug them into the larger master plan model. Most of the functional units and interesting features that I researched before get designed in at this point, so with the Lancer, I'll determine the size and position of the 3 bomb bays and determine the placement of the crew stations. (*See illustration below*)

Sometimes I'll build just a small section of an aircraft that catches my eye as something that will convert into LEGO well. This often snowballs and I'll end up building an entire



now.

If it sounds like I wasn't exactly looking forward to building the cockpit, it's because the cockpit, and even more specifically, the canopy is, consistently, the easiest and the hardest single thing on my models to build. They are "easy" primarily because there are

conceptual MLCAD doodle, while other times, these brainstorms will sit idly on my hard drive for months before I get around to building the rest of the MOC. With the B-1B I've built the engine nacelles long before the construction of the rest of the airframe. Here I've lucked out a little as the nacelles on the Lancer form their own structural unit and attach easily to the flat bottom of the aircraft, so I won't have any major headaches adding these to the main fuselage model.
Next I'll take a look at the model from the side profile. Using the top plan view as a

aircraft out of something that started as a

side profile. Using the top plan view as a base, I'll mark out with plates the shape of the fuselage. Unlike the last stage I won't rely on exact measurements but more on the general look of the model to this point. I'll also design the B-1's Vertical Stabilizer at this point since it is very important to getting the side view of the MOC right, and since I've already built the tailplanes, I'll attach these to the vertstab now. With smaller sized aircraft I can usually begin filling in the empty spaces to finish the model, but with something the size and complexity of the Lancer, I've got quite a bit of work to do before that happens. (*See illustration next page*)

Now that I have a rough skeleton of the MOC, I can begin concentrating on smaller sections to flesh out the aircraft. Since the vertstab and the tailplanes have just been placed, and the engine nacelles were one of the first subassemblies added to the MOC, It looks like I'll have to get around to building the cockpit so few LEGO parts that can be used to recreate accurate canopies that on most models I am limited to 1 or 2 real choices, and it is a simple matter of trial and error to come up with the best looking solution (In fact, when I'm considering whether or not to build a new aircraft, the first thing I always try to come up with is what part I plan to use for the canopy. After that the rest is easy). Canopies are "hard" in that they can make or break an entire model. In the first build of my AV-8B Harrier II MOC, I had used the canopy from the first Jedi Starfighter kit as it matched the scale of the real harrier's smallish cockpit better than any alternative part, but upon completion of the entire MOC, I was so unhappy with the overall look that I considered deleting the entire aircraft. Fortunately I did not, and after a week long cool off period, I came back and by swapping out the offending part for 2 replacements, the Harrier went from a disappointing attempt to one of my favorite MOCs in my collection.



After checking some resource photos of the Lancer and doing a quick catalog of the potential canopy parts, I came to the conclusion that, while there was no ideal solution, using 2 side by side 6x4x2 windscreens was the best overall compromise. With the Lancer's forward fuselage measuring 8 studs wide, there was no problem fitting in the 4 crewmember minifigures and their crew stations, so no tricky offset building will be required. I did however use SNOT and a half stud offset to place the Lancer's SMCS winglets flush with the rest of the forward fuselage, and old style hinge plates were used to attach the SNOTed radome underside.

With the cockpit and radome section more or less complete, I'll focus on the other end of the aircraft. The tail section of the B-1B has some interesting features that make for unorthodox building. Since the triangular cross section near the engine nacelles eventually gives way to a *(continued)* 

# **CyberCare Robotics**

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... visit http://www.cybercare-robotics.org/ for pricing and full details (mention The Brick Journal and receive a 10% discount) blunt cylindrical tailcone, I've decided to use SNOT plating to recreate the gradual sloping. Most of my larger aircraft use this technique in the tail section due to their tadpole shaped fuselages dictated by aerodynamics.

By this point in the construction process, all of the smaller submodels such as the nacelles, the cockpit and the tail surfaces have been cut and pasted into a master model file and the fuselage is beginning to take its final shape. Finalized versions of the wings are imported at this stage to aid with the fuselage/wing integration. While I would have liked to incorporate some flaps into the Bone's wings, since the actual flaps are of a complex Fowler type arrangement, (in which the bottom portion of the wing slides out past their normal trailing edge position to form the flap) I would have to thicken both the wing and the wing root to recreate this accurately, I made the decision to leave the flaps out. The attachment of the wings was complicated slightly be the position of the second bomb bay, but heavy usage of plates running across the fuselage gave me a wing box that I felt could hold up to the strain. Since much of the wing is tucked into the fuselage during swept wing flight, many tiles were used to form the plate layer just below the wing's sweep path.

With the wings in place, one of the last stages remaining is to build in the wing body blending. Early in the design process, I had planned to use SNOT techniques similar to the tailcone section for this area, but looking at the space that needs to be covered, I just don't think that such a plan will be sturdy enough to support the spine of the model. Using slope bricks also allows me to keep the bomb bays as large as possible, which will come in handy if I ever decide to bomb up my MOC. With the wing body blending in place, the last major component of the model is finished and all that remains to be done is some minor detail work.

![](_page_33_Figure_3.jpeg)

At this point, I'll often take a break from building for a day or two. This serves two purposes; first, it allows me to look at the model as a whole from a fresh perspective in order to spot any glaring errors I may have made, and secondly, it allows me to look over my resources again to determine what sort of finishing details should find their way onto the MOC. As with most aircraft designed with some measure of stealth in mind, the Lancer has relatively few blade type antennas jutting so a few 1x1 tiles and 2x2 flag pieces are all that are needed to represent these. From an online walkaround, I've learned that the B-1 has a series of vortex generators tucked away under the massive tailplanes, and while they don't call much attention to themselves, they are relatively unique, so I'll add these in as well. The tail section also gets a few 1x1 round plates to stand in for various ECCM fairings associated with the bomber's defensive avionics systems.

Since I designed the B-1B's vertical stabilizer as a 2 stud wide structure, I can build in a USAF Tailcode as a last finishing touch. An online reference tells me that there are only 2 bases in the United States that operate the Lancer, and I choose the "DY" tail code to represent the 7<sup>th</sup> Bomb Wing out of Dyess AFB in Texas. With the addition of the tailcode, the first version of the MOC is more or less complete. There will no doubt be later changes made to the model, but for now, I'm happy with the overall outcome of the model.

Bryce Rollins' past jobs include reptile cage cleaner, zoology tutor and network librarian. He currently splits his time between functioning as an office helper monkey and coaching high school basketball.

You can find his Brickshelf gallery at: http://www.brickshelf.com/cgi-bin/gallery.cgi?m=Bryce2501

![](_page_34_Picture_0.jpeg)

137 studs 126 studs maximum, 75 studs swept 1973 Pieces: Length: Width:

The variable geometry wings of the model are 55 studs wide, 19 studs long and 3 plates tall at their highest point.

> bers, various blade type antennas and the B-1B's massive countermeasure dispenser just behind the crew module. markings, crew stations for all 4 minifigure crewmem-The front fuselage section includes In-Flight Refueling

The SMCS (structural mode control half-stud offset and SNOTed 1 x 2 system) foreplane is built with a hinge bricks.

studs wide internally and 15 plates deep.

The three bomb bays are 16 studs long, 6

TICK JOULTRA

Models and instructions are in no way sponsored, endorsed or authorized by either The LEGO Group or United States Air Force. Copyright 2006 Bryce Rollins. Art Rendered by Geoff Gray.

The models depicted is an original interpretation of the B-1 Lancer.

![](_page_34_Picture_8.jpeg)

Wing out of Dyess AFB, Texas. The "DY" tailcode is from the 7th Bomb

built with SNOT techniques. The tailcone section was

The podded engine nacelles were the first model component built and are some 33 studs long and 9 studs wide.

## Building: Sculpture

![](_page_35_Picture_1.jpeg)

# LEGO Character Building

If you want to build a sculpture of a recognized subject, there are some things to be considered. BrickJournal asked a LEGO sculptor for her insights.

Article and Photos by Anne Henmi

#### I was thinking about what type of tools you need to build LEGO sculptures.

As it turns out, you really only need one thing: LEGO bricks. That's not true--you need several other things to help you: an idea of what you want to build, several sheets of blank paper, a drawing or small model of what you want to build, a good imagination, and a lot of patience.

#### **Materials and Tools**

You don't need a computer program to build sculptures, but you need to have an idea of what it looks like. It helps to have a real life model because it's easier to build something three dimensional from something three dimensional (when I build mosaics, I tend to look more at pictures than models).

There are some serious considerations you need to make before working on a sculpture, and the biggest thing is availability of LEGO pieces in a particular color. As you know, LEGO can get expensive--especially when you try to build out of a rare color like dark red. The other thing to remember is sometimes the rare colors will not have common pieces such as a 1 x 3 brick and you have to improvise, and this can affect your sculpture structurely.

Make sure you have a lot of bricks and

plates--nothing modified or printed, just basic. You'd be amazed at how much your inner (and outer) child remembers how to build things with just the bricks and plates. The plates allow detail in smaller areas than the bricks do.

The other thing that helps me a lot is having a lot of different hinges. Hinges come in a variety of shapes and sizes. They include bricks that have a top that moves to a 90 degree angle, and plates that give you a variety of angles. Hinges can give you angles that you don't ordinarily use. For example, for my Snoopy sculpture, I used two different types of hinges to get the eyes to look the way I wanted.

You also need to have a lot of patience. I spend a lot of time building prototypes of models and rebuilding. I don't find that sculptures happen overnight, and some of my projects have taken six months. For example, the dragon I'm working on is currently in its second incarnation and past six months of work. Sometimes things come quick to you--other times, you have to work on something else so you don't get a LEGO builder's block like a writer's block.
#### **Building Techniques**

One of the building techniques I try to do is not worry about studs showing. Many people try to get the smoothness by using tiles and slopes. I think that takes away from the whole point of LEGO sculptures unless you are doing something really creative with building techniques.

For example, I have used an uncommon slope piece for Classic Albert's (Go Gators!) teeth at a strange angle to give his fierce look. I also used another slope piece to give his tail texture and look like scales.

Another example is the wedding Snoopy set I made for some friends. Both the noses use a turntable, and the bride's eyelashes use the levers you usually see in Space sets.

#### **Building Strategy**

Let's use a very straightforward example for creating LEGO sculptures. Take the maneki neko (beckoning cat, or lucky cat you usually see in Japanese stores and restaurants). Fortunately, there are a lot of Japanese stores in the Bay Area so I was able to pick up a maneki neko as a model. This provides a very helpful view of the back and sides of the cat, as most photographs are done from the front. I do also recommend finding as many pictures and photographs that you can, because it will give you other ideas in adding your own personal touch to your sculptures.

In your sculptures, you can add or negate as much detail as you need. Abstraction is good for conveying an idea or image without getting every little detail in. Comic artists, for example, use a lot of abstraction. For example, even though you can't see every little hair on Snoopy or Garfield, it's quite clear that they are a dog and a cat respectively.

The same thing regarding abstraction applies for LEGO building. For the maneki neko, he doesn't have the usually orange and black spots as you see on the real life models. This is because I feel it would take away from the rest and be a distraction. If I made him bigger than the 6-8 inches high he is, I would have room for more detail. The same with the dog sculptures I make that are a few inches high, they tend to be more abstract.



Below, left to right: Maneki neko, prototype sculpture, final model











Anne's first dragon (above) and current version (below)





## My most recent attempt at a sculpture is a dragon.

The good thing about a dragon is there is no "right" way to make him. There are many different types of dragons--Eastern, Western, Wyverns, etc. It opens you to a lot of various examples through pictures, models, stuffed animals, toys, etc.

I was trying to make things on the opposite extreme. The dragon sculpture I was working on was going to be three feet tall. With smaller sculptures, you really don't need to worry about structural integrity. With large sculptures (basically anything over 2 feet high), you need to make sure you have the support where you need it.

Originally, the dragon was going to be dark red and standing on his back legs. With wings, he would have needed a strong tail to stabilize him. Unfortunately, the tail wasn't strong enough to stabilize the entire model without wings and ka-boom! LEGO everywhere. My second attempt will be more stable with him standing on all fours and in green. The reasons for the two changes are because dark red is expensive and green has significantly more parts available.

Finally, make sure you have someone else give you an honest opinion of how your sculpture looks. What may look right to you may not be proportionally correct to someone else (and don't take it personally).

#### **Personal Touches**

Most of LEGO builders aren't just sculptors--they usually have a theme they enjoy. My favorite LEGO theme is Classic Space. Some of my sculptures reflect that, but I also branch out into other themes to explore my own creativity.

I have tried to build mechs in the past, and that's really hard. Not only do you need to have the movement of a toy or Gundam model, you also need to have stability. I found for me that it was a good exercise in expanding what I can use for my sculptures, but not something I necessarily enjoy building. The other themes I am experimenting with are trains and castles (as you can see from the dragon).

With everything you build, be it a successful model or not, you acquire building skills you can use--no matter what your next project is. When I was working on my F/A-18, it became more of a sculpture than a minifig size fighter plane. This idea came about by looking at Dan Jassim's excellent space theme building style.

Anne Henmi is the LEGO Mason at BRICKBOX. You can see her MOCs at http://www.brickbox.com, and follow her building blog at http://www.brickbox.com/works\_in\_progress.



# The Art and Science of Writing a LEGO® Book (And how you can write one tool)

# **Building: Books**

#### Article and Art by Allan Bedford

You might look at the colorful fish to the right and wonder what's so special about this LEGO model? After all, it's a pretty simple little fish built with just a handful of parts; and fairly common parts at that. So perhaps there's nothing really special about the model itself but there is something amazing about the image of the model. The image shown here is entirely computer generated. For those who've seen computergenerated movies like Finding Nemo this might not seem all that spectacular. And they'd be right. But what if I told you that this image was rendered entirely on a home computer and that it took less than 30 seconds to do so? What if I also told you that you can use the same techniques used to create the image of this fish model to write your own LEGO book?

Let's back up. This article is called 'The Art and Science of Writing a LEGO Book'. Before I talk about the art, I want to first introduce you to some of the science. I mentioned that the fish image above isn't all that awe-inspiring when you compare it to some of the stunning visuals seen in a movie like Finding Nemo. It's important to point out that a movie like that requires incredible amounts of computing power to render those realistic-looking scenes; much more power than the average person has on their home computer. Rendering is the process by which a computer simulates light in order to cause reflections and shadows on whatever shapes you give it. Look at the image of the fish above. See the underside of the 1×2 inverted yellow slopes that make up part of the tail? They appear to have the roughened surface texture of real LEGO slopes. But what you're really seeing are tiny shadows drawn by the rendering software that trick your mind into seeing texture.

Wait a minute! How did we get to rendering the fish when we haven't even talked about creating the model yet? Let's back up yet again. Rendering is indeed the last step you undertake when creating computer generated LEGO models. The first step is to actually 'build' the model in a computer program that allows you to add pieces one at a time and mark each of the step of the process. There are a couple of well-known programs that allow you to do this. One is called MLCad, while the one used to create the fish model for this article is called LeoCAD. A screenshot of LeoCAD in action is shown at right.

You can see in the screenshot that I'm at step 5 of the fish model. As noted above, these visual editing programs (also known as 'CAD' software - for Computer Assisted Design) allow you to mark each step of the building process used to later create a set of instructions. It's worth noting how truly amazing it is that someone can run software like this on any modern home computer. Not that long ago this type of 3-dimensional modeling was available only to big corporations like the automotive industry and aircraft designers.



# *Links to programs mentioned in this article:*

#### MLCad

http://www.lm-software.com/mlcad/

LeoCAD http://www.leocad.org/

#### LPub

http://www.users.qwest.net/ ~kclague/LPub/

#### L3P

http://www.hassings.dk/l3/l3p.html

#### **POV-Ray**

http://www.povray.org/

Allan Bedford is from Stratford, Ontario, Canada. He is the author of The Unofficial LEGO® Builder's Guide. Information about the book can be found on his website: www.apotome.com. It's great to be able to create a virtual model like the one shown above but it's not much use unless someone else can use your instructions to build their own version. And that's perhaps the biggest leap forward that this software has brought to the science of writing about the LEGO hobby. Keep in mind that people have been writing about their hobbies for years. Books have been written about hiking, photography, model rocketry, quilting, model car building, and many more. Until just recently though, there was very little written about the LEGO hobby in comparison to other hobbies. True, many sets of instructions had been created to accompany official LEGO sets and there were Idea books published as far back as the late 1960s. Those instructions, of course, were created by a company with the resources to hire professional graphic artists and designers. How exactly those early instructions were created is not what this article is about. Suffice to say that a single person didn't create them. Today things are different. Thanks to the advances in the power of home computers and the creation of software like LeoCAD it's now possible for one person to write not only a set of LEGO instructions but even an entire book on the topic.

Let's go back to the fish model for a minute. In order to write this article I also had to create the model. You saw that I accomplished that task using CAD software. To include the fish model in a book I'd have to do more than create the realistic looking render like the one at the beginning of the article. I'd also have to include a series of step-by-step instructions so that readers could build their own version of this colorful character.

I talked earlier about how the first image of the fish was 'rendered' using some computer software. In fact, it was created using three key pieces of software. First, the fish model (that exited LeoCAD as nothing more than a simple text file) was opened in a program called LPub. This software interpreted the steps I marked in the model and then called upon a second program known as L3P. It's the job of L3P to package up the model and the steps by which it's built and send them off to the final piece of the puzzle. The last step – the rendering – happened in a program called POV-Ray. This is the software that creates that artificial light I talked about. It can create photo-realistic images such as the fish picture that opens this article or it can create images with a flat shadowless light that are more appropriate for basic building instructions. Below you'll find the instructions that POV-Ray (with help from the other programs) created from my fish model. They use the second type of rendering, sometimes known as 'old school instructions' since they look like the instructions included in older LEGO sets. They have a charming hand-drawn look to them, including the black outline that runs along every edge of every element and stud.

Imagine, for a moment, trying to draw out each of those steps one at a time. For someone like me, whose artistic skills stopped developing about the time I stopped using crayons, this would have been nearly impossible. The technology now available allows me, without the aid of a team of draftspeople and artists, to create instructions like you've seen above.

The ability to create instructions is just half of the equation. The other half is deciding what models to create and also what words to write about them. This is where the 'art' comes in. You, as the writer, need to present your own take on the hobby and that can result in some daunting decisions. "What sorts of models should I include?" "What types of parts should I use to create those models?" "Should I focus on just a single theme or should I try to cover many aspects of LEGO building?"

The answers to those questions often result in yet more questions. The best way to answer those is by understanding the book as a whole. Write and rewrite your Table of Contents until you are sure these are the topics that you want to write about. Know how one chapter can introduce information used in a later chapter. And stick to this plan once it's established. That will ensure your readers aren't left mystified when something described in Chapter 8 doesn't make sense because you accidentally left out the background material in Chapter 2 that explained it.

Most of all write about what interests you. The process of writing an entire book on your own can be a tremendous challenge. If you aren't in love with your material you may find it a tough project to finish.

Now you know some of what goes into writing a book about LEGO building. You've seen the technical side and read a bit about the artistic choices that need to be made. So what's your book going to be called?



# Tribute: James Jessiman

To start this spotlight on digital building with LEGO, BrickJournal pays tribute to the person who was the creator of LDraw, James Jessiman, with a recollection of his life by his parents. We are honored to present this this story, simply titled:

# Just James

Tribute by Robyn and Don Jessiman

#### JAMES JESSIMAN (1971-1997)

James was our first son, born in Wagga Wagga, New South Wales, Australia on 8<sup>th</sup> July 1971. From a very young age he was good company; he listened and seem to adapt to the other person's mood. He took a keen interest in mechanical things and block-building, always wanting to know how things really worked; also he enjoyed cooking, combining ingredients and getting something different at the end – it was a chemical experiment.

When Robyn, his mother returned to some part-time work, James was minded by a neighbour for a couple of hours some days and she said of him, "one day his head will go in the oven and not the scones", so interested was he.

At pre-school he did not participate in the games of the other children, he preferred to watch, but inside he would always go for the Lego building blocks.

James attended Turvey Park Public School for several years. He did not really like school, preferring to be home building and testing. Eventually we were called up to the school to be told to cut down on the home mental stimulation as the school could not compete. He was transferred to South Wagga Public School where his interests and talents were better catered for. At the time we were doing house renovations, and a cement-mixer was installed in the front garden. James viewed it from every angle, then disappeared upstairs and returned with a diagram of how it worked. Working Bees at Robyn's school saw James and Richard, his younger brother, helping check on the drainage systems for which there were no plans, and James learned, by peering down all the inspection holes exactly which way the water went, and knew more about the plan than any of the adults. His head was the first in place to look!

It was always easy to buy Christmas and Birthday presents for James – Lego, Lego, Lego. At age 7 we bought him a Technic Lego car; it was made very quickly, and when James brought it downstairs, Don remarked, "but it's a left-hand drive, James" – a few minutes later it was down again, this time as a right-hand drive car.

It was at Robyn's school too that James came into contact with some of the earliest computers and he was fascinated. Educational Lego was beginning to be introduced into the NSW School System, and an Inservice was held for teachers in the Riverina to teach them how to use this Lego in conjunction with a computer programme to operate the mechanics. Robyn asked if James could attend and he did. One activity was to use Lego parts to produce a windscreen wiper – James made one which was totally different from anyone else's but which worked better, and the instructor took James' with him. When the computer was set up to operate a fork-lift, and assembly-line set-up in a Lego factory, the instructor showed the beginning of the operation, then asked if anyone would like to try – James obliged; others were asked, but refused, saying they were learning better from James and could he continue!

James went on the St Michael's Regional High School for the first stage of secondary education. Although he still did not enjoy school, he did show talent in Maths and Science. During each of his High School years the Westpac Bank held Mathematics Competitions nationally, and he was awarded a Prize each Year. At the first of these he won a VZ300 computer. He also won a free place at Macquarie University, a week on Artificial Intelligence.

At the end of his secondary education he attended Charles Sturt University beginning a degree in Applied Science. He did very well in his first year there, and in the second half of the year was asked if he would like to Tutor final year external students during their Inservice Course. This he did, and when the allocated funds for this tutoring ran out, the students asked James if he would give them some more tutoring and they would pay him themselves and organize the room.

James found the university course work a bit boring; he preferred hands on and practical; he still attended extension Maths courses once a week at his old school and such things he enjoyed. He purchased Rivtron Computers, a business building and servicing computers and printers and selling hardware and software and he enjoyed himself as his own boss. He was not suited to working for someone from 9-5 and he would work flat out and at terrific speed for 3 hours and then he would have to go sound asleep for 20 minutes and get up and go again. Many a time he would be tripped over as he slept on the floor in the back of the shop, his head on a printer box

or a couple of keyboard boxes. He joined the local Amateur Radio Club of which his grandfather was a member, and enjoyed going out on Field Days and communicating via wireless with the other members. He did a Technical College Course to gain his full Radio operator's licence including Morse Code, more to show an interest in his grandfather's hobby, we think, than anything else. It was often said that if James was ever lost he would be taken back to Rex, his grandfather, their natures and mannerisms were so similar. At this time he also began a TAFE course, a more technical course than the one at university. It appealed to him more and he soon was given half the class to teach while the paid teacher took the other half.

During his time running Rivtron he also began his interest in computer generated Lego building. He would try one computer language after another, but found most did not do all the things he wanted them to. Eventually he found one which did and off he went. Of course, all this was done outside normal working hours; James' routine was to come home from work about 6pm, sleep until tea-time, work on the computer until 2 or 3am and go back to sleep.

Rivtron Computers continued to flourish and so did LDraw and LEdit. By this stage, James had decided to give his creations to the world. When his father asked if this was really what he wanted, he replied "Dad, it's a toy, not a business." Following the posting on the NET, James thought that others would draw new parts for themselves. However, nearly everyone found it easier to ask James to draw for them. This he did gleefully with up to thirty new parts being created per day in response to emailed requests from all over the world. He was very happy when filling the requests. During this time, James often commented that he daily expected the Lego Company to intervene to halt his LDraw activities. They never did.

On 25<sup>th</sup> July 1997, James died of influenza after a very brief illness. He had just celebrated his 26<sup>th</sup> Birthday the previous month. It was an extremely sad day for many, especially his parents and his only sibling Richard. The messages of condolence provided an insight into the diversity and geographical spread of the people this young man had touched. James's parents are still sad but never angry. We still marvel at the "26 beautiful years we did enjoy."

The amazing story does not end there. Shortly after James's death, the community of LDraw fans organised a website to encourage each other and promote and monitor the creation of new parts. To this point, this function had been fulfilled by James. This was the beginning of the LDraw explosion. A number of other programmers wrote adaptations and enhancements of LDraw. One remarkable and very pleasing fact about this phase is that all such programmers have followed James's lead in allowing free public access to their work. "IT'S A TOY, NOT A BUSINESS.'

Editor's Note: The LDraw website, www.ldraw.org, has become the central point for LCAD resources. The organizers of the LDraw website also have a memorial page honoring James at: http://www.ldraw.org/modules.php?op=modload&name=News&file=article&sid=222.

There is also an award dedicated to James. The James Jessiman Memorial Award honors an individual who has contributed to the furthering of LDraw, the DAT format, and James' memory and is presented annually at BrickFest. Past recipients include Steve Bliss (2001 - the year the award was first presented) and Michael Lachmann (2005). Currently, the award is handled by the LDraw Steering Committee.

James often commented that he daily expected the LEGO Company to intervene to halt his LDraw activities. They never did.

# History: LEGO CAD

# LDraw – a history of LEGO Cad

Geoff Gray, Photo Editor to BrickJournal, gives a personal chronology of LDraw and its community In **1995**, James Jessiman released a DOS based modeling program called LDraw. It was designed specifically to model creations built with LEGO bricks and other LEGO pieces. LEdit, a parts editor based on the LDraw format was initially released with only 3 parts; a 2x2 Brick, a 2x3 Brick, and a 2x4 Brick. Both of these programs were command line driven.

In **1996**, two minifigs named Jill and Gary started the MFWT, or MiniFig World Tour, being mailed from AFOL to AFOL. The tour included the idea that the minifigs would interact with different MOCs. LDraw was offered as an option for these people to add instructions for their MOCs to a "community idea book."

In **1997**, Steve Bliss released a program called LDraw Add-On; a program used to easily control command lines and files for LDraw. This would be the first of many programs authored that would build on the LDraw system. It is considered a system because James spent as much time designing the file format for parts and models as the program itself. The parts file format was flexible, extensible, and designed to be an open system. The initial work done by James to outline the system made everything that we do with the tools today possible. Without the foresight of James, we would not be able to build the complex layouts, nor would we have such a wide variety of add-ons and compatible tools.

Unfortunately, in **1997**, James passed away due to complications from the flu. He was only 26 years old. James had made several good friends and they created a memorial for him and vowed to continue the work he had started. 2 more programs were released that year; Jacob Sparre Anderson's Fractal Landscape Editor, and Lutz Uhlmann's LDraw to POVRay conversion tool (L2P). Terry Keller started the James Jessiman memorial site, and both Terry and Steve Bliss started managing the LDraw parts library, allowing the community to continue to participate in the expansion of LDraw.

**1998** saw the release of Bram Lambrecht's LDraw and LEdit tutorial, as well as Lars Hassing's L3P converter, which allows LDraw files to be converted to PovRay using all of the parts included in the LDraw parts library.

The official website of everything LDraw was released in July **1999**. WWW.LDRAW.ORG was started by Tim Courtney after several months of discussion, and has remained the predominant resource for LEGO CAD software, discussions, and community interaction.

Also in **1999**, Michael Lachmann introduced MLCad, a Windows' based LDraw editor. It has grown since that time to be the most widely used Windows based LDraw model editor and is currently on version 3.10.

By the year **2000**, Tim Courtney, Bram Lambrecht, Lars Hassing and others are presenting LDraw at various different venues, and the popularity of the program and the work by the community is increasing dramatically.

In July of **2001**, the legacy of James Jessiman was solidified at BrickFest, when James' parents (Don and Robyn) traveled from Australia to give the first annual "James Jessiman Memorial" award. It was awarded to Steve Bliss. I was present when this happened, and will never forget meeting James' parents. Nor will I forget the genuine warmth and respect they had for our community.

The LDraw Standards Committee was formed in **2002**. This committee insured that good standards existed and were followed for parts libraries, file formats, and other crucial parts of LDraw. In 2003, The LDraw committee was formed, which drafted a set of bylaws for running the LDraw site and intellectual property. This was turned into an official organization on February 26, 2004 and all the bylaws were officially ratified.

**2003** saw the release of the first 2 books published on how to use LDraw and several accompanying tools. The books "LEGO Software Power Tools" and "Virtual LEGO" were released in January and July respectively. As part of the process of writing the book "LEGO Software Power Tools," Kevin Clague designed and wrote a new authoring tool called LPub. Later releases of the tool have become an integral part of the suite and are used extensively as an easy way of turning LDraw model designs into instructions by creating all of the different assembly steps automatically.

In **2003**, Tim Courtney presented the LDraw suite of tools to SIGGRAPH, and it was widely and warmly accepted. This recognition is a tribute to how well the system was designed and has grown.

By the year **2003**, the programs and tools designed around the work of James had become so popular and had so many users and proponents, that the name actually was being misused and misunderstood. Because of this, the LDraw.org staff released an official statement declaring that all programs and tools that support the file format started by James should be referred to as "the LDraw System of Tools." This is because LDraw has come to represent much more than the original DOS executable, it now embodies the system for mathematically describing LEGO elements and models; a system originally designed by a man from Australia. A man who might not have lived to see the difference he made, but who undoubtedly changed the way AFOLs around the world would use their computers.

#### The LDraw System of Tools

I just gave a history of LDraw (which refers to the entire suite of tools), but I did not explain one facet of the LDraw System of Tools that to this day describes the true nature of our community; it's totally free. All of the tools, parts, and add-ons have been written by AFOLs around the world, for the express use of others. James Jessiman gave his work freely to anyone who wanted it, and the LDraw community honors that spirit to this day.

Below is a list of many of the more popular tools and programs available. I am not going to try to list all the tools available, as that list is too extensive for a single publication. Each listing includes the author, the download location, and a very brief description of the tool. (NOTE: the list is in no particular order) Don't forget to go to http://www.ldraw.org for more information.

- LDraw (James Jessiman) [http://www.ldraw.org] The core program and parts library. Required for any other program to work.
- LDraw parts updates (LDraw Community) [http://www.ldraw.org] These updates contain additional LEGO elements and updates to existing elements.
- MLCad (Michael Lachmann) [http://www.lm-software.com/mlcad/] A Windows based model editor for the LDraw system.
- Bricksmith (Allen Smith) [http://bricksmith.sourceforge.net/] A full featured LDraw model editor for the Mac.
- L3P (Lars C. Hassing) [http://www.hassings.dk/l3/l3p.html] A Windows console utility to convert LDraw model files to POVRay input files.
- L3PAO [http://l3pao.malagraphixia.com/L3PAO.htm] A Windows GUI interface for L3P.
- LPub (Kevin Clague) [http://www.kclague.net/LPub/index.htm] A powerful instruction generator, turning LDraw model files into step by step instructions.
- LGeo (Lutz Uhlmann) [http://www.el-lutzo.de/lego/lgeo.html] A library of LEGO elements designed specifically for POVRay. Programs like L3P and LPub will use this library whenever possible to make more realistic looking renders.
- Mesh Enhancer (Lothar Teichert) [http://members.aol.com/elferwette/LDraw] A tool to smooth angles within parts definitions generated for POVRay.
- POVRay (Various Authors) [http://www.povray.org] An extremely powerful ray tracing program that can generate very realistic models and scenes (this tool is not specific to LDraw). LPub can use this as the primary renderer for making building instructions.
- MegaPOV (Various Authors) [http://megapov.inetart.net/] An unofficial version of POVRay that allows LDraw tools to generate renders that have the parts outlined. This makes building instructions more readable.
- LDGLite (Don Heyse) [http://ldglite.sourceforge.net/] An OpenGL LDraw viewer. LPub can use this as the primary renderer for making building instructions.

For official install instructions, please visit http://www.ldraw.org/modules.php?op=modload&name=News&file=article&sid=126. If you'd like to get really in depth with the tools listed above, I highly recommend that you purchase one of the books listed on the LDraw website (Go to the main LDraw.org web page and choose "Books" from the left hand navigation menu.)



**Brickvention** is a 2 day event for the Lego Community and General Public taking place over the Queens Birthday long weekend. Saturday will be a gathering for AFOL's to get together and dicuss Lego, building techniques, models etc...

The Sunday is set aside for the general public to come and view the displays of peoples' models, watch some Lego fans at work and participate in Lego themed events. Brickvention will take place at the Graduate Centre (1888 Building) at the University of Melbourne, located at the corner of Swanston and Grattan streets.

You can findout more information at http://www.brickventures.com/brickvention.html

# **Building: Using MLCad**

#### Building models in computer programs has become a very easy way to share ideas and creations. Here Geoff Gray, BrickJournal's *Photo Editor, gives a lesson in using MLCad,* one of the most common programs.

### Article and Art by Geoff Gray

LCad is one of the most widely used add-ons for LDraw today. It utilizes the LDraw system and offers a graphical interface that allows you to quickly and easily design and build a model. This short tutorial is intended to be a simple introduction. For more in-depth information, you can read one of the wonderful LDraw-based books listed at the LDraw website (http:// www.ldraw.org).

For this example, we will use a model I created from the LEGO X-Pod kit #4347. It is the same model used for other tutorials and as a "You Can Build It" in this issue. To get started, we need to make sure that the proper tools are in-

Digital Building: A Primer in MLCad

Figure 1

stalled. You can follow the steps outlined at www.ldraw.org to get the LDraw suite of tools setup. The easiest way is to use the prepackaged installer they have on their site. Once you install that, be sure to get the latest parts updates as well.

Once you have the tools installed, open MLCad. You should have a screen similar to Figure 1, except that your menus across the top will not be laid out the same. The first time you use MLCad, you can (and should) move the toolbars to suit your need. You can right click in the toolbar area to get a list of the toolbars that are visible, and turn off the ones you do not want to use. You can also drag the other toolbars around to lay them out differently. Figure 2 shows the default toolbar layout and the name of each toolbar in the area. The following is a very brief description of the main use of each bar:

- The color bar allows you to quick-choose the color for a given element.
- The main bar is the standard Windows bar for Open, Save, Print, etc.
- The transformation bar is used to rotate or move the highlighted elements
- The object bar is used to add steps, rotation steps, comments and etc.
- The control bar allows you to step through the instructions.
- The mode bar is used to set the mode of MLCad and the grid size
- The **expert bar** is used to help build custom or new elements.
- The **zoom bar** controls the zoom level of the viewing panes.
- The visibility bar allows you to group elements and control their visibility.
- The extras bar allows you to quickly access features like the minifig generator, Lsynth, and etc.

You can choose what bar you want to use and where you want them. As you get better, you might decide to move them around to make certain tasks easier. For the moment, you can set up your bars to look similar to Figure 1. Once that is done, you are ready to start. We'll start building the 4347 MOC.









Figure 3 shows the first steps to follow. We will expand the "plates" section (note: you need to click on the word "plates" to get the elements to show up in the bottom left window). Find the 2x3 plate and drag it into one of the view windows. Click on the blue color in the toolbar. Then add a step command. The STEP commands are used to allow programs like LPub to know when to create the next step in building instructions. When creating a model, be sure to add enough steps to allow someone to easily build the model, but do not add a step for every single element.

Figure 3

Figure 4 shows the next 3 elements in place. I chose 3 elements for this step because they are all at the same level and easy to see. The figure also shows the colors to choose for each element in the color bar. However, notice in my version that the model is too large to fit in the window. If this happens to you, you can choose a different magnification. For my example, I will change the magnification to 200% (highlighted).





The next step will introduce a new concept involving sub-models. A sub model is a set of steps that are completed to create a section of the main model. This section will then become a new element that can be added to the main model. The purpose for this is to be able to break up instructions into sections as needed, similar to what The LEGO Group does with some of their instruction sets. To create a sub model, select "New Model" from the "Multipart" menu (figure 5), and enter the information shown in Figure 6. You will now have a clean slate to start with.

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Figure 7

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Figure 8



The next thing we need to do is select a color for the 1x1 round plates. We want them to be transparent, but those colors are not available on the main color bar. If you click the "More" button on the color bar, you will get the dialog box shown in Figure 8. If you move the slider on the right down 1 notch, you wil get to the transparent colors and can choose the right color from there. Go ahead and finish the sub model, making sure you have all four pieces shown in the list on figure 7. Once you are done, you can switch back to the main model by choosing the Multipart menu and selecting "Activate Model". You should see figure 9, and can choose "Untitled. ldr" to switch back.

We will now add all of the pieces listed in Figure 7. There are a few things to note here. The first piece is a "bracket" and can be found by expanding the "Other Parts" listing and expanding the "B" section. If you are not sure what name an element has, you can go to http://guide. lugnet.com/partsref/ to locate pieces and their names. You should also note that I have highlighted the move and rotate buttons, which you will need for this step. These buttons will be used to properly place the 1x1 round plates and the hinge base. I have also highlighted the grid setting buttons. If you find that using the move buttons does not allow you to properly align pieces, then change to a smaller grid size and try moving again. NOTE: be sure to set back to the biggest grid size for the next pieces. The smaller grid sizes are fine tuning a piece placement.

Once you are back, you can see the sub-model by choosing the section in the upper left called "Document" (see Figure 10). Any submodels will show up here. You can now drag the front bumper into the main model as if it was a normal element. Add the bumper and the 2x4 plate, and then add a step. You can now continue through the rest of the model, adding pieces in order as shown in the "You Can Build It" article at the end of this article.



Figure 10































Released in 892 Elem











LEGO is a trademark of the LEGO Group and used here with permission

# Building: Using LPub

# Building Instructions for Your Models

With a model created in MLCad, it's easy to create directions using LPub, a program that generates instructions automatically. Geoff Gray finishes his tutorial model here.

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Figure 2



Figure 3 50 BrickJournal • Issue 4, Volume 1 • Spring 2006 fter creating your model with MLCad, it is time to build some instructions. We will use Kevin Clague's LPub to do this. This tutorial is simply an introduction and does not begin to cover a lot of the advanced features available through LPub, but it will give you enough information to allow you to quickly create instruction sets. When you start LPub, you will see a screen like Figure 1 (note, you must have POVRay and LDraw installed in order to run LPub. If you get prompted to locate folders or files, please select them as appropriate). I will walk you through the steps necessary to get the instructions built for the 4347 model. You can explore any other settings as you wish. here are some tips and hints:

- CSI stands for Construction Step Image
- PLI stands for Parts List Image
- BOM stands for Bill Of Materials

• Images created by LPub have a default resolution of either 72 or 96 dpi. To use the images in a print format, you should change the resolution to 300 dpi. You must do this in a photo editor after the images are created.

• The Distance setting will be something you must play with to get the right images. This specifies the minimum distance that the camera must be from the part/model to create the image. If you are too close, you can get parts lists with huge elements, and if you are too far away, you can get extremely small images. There is a "Min Camera Distance" tool under the "Utilities" menu. This will tell you a good starting minimum distance for the model. The distance for the Parts List Images will most likely be smaller.

To start our work, first open the building instructions you made by choosing "File -> Open LDRAW File". Select the instruction file you created for the 4347 MOC. Then set the values shown in the following screenshots.

All that is left to do is to render the images. Go to the "Generate" menu and select "Complete Model". This will generate a single image of the finished model. You can then go to the "Generate" menu and select "CSIs, PLIs and BOM" which will generate all of the instruction steps and parts images, as well as the Bill Of Material. This selection will build images based on which boxes are checked in the "Generate" section of the main screen (see Figure 1). Next, you can try the "Layouts" option from the "Generate" menu. This will create images that have the construction picture, the parts list for the step and the step number all together. Once that is done, you can choose "Layout Web Pages" from the "Generate" menu to create HTML pages for use on your web site.

• When creating images with POV-Ray, the POV-Ray render window will open and you will see each image as it is generated.

• When creating images with LdgLite, there is no render window visible. You will see updates in the information window in LPub.

• When creating instructions, LdgLite is preferred over POV-Ray since it automatically creates outlines around the parts, making the steps and elements easier to see and identify. POV-Ray is more appropriate for final images, or for radiosity rendering (see the article on Radiosity for more information)

Figure 5 shows the file folder structure for LPub. LPub will create a subfolder named "LPub" in the directory where you loaded the LDraw file from. Under the LPub directory are the folders that contain all of the images, web pages and data files used by LPub.

One last thing you will want to do with LPub before closing is to save the configuration information. LPub allows you to change any of the settings and store those separately for each model. Go to "File" and choose "Save Local Config". LPub will create a file in the model's directory called "config.lpb" and will automatically load this the next time you open the LDraw file. That makes it very easy to go back later and rework some of the model.





Figure 5



The Bill Of Materials from our model





# Building: Rendering Secrets Radiosity

Learn how to make your renders really "POP"



Article and renders by Koyan Derudder. Model by Geoff Gray

In this tutorial I'll explain how I make my renders. I'm sure it's not the best way, and it *definitely* isn't the fastest or most efficient, but it's how I do things these days. I'm constantly trying out new things, so this may soon be out of date, but it should get you nice results, and you can definitely use it as a spring board to make your own settings. (If you find a great new way of doing things, or of making the renders look better, do tell!)

#### 1. The POV file

First we need to convert your model into a .pov file. I use L3P with its GUI (Graphic User Interface) addon L3PAO. In this first step, we're just concerned with the mise-en-scène, which means we're just trying to find a place for the camera so we get to see the model from a nice angle, with everything in frame. The render itself doesn't need to look good; since

we're going to be trying out different camera locations, it just needs to be fast, so we're going to use a quality setting of 0, which means everything will just be made out of big blocks (see *Figure 1*). Play around with the latitude, longitude, and camera angle. I usually use a value of about 30. Play around and see what looks best to you.

#### 2. Better parts

The LDraw parts library is great for modeling, but some of the parts are too low-res to make nice renders. There are others out there with nicer parts, though, like LGEO and Anton Raves' library. LGEO support is already built into L3P, so we'll use that.



LGEO doesn't contain all the parts that LDraw does. L3P just uses the original LDraw file for those, and some still won't look that good. There's an excellent little program that can fix a lot of them: Mesh Enhancer. It just smooths out the creases. You can just use it on a complete .pov-file, but I recommend just using it on those parts that need it, since some parts lose detail when you run them through it. Just select the code of the part in the .pov-file, run Mesh Enhancer, and paste the transformed code over the original.

\* There are still a few mistakes in the LGEO library. Lars Hassing has fixed some of them. You can download them at http://www.hassings.dk/l3/lgeofix. html.



\* LGEO is an old library. A lot of the parts in it have since been updated. For instance, once upon a time there was only one kind of Slope Brick 45 1x2: part 3040. These days, that part has been superseded by 3040B, while 3040A is the same part, but with some differences. When L3P-ing a file, the newer 3040B part won't be substituted by an LGEO part. So before running L3P, I like to replace those parts with their older equivalents. Some parts, like 4085A, 4085B and 4085C are very close, and it's usually no problem to substitute them for a render. But some parts, like 4081A and 4081B, look similar but are actually quite different. Choose carefully which parts to change.

Figure 2 shows you how the model looks rendered with LDraw parts. Figure 3 is the same model, but rendered with LGEO parts. (Just run the model through L3PAO again, but with the LGEO option enabled, and the same camera coordinates.)

#### 3. Better Colour

As you can see in Figure 2, the colours look all washed out. LGEO uses its own colour definitions, so in Figure 3 they're already a lot better, but it's still not perfect, and later on, when we'll be using radiosity and hdr lighting, they won't look at all convincing.

I use the colour definitions of Todd Lehman (http://guide.lugnet.com/color/), (plus a few I've made myself, like bley, bred and various rubbers). You can find a complete archive of Todd's colours at

<a href="http://guide.lugnet.com/color/povray-20021003/lg\_colors.tar.gz">http://guide.lugnet.com/color/povray-20021003/lg\_colors.tar.gz</a>. My additions, plus an include file that maps them to reasonable numbers in MLCad, are in the includes-directory. Just download and unpack everything to a directory, and then add the following line to POVRAY.ini:

Library\_Path="\path\to\colour\directory"

Then, in your .pov-file, remove the line that says

#include "lg\_color.inc"

and replace it with

#include "koyancolours.inc"

If you render it now (Figure 4), the colours just look a lot more reflective, but still not quite right. That's okay. You'll see the difference when we apply better lighting. So on to the next step.



# Figure 5



## Software Needed

The following programs need to be downloaded and installed in order to use the tutorial here. L3P (http://www.hassings.dk/l3/l3p.html)

L3PAO (http://l3pao.malagraphixia.com/L3PAO.htm) POV-Ray (www.povray.org). LGEO (http://www.el-lutzo.de/lego/lgeo.html) Mesh Enhancer (http://members.aol.com/elferwette/LDraw/)

MegaPOV (http://megapov.inetart.net).



#### 4. Radiosity lighting

With radiosity lighting, we place a huge lit sphere around the model, so that light comes from all around, instead of just a few unnatural looking lights. Delete any lights that are currently in the .pov-file, or your render will look much too bright, and then just put the following lines in at the start of your .pov-file:

```
#version unofficial MegaPov 1.10;
#declare LDRAW RAD LEVEL = 5;
#declare LDRAW MTL = 10;
#declare INDEXOFREFRACTION=1.52;
#declare LDRAW_RAD_NORMAL = off;
#declare LDRAW RAD MEDIA = off;
#include "rad def.inc"
global settings {
  assumed gamma 1.4
 max trace level LDRAW MTL
  adc bailout 0.01/2
  radiosity {
    Rad Settings (LDRAW RAD LEVEL, LDRAW
RAD NORMAL, LORAW RAD MEDIA)
}
sky sphere {
 pigment {
    gradient -y
    color_map {
      [ 1 rgb 1 ]
}
```

Do play around with the settings. Now the render looks like *Figure 5*.

In the standard .pov-file that L3P creates, all parts have an ambient and diffuse value of .4. This means that a part will emit a bit of light, even when there's no light hitting the part. When rendering using radiosity, all parts automatically get an ambient value of 0, and a diffuse of 1. This makes it look much more realistic. Be sure to change the amb and dif values of the floor, though, since this won't change automatically!

It's pretty nice, but still looks sterile. Check out the transparent parts; they don't have anything interesting to reflect. That's because the whole skysphere is just evenly white. So let's move on to the next section.

#### 5. HDRI lighting

An HDR (high dynamic range) image or lightprobe simulates a more natural environment. The lighting, but also the reflections, will be more realistic. You can download a few free lightprobes from www.debevec.org. First, remove all the lights that are in the scene. Then, change the skysphere definition from:

```
sky_sphere {
   pigment {
     gradient -y
     color_map {
        [ 1 rgb 1 ]
     }
}
```

#### to this:

```
sphere {
  <0,0,0>,10000
  pigment {
    image_map { hdr "lightprobe.hdr" once interpolate 2 map_type 7 }
    finish { ambient 1 diffuse 0 }
    hollow
}
```

Again, play around with the settings. I'm using a sphere here, because the version of MegaPOV that I'm using doesn't accept hdr-images as textures for a skysphere. That may change in a future version. The map\_type depends on what kind of hdr-

image you're using. There are different kinds of projections that can be used to make one. Read more about it at www.debevec.org. Map\_type 7 is used for a spherical lightprobe, like the ones that can be downloaded from there. The ambient value defines how bright the hdr is. The render should now look like *Figure 6*.

#### 6. Area light

You may want to add a direct light as well, to add more depth or to highlight a few details. If you want to get nice, soft shadows, you can't just put in an ordinary light, you'll need an area light. An area light consists of several point lights. You can change the settings to use more or less point lights and expand or decrease the area, to make the shadows softer or harder. For instance:

```
light_source {
    <-5000,-5000,-5000>
    color rgb .4
    area_light 200, 200, 10, 10
    adaptive 1
    jitter
    circular
    orient
}
```

This looks like Figure 7.

#### 7. Anti-aliasing

The standard Pov-Ray anti-aliasing doesn't look too good, especially if you use transparent or reflective materials. You can play with the AA-settings in Pov itself, but I usually just turn AA off altogether, render an image that's at least twice as large the image I want to end up with, and then resize it in Photoshop, or another graphics program that does bicubic anti-aliasing. You can see the difference in *Figure 8*.

Also, check out how much more smooth and realistic slopes and edges of bricks look.

And there you have it!





# Building: Bricksmith

# iBrick? - or Building LEGO models on a Macintosh

While LEGOFactory is available in both Windows and Macintosh versions, LDraw files were almost exclusively the domain of Windows systems, until the release of Bricksmith. The creator of this program gave BrickJournal an overview of the program.

Article and art by Allen Smith When I first discovered LDraw in 2000, it was more of a bittersweet moment than I would have liked. I was astounded to discover such amazing new possibilities in my lifelong Lego hobby. I was amazed by the incalculable hours of work that had gone into the part library. But my the joy was tarnished by the realization that LDraw wasn't a part of my other lifelong hobby: Macintosh computers. Worse yet, LDraw's DOS heritage pervaded the process. This wasn't a pastime for The Rest of Us.

At the time, however, I was an inexperienced freshman Computer Science major.

Thus powerless to affect the situation, there was little more to do than suffer with a slow Windows emulator and hope that some Mac programmer out there was hankering for LDraw too. As it happened, several such people were. But their efforts never reached the levels of usability and feature-completeness that I needed. In the meantime, my tottering copy of Virtual PC got so out of date it didn't run anymore, and I gave up onLDraw.

Then a funny thing happened. I graduated from college, got a job as a Mac programmer, and suddenly realized that I could write the LDraw editor I'd been dreaming of for five years. So after six months of coding, I unveiled Bricksmith, an LDraw editor for Mac OS X that finally allowed me to do easy Lego modeling.

Bricksmith is fairly straightforward to use, and you can probably just dive right in and start creating. But just in case, here's a Bricksmith primer.

#### Installation

Presenting three easy steps to Bricksmith (with apologies to Jeff Goldblum):

- 1. Download Bricksmith at bricksmith.sourceforge.net.
- 2. Double-click.
- 3. There's no Step 3. There's no Step 3!

Really, that's it. As long as you downloaded the complete package, you can just copy the Bricksmith folder wherever you want it and double-click.



## **Making Your First Model**

When you open Bricksmith, you'll see something like the following screen:



The drawer at the bottom of the document window is called the *Part Browser*. It presents Lego bricks organized by categories, such as "Brick," "Plate," or "Slope." Once you have chosen a category, the list can then be sorted by number or name. There is also a search field, handy for phrases like "Ice Planet" or for those occasions when you have the actual part number in hand.

In this case, let's insert a 2 x 4 brick into our empty model. LDraw parts are generally named by the pattern "Category size x size," so we're looking for "Brick 2 x 4."

If we go to the Brick category and sort by part description, it's very easy to find. That little preview to the right is a spinnable 3D view, so you can inspect the part from any angle to make sure it's the piece you're looking for.

Now comes the moment you've all been waiting for: click the Insert button. The2 x 4 brick will appear in your model.

The brick is going to look a little odd. Since you just inserted the part, Bricksmith has politely selected it for you. Selected parts are drawn as a wireframe to set them apart from the other pieces in your model. As an additional bonus, you can see through the wireframe, which is very useful when attempting to precision-align parts. (To deselect the brick, just click outside it.)

Now add an 8 x 12 baseplate. You'll see that it appears on top of the previous brick. Bricksmith always inserts new parts at the same location as the previous part, which can be a little confusing at times. If you had a large part selected then inserted a small one, the new part could be completely inside the old one—just rest assured that it *is* there.

At any rate, we really need to learn about moving pieces now.





#### **Brick Movement**

All you need to do to move a brick is to click on it (to select it), and press the arrow keys the direction you want it to go.

The caveat is that computer screens are two-dimensional, and Lego models are three-dimensional. If you want to move a brick in that third direction, you must spin the model around so that the arrow keys align with the direction you want to move the part. To spin the model, just click in the model view and drag. It swivels around while you drag the mouse.



If you swivel the view around like this, then the arrow keys will be able to move up and down and right and left—just not in and out. When viewing the brick from the top, the arrow keys will be able to shuffle it sideways, but not up and down.



The amount by which a brick moves is determined by the grid mode. The coarse grid moves parts by one stud, medium is half a stud, and fine is by 1 LDraw Unit, which is to about 1 pixel.







Lastly, you'll want to change the colors of your bricks. Bricksmith displays the available colors by name, which makes it considerably easier to tell the difference between Earth Orange and Pearl Gold. You can open the color palette by going to the Piece menu and choosing Show Colors.

### **Advanced Part Tweaking**

Sometimes the basic controls just aren't enough. That's why Bricksmith provides an Inspector panel full of juicy information about your selection. To see it, choose the Tools>Show Info menu.

With the inspector, you can finetune your part (or model, or triangle primitive, or whatever). The values are all presented in very human-readable numbers, protecting you from the mathematical unpleasantness in the LDraw file format itself. You don't need to know what a rotation matrix is to use Bricksmith!

**Note:** It is smart design sense to make sure that the foundational piece of your model (such as the baseplate) is centered at the location (0, 0, 0). If you don't do that, your model will appear to move weird places as you spin it around. That's because it always spins



around (0, 0, 0)—the "origin" in mathematical parlance—so you want to keep things centered.

## **Model-Making**

A good Lego model is more than just a collection of pieces. It is a carefully-organized arrangement of steps and subassembly models. When you conceptualize your model in that way, you can use Bricksmith to make instructions for your creation.



### Steps

To add a step, choose the Model>Add Step menu. The new step will appear over in the File Contents drawer. To arrange parts, just drag the list items into the order you want.

To see the model being built up stepby-step, choose the View>Step Display menu. Then choose Next Step (□-]) repeatedly, or click on another step in the list to advance.

## Submodels

The submodel is the most powerful feature in modelmaking. Creating a submodel groups a collection of parts together and allows you to insert it into

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another model as a single unit. For example, my flying car (pictured above) has three models: the main car, the hood, and the trunk.

To create a new submodel within your file, choose Model>Add Model. It will appear in the File Contents as "untitled model"; if you double-click it, the Inspector will open and you can provide a name and other standard information. You can then commence adding Steps and Parts to your heart's content. Once finished, go back to the main model by choosing its name from the Model menu. Then

choose Model>Insert Reference>(your model name), and the submodel will appear in the main model as a single part.

**Note:** It is extremely important that you build your submodels around the origin (0,0,0). If you don't, they will position and rotate in very annoying ways when you are working with them in the main model.

#### **Becoming Your Own Pixar**

One of the most impressive things you can do with your finished LDraw model is to render it in the free raytracer POV-Ray. To do that, you need to convert the LDraw into POV-Ray format, a simple process which can be done with the L3P utility for Mac OS X. I recommend L3P Launcher, a graphical front-end to the L3P command-line converter.

You can find a link at my website.

You can also use the raytracer to make fine instructions for your creation, although that process is unfortunately quite complicated to do correctly sufficiently soto lie beyond the scope of this article.

#### And in Conclusion...

Any Macintosh user will attest that the most



important quality a Mac program can have is that indefinable Macintosh feel. Bricksmith may not yet have all the special features it could, but it is a fully functional LDraw editor for the Rest of Us. I'm delighted to have been able to write this program for the Macusing Lego enthusiasts of the world. Happy building!



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# **BrickJournal Is Coming** to Your Town...Layout!

In support of BrickJournal, ME Models has created a Delivery Truck (ME #1004) and a London Bus (ME #1005). Both models are sporting the exclusive BrickJournal logos, with proceeds from the sale of every model going to support the magazine. Each model comes in a sealed collector box with high quality laser printed instructions and decals. The models may be purchased by going to this website: http://www.me-models.com.

*ALL buyers and multiple orders welcome.* PAYPAL, cash, money orders and personal checks are accepted. Postage will be calculated when you place your order.



BrickJournal Delivery Truck (comes with minifigure driver)



BrickJournal London Bus (comes with minifigure driver)



Please e-mail ME Models if you have any questions at memodels@me-models.com.

# People: Batbuilders

This year marks the release of a new theme to the LEGO universe: Batman<sup>®</sup>!

Before the sets, though, there were still Batmobiles and Batvillains made by LEGO builders.

BrickJournal spotlights a few of the many Batbuilders, starting with Jeff Meadows, webmaster of www. Legionsofgotham.org, who got to preview the Batman sets...

#### Articles by Joe Meno

Photos provided by the respective builders

BATMAN is a trademark of DC Comics.

#### Tell us about yourself. What do you do?

Well, my name is Jeff Meadows. I'm 33 years old, married (to a wonderful woman who allows me to pursue these hobbies), and a father of five children. I live in Omaha Nebraska.

I work for a company called Netshops. We're an online retailer - we're one of the fastest growing online retailers in America. Currently, we have over 100 different stores with more coming every day. I'm an operations coordinator, which is basically a problem solver. My main focus is to try to balance our profit goals with customer satisfaction - not an easy job by any means. I also fix pricing problems, description problems and try to resolve problems with vendors. I've never been happier at a job. It's always interesting and every day is different!

#### How long have you been a Batman fan? And how long have you been a LEGO builder?

I've been a Batman fan for as long as I can remember. I grew up watching reruns of the 60's TV show. I've collected everything at one point or another. My collection includes original art, comics, Mego toys, clocks, glassware, placemats, action figures, video games, bobble heads, hot wheels, etc, etc. As you can see, it's way beyond "fan" for me. I guess that's what led me to become a member of Legions of Gotham.

I've been a fan of LEGO just as long. My first set was either #730 - the Steamshovel with Carrier or #145 - which is a general building set. I still actually have both in their original boxes with the instructions. I'd get the occasional set for a birthday or holiday present, but it wasn't until the Space sets hit that I really developed into a LEGO collector.

#### When did you join Legions of Gotham?

I joined Legions of Gotham in 2004 if I remember correctly. I'd seen some Batman Minimates there and started posting as a result. I worked my way up to a Moderator, and eventually Matt (Legions of Gotham's owner) asked me to join the ranks of the Sentries, who are admin level super-mods.

#### How did you get into LEGO?

Really, it was the classic Space sets that did it for me. I grew up watching Star Trek reruns and later Star Wars, so Space was a natural fit for me. I've given most of my sets to my boys and they enjoy them just as much as I did back then!

How did you get involved with the LEGO Group and what has been called the Comic Summit? I got involved as a result of my connection to Legions of Gotham. We were notified a number of months ago that LEGO was pursuing the Batman license. (MAN, was that a hard piece of info to keep quiet about!!) Matt mentioned that there was a 'planning summit' coming up, but he wouldn't be able to attend. He asked if I'd be interested in representing not only Legions of Gotham, but Batman fans everywhere? With an offer like that, how could I refuse? :D I talked to Steve a bit about my background and the rest is history!

#### What are your thoughts on the sets coming out?

They're GREAT! I think LEGO really nailed these sets and got the essence of the character down right away. As you've probably seen from the photos that have been circulating, there are lots of little details in each set. For example, Two Face's armored car set is split down the middle. One half has the studs hidden (I think "Snot" is the term?) and is smooth and unblemished. The other half has the studs showing. It's rough - just like Two Face. It really reflects the dual nature of the character and the horrible disfigurement that drove him insane.

#### What would you like to see in the future?

Hmm, where to begin? I'd love to see a Batman LEGO game like we saw with Star Wars. As far as sets, I REALLY want a light up Batsignal and some roof tops with gargoyles. A Redbird (Robin's vehicle) would be a fun set to have. Crime Alley, additional levels for the Batcave, Wayne Manor, a 'Legacy of the Batmobile' retrospective type set, Batman XPods, Batman keychains...I could go on and on!

Character-wise, I think LEGO did a good job right off the bat (no pun intended) with their character selection. They put most of the big guns in the sets right away. Of the ones they left out, I'd like to see a Commissioner Gordon, Batgirl, Ras Al Ghul, Black Mask, Firefly, Mad Hatter, and Harley Quinn. (The rest like Clayface or Bane, would be either tough to make as a mini fig, or too obscure for the casual fan, like Lady Shiva or the Ventriloquist & Scarface.) Of course, I want to see all of the DC characters in LEGO form, so this is just a partial list.

#### Favorite Batman - animated, TV, movie?

Animated. When doing a live-action type Batman show or movie, something has always been missing in my opinion. Animation is the closest thing to seeing it in comic form, so for me, that's the best. (I don't care what animated version we're talking about either - they're all good in my eyes.)

#### Favorite LEGO set?

#### Wow! Great question!

Being a father of five, I REALLY like the XPods. They encourage the kids to be creative, they're portable and they entertain the kids for hours. The more you add, the more options for building. So these, from a parent's perspective are great. From a fan/personal point of view, my current favorite set is # 4766 - the Harry Potter Graveyard Duel set. Not because it's Harry Potter, but because it's a LEGO graveyard! I NEVER dreamed that I'd see something like that from LEGO. Not to mention that this will fit perfectly with my Batman LEGO universe - I'm pretty sure that Bruce Wayne's parents, Thomas and Martha, are going to end up buried in that graveyard... :D





How old are you and where do you live? I am 16 years old and I live in Endwell, New York, United States.

#### What came first , LEGO or Batman?

I was a fan of LEGO far before I was a fan of Batman. I'm afraid the caped avenger was overshadowed at an early age by titans such as Iron Man and the Fantastic Four. I've been building with LEGOs since I was 4, and I got interested in Batman many years later.

#### What was the first Batman comic you remember?

My meager comic book collection never had a staggering number of comics, and the ones I did own, as I said above, were mostly Marvel comics. My interest in Batman arose after they started producing the movies.

#### What was the first LEGO set you built?

The first major LEGO set I remember putting together was the Beach Rescue Copter, from the early town series. It's a timeless classic!

#### What's your favorite version of Batman - movie, TV, comic or animated?

I believe my favorite Batman to date is *Batman Begins*. It's my favorite Batman movie so far. Or maybe it's just because of his sweet ride.

#### Favorite LEGO set?

Oh, you would ask this. I don't know if I have a favorite. If I had to pick one, I think it would be the Spyrius Robo-Guardian. I remember that birthday as though it was yesterday, and I still have the set assembled!

#### Batman set you would like to see?

I would love to see LEGO make a UCS-scale Tumbler from Batman Begins.

#### What else do you build?

From a very young age, I have enjoyed building Star Wars-inspired spacecraft and the like. Every once in a while, I try something different, and build something from a movie or a video game. That's how my version of the Tumbler came to be.

#### What inspired you to build Batman models?

I was inspired to build Batman MOCs when the newest movie, *Batman Begins*, re-sparked that old flame. Like any kid, superheroes grew old, and I moved on to other things. The release of the latest movie made me want to capture a piece of the superhero world. Batman's new car seemed like just the thing.

#### Favorite Batman Villain?

Another tough one. I think I'll go with Mr. Freeze.

You can see his gallery at: http://www.brickshelf.com/cgi-bin/gallery.cgi?f=136534





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bile from Bati



How old are you and where do you live? 21, Fresno, California, USA

What came first, Batman or LEGO? For me, Batman came first.

What was the first Batman comic you remember?

The Batman vs. Predator graphic novel

What was the first LEGO set you built? I don't remember the very first, but my most memorable set would have to be an old LEGO airplane from which I would always take parts to build other things.

What's your favorite Batman in the comics, TV show, animated show, or movie? Batman portrayed by Michael Keaton in Tim Burton's "Batman" and "Batman Returns" is my favorite.

#### Favorite LEGO set?

Any of the pirate sets from the early 1990s remain my favorites.

**Batman Set You would like to see?** I would like to see the "Batman Returns" Batmobile/Batmissle.

#### What else do you build?

I have also built designs based on "Stargate SG-1", and various models from "Star Trek", including the Enterprise-D Bridge seen in the Star Trek: The Next Generation LEGO fan film, "Captain's Nightmare".

# What inspired you to build Batman MOCs?

I built my first Batman MOC, a Batmobile based on the 1989 Batmobile, for my fan film "Batman: Revenge" in 2003. Following that came the Batwing from the 1989 movie, and Batmobile models from "Batman Forever", "Batman Begins", "Batman: The Animated Series", and the 1966 television series "Batman".

#### Favorite Batman Villain?

The Joker is my favorite villain.

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Jonathan also made a movie (Batman:Revenge) with his Batman models, which has been seen online worldwide.

#### What inspired you to do a Batman movie?

I've always loved filmmaking. The inspiration for "Batman: Revenge" came from the desire to make a Batman film, and to have the film resemble the gothic style of the two Batman feature films I loved the most, "Batman" and "Batman Returns".

#### How long did it take?

Pre-production, principle photography, and post-production took about three months. The first day of shooting was on October 17th, 2003, and the film premiered on December 12th, 2003.

#### What was the hardest part of production?

The most challenging, while at the same time educational part of production during "Batman: Revenge" was filming it in stopmotion animation. The slightest bump of the camera or the set on which the camera was resting could slow down production significantly. As all animators know who have made stop-motion films, patience is crucial for successful animation.

#### How has the film been received?

The movie has been received very well and I'm really proud to have a film that people of all ages can enjoy. Many parents have told me they appreciate having a film they can watch with their children, and I love hearing things like that.

#### You can find Jon's gallery at: http://www.mocpages.com/home. php/2258

or his site: www.jonathanmarkiewitz.com

How old are you and where do you live? 28, Portland, Oregon

What came first, Batman or LEGO? LEGO

What was the first Batman comic you remember?

An old 1970's Batman's Detective Comics that my cousin had.

What was the first LEGO set you built? Set 6650 Fire and Rescue Van, I got it in England when I was 4.

What's your favorite Batman in the comics, TV show, animated show, or movie?

Adam West - Forget the fancy body armor, he's got spandex!

**Favorite LEGO set?** 6046 Dark Forest Hemlock Stronghold

**Batman Set You would like to see?** Batmobile from the 1990's Batman: the Animated Series

What else do you build? Anime and video game inspired designs

What inspired you to build Batman MOCs? I was impressed by the latest Batmobile design.

**Favorite Batman Villain?** Danny DeVito as 'The Penguin'

You can see his gallery at: http://www.brickshelf.com/cgi-bin/gallery. cgi?f=137857



The Batmobile by Josiah Harlow





# LEGIONS of GOTHAM

The Batman Homepage! News - Interviews Exclusives - Forum Fan & Industry Interaction!



**How old are you and where do you live?** 18, Ithaca, NY

What came first, Batman or LEGO? LEGO

What was the first Batman comic you remember? hmmmm.....don't think I've actually ever read a Batman comic.

What was the first LEGO set you built? 4011 Cabin Cruiser

What's your favorite Batman in the comics, TV show, animated show, or movie? Michael Keaton in the 1989 Batman movie

**Favorite LEGO set?** 6561 Hotrod Club

**Batman Set you would like to see?** The Tumbler from Batman Begins

What else do you build? Lots of space and science fiction along with just about everything else

**What inspired you to build Batman MOCs?** I really like all of Batman's vehicles, and I wanted them in LEGO.

**Favorite Batman Villain?** The Joker

You can find Mike's gallery at: http://www.brickshelf.com/cgi-bin/gallery.cgi?m=mikepsiaki



The Tumbler







The Batmobile

# Norbert Black (no card available)

#### **How old are you and where do you live?** I'm 44, and I live in Ottawa, Ontario, Canada.

#### What came first, Batman or LEGO?

Lego (although I've probably been a Batman fan for a longer period of time).

#### 3. What was the first Batman comic you remember?

"The Brave and The Bold" #59 (April 1965).

http://www.comics.org/details.lasso?id=19070

#### 4. What was the first LEGO set you built?

It would have been one of the mid-1960s Samsonite sets, I suppose. I also have fond memories of receiving childhood Christmas presents of Lego sent by my German grandmother.

# 5. What's your favourite Batman in the comics, TV show, animated show, or movie?

The winner is Paul Dini and Bruce Timm's stylish "Batman: The Animated Series" (Warner Brothers, 1992-94). I love its voice acting, characterization, and Dark Deco look. DC's now-cancelled "Batman Adventures" comic (based on the Dini/Timm show) runs a close race for second place.

#### 6. Favourite LEGO set?

Scary Laboratory (set 1382 of 2002) - it had clever and whimsical minifigures combined with the Mad Science of yesteryear - what's not to like? :)

#### 7. Batman Set You would like to see?

I don't have one, since sets are a costly and rare luxury for me these days. Fortunately, since my creative focus is custom minifigures, I get by using parts from my existing collection, supplemented by occasional small BrickLink orders.

#### 8. What else do you build?

Customized minifigures based on favourite anime, comics and manga characters; 4-wide cars; small Train/Town MOCs based on rural southern England, circa 1911.

#### 9. What inspired you to build Batman MOCs?

I was inspired by:

a) the simple but compelling physical design of Lego's minifigure,

b) "Batman: The Animated Series", which also looks deceptively simple yet is very powerful visually,

c) the slowly increasing colour spectrum of available minifigure parts, which means I can create more new characters (Batman-related or otherwise) each year.

#### 10. Favourite Batman Villain?

My favourite villain is Mister Freeze (but *only* as he's portrayed by the 1992-94 animated series). My custom Mister Freeze minifigure (otherwise complete for 5 years now) still awaits the coming of Lego minifig hands in purple...

You can see Norbert's gallery at: http://www.brickshelf.com/cgi-bin/gallery. cgi?f=113917



Batman by Norbert Black





#### How old are you and where do you live (City, state, country)? I'm eighteen years old and I live in Saginaw, MI.

#### What came first, Batman or LEGO?

That would have to be Lego. It wasn't until the Batman animated series came out that I started getting into it.

#### What was the first Batman comic you remember?

It was the one with Bane (the Incredible-Hulk-looking guy addicted to steroids) and how he broke Batman's back. It was a little sad to see such a great hero hurt, but Batman came back better than ever so I think it was a really good chance to see that Batman is still very much human.

#### What was the first LEGO set you built?

Does Duplo count? Ha ha. No really, the first set I can remember is one of the first Lego police stations. I was always interested in police and criminals so it was a natural favorite.

#### What's your favorite Batman in the comics, TV show, animated show, or movie?

Nothing beats Adam West yelling "Hurry Robin; to the Batcave...we haven't a moment to lose!" But I think my favorite Batman would be Michael Keaton in *Batman* and *Batman Returns*. Plus no one can outdo Jack Nicholson playing the Joker.

#### Favorite LEGO set?

Hmmm...That's a hard one. I might say one of the original Model they really inspired me to build large-scale cars, but I'll have to wait and see if the Ultimate Collector's Series Batmobile takes the cake.

#### Which Batman Set You would you like to see?

A nice, big, Batmobile from the original Keaton films. Nothing beats that car, ever.

#### What else do you build?

Oh, I dabble in a few Star Trek MOCs here and there and I made a Delorean once that a few people thought was kinda sorta cool.

#### What inspired you to build Batman MOCs?

Well, jeez, they gave Spiderman his own sets. And since Batman has far better vehicles and stuff, why not?

#### Favorite Batman Villain?

The article with Bane was a great one, but no one beats the Joker. He is by far the best Batman villain ever.

You can find Zach's gallery (take a look at his comics!) at: http://www.brickshelf.com/cgi-bin/gallery.cgi?f=162780 Team sets because



Another Batmobile







#### How old are you and where do you live (City, state, country)?

18 years old, and I live in Tulsa, Oklahoma, USA. Currently residing in Oklahoma State University, Stillwater, Ok.

#### What came first, Batman or LEGO?

LEGO, for sure. I made giant roller-skating Duplo robots before I was out of diapers. As for Batman, I got into him when I discovered the Animated Series.

#### What was the first Batman comic you remember?

You know, I never was a big comics guy. My Dad has a box of old Gold and Silver Age comics, and the one I liked the most involved Batman somehow killing the Flash. Not sure if that's a real comic, or even Batman, but I distinctly remember being a little kid and wanting to know why Batman did that.

#### What was the first LEGO set you built?

The first actual set I remember building was the Forest Men Tree Hideout, or whatever it was called. It opened up, and closed so you could have them in it, or not. Man, that was cool. And the little guy with the arrow, and the target? Oh yeah.

# What's your favorite Batman in the comics, TV show, animated show, or movie?

Animated Series. Before they added the "Detective Batman" aspect to the show. The Phantasm movie was my absolute favorite after I saw it in theatres.

#### **Favorite LEGO set?**

I'm about to kill my LEGO coolness, but man, I really dig Bionicle sets. Moreso the older sets, my favorite still being the original Toa Kopaka.

#### **Batman Set You would like to see?** Something with Man-Bat.

#### What else do you build?

Mostly, I build Bionicle-based MOCs, my focus being on what many of my peers describe as a "Neo-Toa" look. Something about the noble bearing of a toa gets me deep inside. I definitely dig the whole "Adventuring Knights" feel the original toa had, and so I try to bring that out in my MOCs.

#### What inspired you to build Batman MOCs? Batman was my favorite superhero.

Favorite Batman Villain?

Man-Bat.

You can find his gallery at: http://www.brickshelf.com/cgi-bin/gallery.cgi?f=51132







Erik Varszegi



#### How old are you and where do you live?

38. The Enfield CT area.

#### What came first, Batman or LEGO?

Batman. My brother and I were raised on comic-books. But since he was the older one of us and *his* favorite was Batman, he declared that I had to pick Superman as mine. Hey, Superman is great but he doesn't have the car.

#### What was the first Batman comic you remember?

I'm sure that I had earlier Batman titles but the one story that stuck with me was "Death Flies the Haunted Sky" in *Detective Comics* no.442 (Sept. 1974) by Archie Goodwin and Alex Toth. No super-villains, just a great little mystery solve for the Dark Knight Detective.

You can read the story with Toth's annotations here on his website. http://tothfans.dynu.com/showarticles.asp?ctg=3&fldAuto=328

It must have been something about the almost minimalist high-contrast inking of Toth's layouts that struck me visually as a young reader. The style suits Batman very well. I just loved those old *Detective Comics* from the early 70s. 100 pages for 60 cents, you couldn't go wrong with that.

#### What was the first LEGO set you built?

First LEGO set? Believe it or not the first *sets* that I built were most likely the Aquazone, Explorien or Wild West lines from when I first got hired by LEGO. I had some bulk buckets growing up that I remember building skyscrapers and what not with. But I think if I were a little younger or if Space and Castle was launched a little earlier I would have been a lot more involved with the brick during my formative years.

What's your favorite Batman in the comics, TV show, animated show, or movie? Comics; particularly Frank Miller's Batman: Year One, a great re-telling of Batman's early career. And much like the Goodwin/Toth tale I mentioned above, David Mazzucchelli's artwork fits perfectly with the mood of the Caped Crusader.

I was pleased to see a lot of the feel of Year One preserved in *Batman Begins*. The psychological development of Bruce's character in the film seemed very plausible to me. It makes me wonder how any child in the real world who has witnessed such a tragic event isn't running around out there with a cape busting heads.

#### Favorite LEGO set?

Being an artist, I think I gravitate more to the sculptural *Model Team* type sets. Having said that I really like the Sopwith Camel even with the top wing falling off all the time.

#### Batman Set You would like to see?

How about a series of sets based on the old *Brave and the Bold* comics. Every month LEGO would release a new set that that would team Batman up with a different DC hero to do

 Batman Before

battle with a DC villain with some nefarious doomsday device. All right...that's not going to happen but it would be a great way to stock up on some cool mini-figs.

#### What else do you build?

Unfortunately, I don't get much of a chance to build stuff of my own choosing. But I guess I'm lucky that the things that I am asked to make are really cool and I get a chance to put my own spin on a project and make it my own.

#### What inspired you to build Batman MOCs?

Who hasn't tried to build a Batmobile with LEGO bricks before? I made this one back in 97 as part of a series of Superhero themed MOCs that I built with a friend and LEGO employee who is also very into comics.

Not very good by today's standards but I had fun with it.

#### Favorite Batman Villain?

I probably most identify with Two-Face. No, I am not horribly scarred, it's just when I go out to eat I can't just seem to make up my mind. Should I get the baked potato or should I have the rice pilaf? Let's flip for it.

Erik's gallery can be found at: http://www.brickshelf.com/cgi-bin/gallery.cgi?m=Ik-Var


## You Can Build It



# **Batarang** "Holy Brick Building, Batman!"

When The LEGO Group recently announced that they were partnering with DC Comics to release a new series of sets based on Batman, one of TLG's master builders went to work creating a life sized statue of the caped crusader. Later he redesigned the batarang used in the model. BrickJournal was lucky enough to get a copy of Erik Varszegi's model. Now you can build the same way the masters do!





















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## **Parts List**





Picture of Erik's model in the Lego Office in Enfield, Ct. (courtesy of Jake McKee)

# **The Perfect Job**

## Article: Kelly McKiernan



Remnants of snow littered the ground, clumped up in craggy little dirty white islands. The sidewalk was clear, though, and the occasional bicyclist pedaled leisurely past me in the frigid, foggy air. Every few minutes a car would amble by, trailing a brief whirlwind of cold wind and dry snow. I was the only one walking in the just-post-dawn gray light. My dress shoes bit into my feet, rubbing against the back of my ankles with every gravelly step, but I was warm and comfortable above the ankles. Walking briskly helped keep the chill from invading.

Two miles went by quickly. There was a lot to look at, to take in. Street signs were maddeningly familiar but just the other side of being pronounceable, and the addition of some extra letters made my brain hurt when I tried to puzzle them out. Buildings were spaced far apart in this rural landscape, some small but most were large factory-type enclosures. At least the logo on most of the buildings was familiar.

Circumnavigating yet another roundabout, I finally spotted my destination. A quick glance at my watch showed I was doing just fine, there were still twenty minutes left before the interview. A light rain began falling just as I reached the long row of low buildings that huddled together behind a parking lot. Pointed roofs made me think of an 18th-century Lilliputian factory row.

Fortunately, I'd been embarrassed earlier at the airport in trying to figure out how the phone system worked, so I was able to press the right buttons and announce myself without incident. The receptionist's voice came through the scratchy intercom in lightly accented English, and double glass doors went "click". Warm air batted my face as I walked into the building.

I hefted my "Bionicle" leather writing case - containing my resume - and walked into the warm and colorful LEGO reception area, right on time.

Article and Photos by Kelly J. McKiernan There's a game we play, we adult fans of LEGO. And it's not limited just to us - everybody plays it, I think. I know it's a popular topic of discussion with the kids on BZPower, a Bionicle fan site where I'm the chief geek and one of the owners/ administrators. It goes like this:

## "If you could pick the most absolute bestest job in the whole wide world, what would it be?"

For an AFoL, the answer often begins with some variation of the phrase, "I'd like to work for LEGO..." Most of the people I've talked with end the sentence with "... designing sets!" but not me. Although I have a few custom creations I'm moderately proud of - including one that snagged a couple of BrickFest awards - in general I'm not exactly known for building cool MOCs.

I am known for building web sites, though.

It's something I've been doing for more than a decade. At first an interest, then a job, I've worked my way into a senior developer and webmaster role at several companies. When I'm not coding for work, I can usually be found working on a site that has to do with my favorite hobby. Sometimes it's a challenge, sometimes I let myself get distracted for months between starting and finishing something. But in the end, it usually works out. BZPower, LUGNET, ILENN, BrickFest, MechaHub, and now LEGOFan (among others) have suffered my attention at some point, to varying degrees. These sites are ones I do for fun, outside of my regular web manager day job. I just think of them as virtual MOCs without the bricks.

So it's become apparent to me (and anyone who knows me) that any "dream job" with my name attached would involve some Internet geekery.

Since 2001, when I discovered online LEGO fandom, I've been involved with Bionicle, the wildly popular "fad" product LEGO released that year, which is still going strong. I've written hundreds of stories - actually more than 1,500 - on BZPower about Bionicle, from sets to storyline to behind the scenes, from contest winners to closeout sales. I'm fairly confident in saying I know a bit about the product line.

"Kelly, you should be LEGO's webmaster for Bionicle," is a phrase that's been tossed my way on occasion. I would generally nod, smile, and say, "If only." Indeed, it always seemed the perfect fit of my professional and personal interests and skills. If only. Sigh.

The message was kind of out of the blue in late 2005, just as an aside from one of my LEGO contacts, that maybe just possibly, the official Bionicle web site might be needing a new webmaster.

"Where do I sign up?" Adrenaline rush. It was a shot in the dark. Despite believing that maybe I was the right person for that job, it was difficult to think that LEGO knew it, too.

Shamelessly, I trolled my contacts and passed on a hastily-updated resume. An hour later, the word came back that they would like to chat with me.

To understand why this was so unbelievably astoundingly awesome, it's important to understand what's so special about LEGO. Sure, everybody has a passion or two, a hobby, something that they like to pour their energy and enthusiasm into. Some people bowl, some work on cars, some shop, others paint or sculpt or fish or hunt or hang out at the local watering hole with their friends. My buddies and I snap together little plastic bricks. But for some, including me, what's behind the plastic is just as important - that encouraging creativity within kids and other adults is a worthy goal in and of itself. Part of why I helped construct BZPower was because I would've loved having a place like that to hang out when I was a kid - the creativity I've seen grow there is nothing short of astounding, and it's humbling to have been instrumental in helping that emerge.

The whole concept of LEGO is creativity. It's a very positive, fun, exciting, colorful mindset. In short, it's one of the very few companies that I respect. I like their product (and buy altogether more of it than I can realistically afford), and I like the attitude the company projects. And not least, I'm more than a little impressed with the lengths the

company has gone to engage its consumers and core fan base in helping make their products better. If this sounds like I'm just trying to suck up to get a job... well, read on.

Corporate gears ground, emails and phone calls were exchanged, and a couple of months later I found myself invited to visit a small town in the center of Denmark. Billund, to be exact: world headquarters for the LEGO Group of companies.

Before leaving, I talked extensively with my wife about the possibility of relocating from Oregon to Denmark. Over the years we'd played the "what if" game, bouncing around the (what seemed to be) almost impossible scenario of working for the company in a role that would suit me. It usually ended with "we'll see, get the job offer first." My lovely bride of more than a dozen years teaches at jobs she is good at and enjoys immensely. How she juggles them, as well as taking primary care of our two children, is beyond me. But she is not what one would term "adventurous." Actually, she's pretty much on the opposite end of the spectrum from adventurous. She's worked hard to find a comfortable niche in her life, and she's been mostly successful at it. Since this is exactly what I'm looking for, I can't fault her in the

least. But it made for some interesting

conversations about the possibility of moving our family halfway around the globe.

Although trepidatious, she agreed to my finding out more. When LEGO invited me to Billund, she didn't want to quash my dream. So I quickly packed and flew across the US and the Atlantic ocean to Copenhagen, then over to Billund, where I



found myself tramping past dirty white islands of snow to a pointed-roofed factory row.

job interview is a job interview, even when conducted in a foreign country. The people were all very nice and friendly and informative, the kind of people you want to work with. Actually, the kind of people you'd probably want to hang out with during your off-work time, too. I chatted with several people in the department, each one friendly and enthusiastic about their job and employer. Despite a rough few years, the company is generally viewed as being back on an upswing, as several people pointed out.

The duties of the position were exactly what I'd been doing for years at other companies. It was exciting to see what was needed, and knew exactly how I could bring it about. Bionicle is an important part of LEGO's product line, and Bionicle.com is a popular destination for, well, a *lot* of people. Working in this position would be a plum assignment. The department manager interviewing me stressed how important they found it to have somebody who knew about Bionicle driving the web site, and thus my presence for an interview. I was also looking forward to having input into steering the unique storyline.

It looked like I would fit into the job like a well-tailored Kanohi mask on a Toa.

Of the office environment, I'll tread lightly. Over the years, I've signed enough nondisclosure agreements with LEGO to wallpaper a small room, and I have no doubt that even the most innocuous comment could endanger those NDAs. Suffice to say that I rarely get to relax in such a nice environment, let alone work in one. Of course, I visited during a week where kids were out of school and many parents were taking holiday time, so it wasn't exactly crowded.

I spent a couple of days talking with people I'd just met as well as people I've known for years, albeit virtually through email and phone calls. The overall tone of the days were comfortable, certainly not the uptight urgency I've felt during most interviews. Then again, I've never flown for 16 hours to attend any other job interviews.

In fact, a good deal of time was spent in providing ways to help me convince my wife to consider moving. By the time I left Billund, I wanted to be part of that team so much my teeth ached.



Source in Chicago, delaying my connecting flight by several hours. At least I didn't have to sleep in the airport, but by the time I finally stumbled home and collapsed into bed, it was 3 a.m. and I'd been awake for about 27 hours, give or take.

Three hours of sleep, then a grueling Friday working from home. Vacation time left: 0.00 hours, no choice but to suck it up and fake it for the day. I slept 14 hours straight that night, and then again the next.

In the remaining weekend, my wife and I had several discussions about my visit to Denmark. We came to an understanding.

Shaking off jet lag by Monday, I was able to drag myself into the print shop where I ran the website and found that my workspace had been moved during the week I was gone. Fresh paint fumes greeted me as I found my way toward... my new veal pen. I'd requested an office. This wasn't an office, not by a long shot. Half-height cubicle walls did nothing to conceal my cubicle's location at the end of a long room, itself at the end of a corridor. The desk faced a wall, leaving my back to 20 people in the room and the hallway directly behind me.

All my hastily-boxed stuff was in a corner, jumbled and crumpled.

My space shuttle was snapped in half. Dozens or hundreds of white bricks clattered in the bottom when I picked up the box. The Xpod alien was gone entirely, and my minifigs were all missing their hair and hats.

After I crawled under the desk, hooked up the computer, and brushed myself off, I saw email waiting: the company owner's son, who'd started working there in January, had hired his chum to be the company's Web development manager.

There was no indication of what the *previous* web development manager (that would be me) was expected to do.

The cell phone buzzed. Seeing the ridiculously long phone number, I hustled to a private area and listened to the LEGO manager who interviewed me. His first words were electric. "When can you move to Denmark?"

At last! Vindication, after so many years of being disregarded, minimalized, overlooked at a company that I disliked. A company that I respected and liked wanted me to work for them in the best position I could ever hope for. I took a deep breath and answered as evenly as I could.

"My wife and I discussed this all weekend. She's not ready to relocate, and doesn't know if or when she ever will be. And as much as I crave this job, I'm not able to drag my family to where they may be unhappy. I'm very sorry." Reluctantly, I hung up. My mouth was filled with ashes. I'd just turned down The Perfect Job.

That was a month ago. The depression and guilt have pretty much abated, although the sadness lingers, as I suspect it will for a long time. I like to think that things will work out one way or another, and an opportunity lost just means another will open up elsewhere. I haven't entirely given up on working for LEGO, it's just not the right time right now. But at least I have the satisfaction of having had the opportunity, and an appreciation of the effort LEGO is spending in trying to get the right person into the job. But I'll be able to continue in my many fan-oriented roles, much to the relief of those who weren't relishing my potential departure.

My minifigs at work have their hair back. I'm now doing R&D for the print shop. The shuttle went back together quickly. I turned my desk so I can see down the hall.

But it's still not LEGO. 🚺

Kelly McKiernan is a LEGO Ambassador, and a frequent contributor to BrickJournal as well as being webmaster to BZPower, BrickFest, and ILENN.

## RetroBrick

By Joe "LANDO DA PIMP" Fulton

Every LEGO fan remembers those initial sets that started their LEGO obsession. Newer fans of the brick may identify with Bionicle or a movie themed set. Older fans, like myself, would single out the more traditional sets as their favorite. We all read about the newer sets that are released but do you remember the sets from the 80s? The 70s, or even before that? From time to time RetroBrick will feature older sets and remember the time that LEGO sets were limited in colors and pieces.

I started building LEGO's in the early 80s. From Castle sets to Town sets to Space sets there were numerous sets in the lines that started my collection. I decided that my first article should be dedicated to what I believe was the best Space set and one of my all time favorite building sets, The Galaxy Commander (6980).

## Galaxy Commander (6980)

INFORMATION

Brick Count: 427 Mini-Figures: 5 (2 white, 2 yellow, and 1 red) Accessories: Two Space Rovers / Landing Pad Year: 1983

Before LEGO began producing movie themed sets, a LEGO builder who grew up in the 80s, would have to build versions of the Millennium Falcon and X-Wing fighters out of a limited pieces and limited color bricks. I would build numerous ships that would battle with my brothers and friends. Because of the lack of materials our ships looked more like floating buildings than spaceships.

I am jealous of newer builders. They have the luxury of using multiple colors and unique bricks and pieces for their creations. I know I got sick of building yellow, white, blue, red, and black spaceships. Just give me some grey!

The Space Theme was my salvation as well as many other spaceship builders. The line was introduced in 1978 and ran through 1999 when the line was discontinued. Space featured a number of astronauts and space ships that were futuristic looking NASA ships making it the most expansive theme in LEGO history. Over the 21 years more then 200 individual sets were released under the Space theme making is a close behind from the LEGO Castle theme. Newer colors, computer pieces, and great wing and weapon pieces were introduced providing my friends and I resources to build vehicles that belonged in space.

The Galaxy Commander set 6980 was released in 1983 and I instantly fell in love. I had already had a small collection of LEGO's, mostly castle and town sets. I knew that I needed this set if only to destroy my brothers and friends bulky spaceships using the sleek construction of the Commander set. If I got this set I knew I would have the coolest looking ship in the neighborhood.

The Galaxy Commander was a follow up to the hulking Galaxy Explorer set 928. The ship stood out from all of the previous sets in that it was the first to split up into three different sections. What's your favorite set? BrickJournal takes a look at a classic set with a retrospective - maybe it's your favorite!









## **Section 01: Front Pilot Section**

The front of the ship is the detachable slick flyer that is loaded with weapons. It is very reminiscent of how the Star Trek TNG Enterprise "D" saucer section detaches from the warp drive. The front of the ship was very different in that it was a two-seater pilot section. Both pilot seats are equipped with a steering wheel that is set inside two inverted slopes. Two blue transparent windscreen canopies open up to fit a mini-figure in each section. I only wish that both cockpits were connected in between.

A majority of the Pilot section is made up of wing and plate pieces. The initial building of this section is very weak until you begin to reinforce the wings with the weapons on the side and the canopy pieces. The weakest part of the ship are the weapons on the front of the ship that are antennas placed on 4 mini-figure accessory cameras with side sight.

The back of the ship has two large rockets with two small positioning rockets. The second science lab hitch fits into the small compartment between the two rockets. The compartment hatch closes down locking the hitch into the back of the flyer.









#### Section 02: The Mobile Science Lab Hitch

If the front section of the ship is like the Enterprise "D" saucer section, the hitch and mobile science lab is the warp drive with nacelles. The hitch is used to connect the pilot sections and secure the science lab. The science lab fits nicely into the hitch using a large slope on the hitch with two smaller slope pieces that are on a hinge to secure the lab above the hitch. The bottom of the hitch is equipped with two supports on either side, and two large rockets to allow the ship to land.











## Section 03: The Mobile Science Lab

The mobile Science Lab is a great feature to the ship. You can easily see how the Galaxy Commander front section would release the mobile science lab hitch allowing the science lab to disconnect for exploration.

Inside the lab is a series of tools and computers used to explore the different planetoids. The labs side window and roof open up to allow the mini-figure to enter and leave the lab. On the bottom of the lab is a series of small rockets for movement. The top of the lab has a large radar dish that can easily fold down to the roof of the lab when not in use.

#### Accessories

Two small space rovers and a landing base plate are included with the ship.

## **Overall Thoughts**

Overall this is still my favorite LEGO set ever. I think the main reason is that this ship was so different from the other Space sets. With the ability to separate into different sections and a great color scheme of old gray, white, and blue this is one of those sets that could easily still be popular even with the saturation of the movie themed sets.

This doesn't mean that the Galaxy Commander hasn't its problems. The ship is very back heavy making it difficult to move around without pieces falling off. The white antenna on the front and side of the ship are very fragile and break easily. I can look back at the ship 23 years later and realize its problems, but as a child I have nothing but great memories with this set and rebuilding it was a blast!

#### What are your thoughts?

While doing some research on opinions of the Galaxy Commander I found a large number of people who agree with me that this ship is their favorite set growing up. I would love to hear from you. Send any comments or suggestions of favorite sets to ldp@millionaireplayboy.com.

Joe Fulton (a.k.a Lando Da Pimp) is a graphic designer and feature writer for the website Millionaire Playboy (http://www. millionaireplayboy.com) an online magazine for collecting toys, comics, movies, and assorted pop culture artifacts.

## Building: Vehicles

## Building Large Scale Cars

BrickJournal asked Zachary Sweigart, an automibile builder showcased in BrickJournal 3, how he built his models. This is his answer...enjoy!

Article and pictures by Zachary Sweigart

As you've probably guessed, this article is going to teach you a little something about building larger-scale cars. We'll demonstrate the ins and outs by building the '74 Ford Gran Torino from the popular 70's TV show "Starsky and Hutch", even though the principles shown will apply to just about any vehicle. The car is really rather simple in its design so it's a great way to start if you've never really tried your hand at building big vehicles.

The first thing to keep in mind when starting out is to make your vehicle of choice a lot like a real car. In builder's terms, you have to build from the ground up.

The steps are simple: First, start with a basic frame. It might be helpful to lay the pieces out that you want to use in the basic shape of the car. This will give you a good idea about where things will connect. As you can see in the Torino, most of the strength of the car lies in sides because they connect the front half and the back half together. Doors are really an option at this point, but you should decide that before you start building to save yourself some grief later on.





*Pay attention to where the chassis connects with the body. Most of the strength will be in the sides* 





Technic axles and bushings make good axles



Any wheels in the six-wide range will work great

T o keep your car rolling merrily along, I suggest independent axles for both the front and rear of the car. A vehicle of this scale will turn much more smoothly by using 6-wide axels and Technic pieces. Look at the axel model for the Torino. Yes, it's a bit blocky, but it is very strong and can be easily lowered or raised to fit the appropriate ride height of the car.

(Speaking of easy, keep in mind that a car built on a modular system will be easier to modify later on, or to use as a base for a new model.)

Secondly, make sure you have a really good picture of what the end result will look like, whether it is a mental image or an actual photo. Checking your model against the real thing constantly may be a pain, but you'll save yourself a lot of rebuilding later on.

Speaking of the real thing, you should probably try your hand at cars with simpler lines before tackling exotics like Lamborghinis or other cars that require a lot of curves and other unorthodox styling cues. For starters, classic muscle cars and pickup trucks are easier fare because of their simplicity.



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Using upward-sloping (inverse) 1 x 4 bricks are an easy way to make wheel wells. Arches can also be used, but to a lesser degree as they are not as versatile

ne of the hardest things to get right is the roof line. Notice the use of a simple hinge and off-setting the pillars of the windshield to create its shape. Using a standard system like this will allow you to design your windshield around any shape and size. (I apologize for the lack of an actual see-through windshield. I guess this car is going to catch some major bugs on the interstate.) Moving to the rear, you can either use the same hinge technique from the windshield to make your slope, or simply step the bricks as seen on the Torino.

## There can never be too many tiles on a car.

Third, it's all in the details. What makes the car you are building stand out? What are its trademarks? For the Torino, we have important details like the angled front grill and the white racing stripes running the length of the doors and the roof. Details always make a good car better.



The hinges in the windshield and the stepped effect on the rear work great if used correctly







Make sure the grill of the Torino is angled. All you have to do is offset the studs-on side bricks a little bit.



Remember: the more details, the better your car will look. Mirrors, bumpers, door handles, and hubcaps all increase visual appeal.



*Right: Use tiles wherever possible to create a very smooth and sleek look. Stepping the tiles also creates a curved look depending on how you use them.* 

Notice the construction of parts like the front bumper and the grill. Using simple hinges or stud-on-side bricks will increase your ability to add interesting details.

Now here's a little piece of info I can't stress enough; Use tiles! Tiles will add a classy look to your car as well as creating a very polished finish. There can never be too many tiles on a car. The most obvious and effective places to put them would be on the hood, the roof, and the trunk. After all, no cars have ever come from the factory with round studs sticking out of them.

These are all great ways to help you make better cars, or at least get you started in the right direction, but remember; the best work comes with experience. Don't be discouraged if your first experiment doesn't go as planned. With these simple tips and a little practice anyone can learn how to make a great-looking and functional car.





## Minifig Customization 101: Minifig Decal Design

Ok, the easy answer is to read the forum at FBTB (http://www.fbtb.net/) or Minifig Customization Network (www.MinifigCustomizationNetwork.com) and talk someone else into making the design for you. Actually you can find many designs at FBTB, MCN, and Classic Castle (http://www.classic-castle.com/); there are many great artists out there who cover all genres at these various sites. There are also a few sites where you can purchase decals and skip the design part all together. My site, Kaminoan's Fine Clonier (www.FineClonier.com), and Red Bean Studio's (www.redbeanstudio.net) are two that offer high quality printing featuring white, metallic gold, and metallic silver inks. But if you have decided to make your own, here are the basics.

### The Basics: Raster vs. Vector

There are two types of graphics programs, raster and vector. Raster image formats are made of tiny squares of color called pixels; these are primarily used in digital photography. The main graphic formats of the web, Gif and Jpg, are examples of raster image formats. When you zoom in, these images become blocky (or pixilated). Think of a puzzle where you can see the picture as well as the puzzle pieces. This type of image will always have limitations as it has a defined smallest point based on a square shape.

Vector formats are not based on a square but mathematics, as such if you zoom in or out you will never have pixilation because all points have a mathematical distance from the other points. EPS, to some extent PNG and native formats like AI (Adobe Illustrator) or CDR (Corel Draw) are vector formats. When you zoom in on vector art, it stays sharp and clean because the same math applies at whatever the magnification. Think of looking down railroad tracks, they never seem to meet. Even from a long distance they don't meet no matter how far you look down the tracks with binoculars, you maintain resolution despite the magnification. Vector graphics are used in illustration and design (Commercial Artwork), most home users, doing simple web graphics, drawing pictures, or photo editing don't have a need for these formats. However, for the best results it is important that you create your designs in a vector art program. If you don't have a vector program, consider a trial version of the aforementioned programs or Freeware Draw Plus 4 (http://www.freeserifsoftware.com/software/DrawPlus/default.asp). If you don't want to use a vector art program, raster programs like adobe photoshop can be used, just remember to set your dpi (dots per inch) as high as possible. This value is the resolution of your image, which is tied to its print quality.

After selection of your art program and familiarization with that program you can begin creating designs with templates for the torso and legs found here: Minifig Blank: http://www.brickshelf.com/cgi-bin/gallery.cgi?f=132284

#### **Decal sizes:**

Many other templates can be found at MCN (www.MinifigCustomizationNetwork. com).



#### Line Weights:

If I need a highlight or a really fine fold then I will go down to 0.3. I do this for several reasons: 1, I draw designs for many people and want them to have good results when printing (Various printers/color copier types); 2, I convert to jpg format (a lower resolution format for compression into a smaller file size for easy up and download from the

## Building: Customization

Customizing minifigures is not only creating new heads and bodies, but making decals to add armor and clothing.

Here, Jared Burks of Kaminoan's Fine Clonier Decals and the Minifig Customization Network gives an overview to designing and making decals.

Article and Art by Jared Burks



Raster Image: This is a simple representation of a raster image, a desktop icon which is presented at 32 by 32 pixels.

This is a simple representation of line weights, thinner lines are used for fine details, thicker lines for bold details.

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web), this means I lose some details, and thus my details need to be bigger; and 3, I try to stay in a similar design scheme as the Lego Group.

#### Important Point – Remember your printer

When creating art for use in the creation of decals it is important to remember the limitation of your printer. Most printers have difficulty in printing a line with a weight of less than 0.3 points (Line weight refers to line thickness, think of a line drawn by a #2 pencil compared to a mechanical pencil). Just because you can see the difference in your vector program doesn't mean you can print it, so test prints are important (You can draw details beyond the abilities of your printer due to the nature of vector art). A good point size range for details is 0.5-1.0.

## Color – What Color is That?

Draw and color your design as you would like, remember you can use the same color palette as Lego, which can be found here:

Official Lego Color Values http://www.peeron.com/cgi-bin/invcgis/colorguide.cgi Peeron Color Chart: http://www.peeron.com/inv/colors

One of the nice things about using Lego's palette is the consistency of color on your finished figure, but by all means use any color in your designs you want. How you color your design depends upon the media that you are going to print. Options include waterslide decal film, overhead transparencies, clear self-adhesive stickers, and paper. These different products can be found at many office supply stores, hobby stores, and even Wal-mart. If you are printing on a clear media keep in mind that the torso color is going to show through and contribute to your design. I actually design my work to take this into account.





Α

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*Clear Sticker Paper vs Water Slide Film: The figure in panel A was created with clear sticker paper and the figure in panel B was created with water slide film. Notice the differences in clar-ity between the two figures. (Figure design and comparison by Red Bean of MCN)* 



Choose a subject

matter, what do you

like? Search the web

for images to use as

reference. Decide

what part of each

of these images makes

this character

recognizable and try

to capture this in

your design.

## Jonathan Markiewitz

Director to: Duet (2006), Fake Commercial (2005), Please Drive Slowly (2005), The League of Extraordinarily Overpaid Actors (2004), and Batman: Revenge (2003)

www.jonathanmarkiewitz.com

## Subject Matter

Choose a subject matter, what do you like? Search the web for images to use as references. Decide what part of each of these images makes this character recognizable and try to capture this in your design. Here is a simple example, a space soldier.



The design process: Find a reference image, in this case a space soldier. The vest and a few features make the design. So we start with the shirt and go from there adding the pockets to the vest and a belt with a buckle. Remember the vest color will be added by the torso. Flesh tones or yellow could be added for the neck color, so you get to choose.

For the space soldier the belt, vest, and a few other small details makes him recognizable. Therefore, these are crucial as the torso color is going to have a big impact on the design. The white areas in the design will be clear when printed on clear media allowing this design to be applied to a black torso.

### Printing

Before printing on any expensive media always print a test page. Print your designs out on a piece of scrap material or paper. Confirm your color choices, colors on your screen will not exactly match printed colors. Confirm your details, you have been working on something very small in a vector art program, are your details too fine to print?

I prefer the results from waterslide decal film as it looks as if it was printed on the figure giving you the best results. Waterslide film is available from hobby stores or online. I recommend Micromark (www.micromark.com); they have a sample pack of clear and white film. Clear film will work well on any of the lighter colored Lego elements; however dark elements create a problem which require you to use a special printer or use white decal film. This is because the darker Lego element will show through the printed regions darkening them and in many cases completely concealing your hard work. If you use white film this gives your design the ability to keep the vivid colors on dark elements, however you will now have to print the torso color or closely trim your decal. If you print the torso color it requires a close color matching, use the references above (These color values are close but not always exact for all printers, as such they require a bit of experimentation).

As most people have access to inkjet printers or color copies (Kinko's, etc.) the instructions will follow to create decals using these types of devices. You will need waterslide label paper, again I recommend Micromark (www.micromark.com). If using an inkjet printer you need to order media specific for that device, however if you are printing your designs on a color copier or color laser printer, you will need waterslide paper for a laser printer. Print your designs using the highest resolution possible for your printer (just like you did when performing your test print). Once printed be very careful not to handle the sheet of decals until the ink dries. After you have printed using an inkjet or color copier, you must apply an overcoat to the decals with clear spray paint, available at any home



improvement store. Apply several thin coats and allow them to dry between applications (2-3 applications normally does the trick). This will protect the ink from the water used in the application of the decal. Even if you have waterproof ink in your inkjet printer, this is critical! Once printed cut the decals from the page and follow the manufactures instructions for application of your decals. For tips and tricks see the next article in the series.

The finished figure: Now that you have your decal, apply it and add a few touches and you have a nice custom figure. (Face design by Bertramtalespinner of FBTB, Helmet by miniMitch, & Gun by The Little Armory)

Coming Next Issue: Minifig Customization 101 – Minifig Decal Application

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## Building: Custom Aliens

## Creating Custom Minifigure Aliens

Ever wanted to make a new head for a minifigure? Here's one approach!

Article and Photos by Peter Reid



Fig.1 – Some of my favourite custom aliens – Moonface, Raglon and Winky

When I was young, I was always disappointed that there were no minifig scale aliens. My classic spacemen had only each other to destroy, and I thought that was a shame. Things have improved since the late 90s. We now have Life on Mars aliens, Harry Potter goblins, and various species from the Star Wars universe. So nowadays, if you need a funny head for an alien delegation, there are quite a few 'legal' choices.

I used the custom alien solution (fig.1) before all these alternatives were available. I think they retain a certain charm despite the obviously 'impure' philosophy involved.

To be honest, there's not a great deal of LEGO mutilation involved in making these...all you really need to sacrifice are 1x1 round bricks, and possibly an old torso or two.

#### **Shopping List**

The best place to get everything you need is Games Workshop. They stock a fantastic (though somewhat pricey) range of paints and brushes, as well as a brilliant fine-scale modelling putty known as Green Stuff.

If you can't get to a Games Workshop, then head for your local art supplier. They should stock a product called Milliput, which is excellent. You should also be able to get hold of paints there.



## Things You'll Need

- 1x1 round bricks (in poor condition, preferably)
- Old minifig torsos (to hold during the sculpting and painting)
- Milliput (standard yellow/grey) from an art shop Or
- Green Stuff from Games Workshop
- Wire
- Superglue
- A selection of paints (I favour acrylic, but enamels will do)
- Enamel Varnish
- Brushes
- Craft Knife
- Sculpting tool (toothpicks are great for this)
- Q-tips®

Fig.2 – Some of the items you'll need

## Preparation

Decide what type of alien you'd like to do. For the purpose of this article I'll be showing you how to make a Cyrian. These are cute, easy to make aliens that I've made loads of.

For Cyrians, I like to shave a little bit off the top of a 1x1 round brick, and glue a bent pin into a small groove at the back (figs.3, 4). The wire is useful because Cyrians have a potentially delicate eyestalk, which might snap off during play. It's much less likely to come off with a wire running through it.



Figs 3 & 4 – Basic frame



Figs 5 & 6 – Initial sculpt

Lay down some newspaper, and get a jar of water and some kitchen roll in your work area. In my keener modelling days, I was always having clumsy moments with paint, which ruined my bedroom carpet. You have been warned.

Separate two equal amounts of your chosen modelling compound (two pea-sized lumps from each strip should do fine). Mix them together thoroughly, ensuring all the streaky bits have been mixed together.

Apply some of your modelling material to the head, and try to get the basic shape. Use a toothpick or similar instrument to control your sculpt, and remember water will smooth out any rough areas.

When you have a head you like, put the model to one side and wait for it to dry. Two-part modelling compounds like Milliput and Green Stuff generally take about three to four hours to totally dry (the clay starts to noticeably harden after about half an hour – and will be unworkable after about an hour). It's often best to tackle these sculpts in two or even three separate sessions, so you don't end up ruining what you've already achieved.

When you've mastered the basic shape, have a go at adding some detail. Rolling out very thin balls or sausage shapes is good for all sorts of things (teeth, horns, eyelids). You can attach them to the main model with a moistened toothpick, and with a little practise, you'll achieve some very pleasing results.

#### Painting

I have to say; acrylic paints from Games Workshop do the job for me. I'm not that well acquainted with spirit-based (enamel) paints, and I think they're a bit of a pain, really. I certainly don't want to be messing around with white spirit whilst trying to get a decent thickness of paint. Acrylics can be thinned with water,

which makes them very user friendly. And when they're dry, they are totally waterproof.

All my Cyrians are purple. I don't know why, it just works for me. Firstly, the models are undercoated with black paint, and then I build up the highlights, working from dark colours to light.

Finally, detail is painted in. It may take beginners a while to master some of the techniques of painting, but persevere and you'll get better quickly.

After the model is painted and dry, the whole head should be given a coat of varnish. I prefer gloss, but it's entirely your choice if you want a shiny or matt finish. I use a Q-Tip to apply the varnish (it saves ruining your brushes). The varnish takes ages to dry, and is probably best left overnight. It's worth doing, though, as your custom aliens will survive years of play with the protective coat.

Once they're painted and dry, you can have lots of fun trying out various torsos, and giving them guns. I have to plug the Little Armoury here: the custom weapons they produce are totally brilliant, and really fit in well with the feel of the aliens.

When the creatures are ready, you can get down to the serious part of the operation...getting out your LEGO spacemen and killing all humans!

Have fun! 🚺

Peter Reid wrote about Building Better Bots in Issue 2 of BrickJournal, and his online gallery can be found here: http://www.brickshelf.com/cgi-bin/gallery. cgi?m=Legoloverman

Fig.7 – Painted and finished aliens



## **Last Word**

#### Wow, it's cramped in here!

I hope you liked this issue - this one was the result of more than a few people writing, taking pictures, and editing...and even drawing!

*BrickJournal* is growing, and people all around are taking notice...including the LEGO Group. We were congratulated by the CEO for our third issue, and now there are some great things happening as a result. You'll see the results in the next few months in the magazine, online...and maybe in your mailbox.

But what's up for the next issue...

One hint: skyscrapers.

Another hint: Very large spaceships. Last hint: a big boat!

Til next issue,

## **Bricks for Thought**



by Didier Enjary



#### by Greg Hyland

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# **GIOT YOUR TYPICFIL BRICKS.**

an Diego

Little

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If you have seen THE engraved Brick Badges at Brick-Fest<sup>™</sup> and other LEGO conventions, you have seen the work of Tommy Armstrong, the Brick Engraver. He can engrave names and line art directly to a brick, making it a unique item for things like keychains, badges, and models.

A new innovation from Tommy is WoodStitches<sup>®</sup>, where a wood veneer is bonded to LEGO<sup>®</sup> elements. These elements can be used with other LEGO bricks and also to create beautiful mosaics (such as the one at left) and desk nameplates.

> If you're interested in seeing the wide assortment of brick engravings and finishes that Tommy offers, you can go to **www.brickengraver.com** and browse through his catalog.

> > You'll see that his work is not typical.

And neither are his bricks.

H

the Brick Engraver. tfa@brickengraver.com

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