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Fall 2008 Volume 2, Issue 3 **Editor in Chief** Ioe Meno **Photography Editor** Geoff Gray **Business Manager and Proofreader** Carin Proctor **Copy Editor** Allan Bedford Proofreader Eric Nolen-Weathington **European Bureau Editor** Melody Caddick West Coast Editors Todd Kubo Ashley Glennon Layout Artists **Didier Enjary Contributors:** Steen Sig Andersen, Tommy Armstrong,

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

www.lugnet.com www.Brickshelf.com www.peeron.com www.brickmodder.net www.rustyclank.com

About the Cover:

A closeup of Bryce McGlone's version of LI 2! Photo provided by Justin Quan.



From the Editor:

Welcome to the third print issue of *BrickJournal*!

You're probably asking,"Why another black cover?"

Well, since this is the fall issue, I fell back to a seasonal idea, more specifically Halloween. Way back at our second issue online (which was 2005), we did a Halloween cover with a model built by Bryce McGlone. It seemed fitting to ask him to show another model for

this Halloween. It's just that it's black. Really black. Thankfully, the photographer, Justin Quan, did a great job with the model.

The rest of the issue is a nice collection of happenings and projects from across the LEGO community. I'm particularly happy that we got quotes from the owner of the LEGO Group, an interview with the CEO of the company, and some thoughts from the Hawaiian governor! This issue shows how high an NXT can fly, how the company is doing, how to build a small LEGO pumpkin, and a bit more!

What else is there? Well, you'll have to look. *BrickJournal's* mission is to show the community and invite others to join. We're doing that by reporting on events to show how much fun they are and where they are, spotlighting builders and projects that are among the best in the hobby, getting interviews and articles from the LEGO Group, and inviting you, the reader, to join events and learn how to build.

And who are we? I'm the Editor, but by no means am I the only person...there is a group of writers and photographers who contribute to this magazine and give it its voice. The articles in this issue came from Belgium, Austria, Japan, Quebec, Portugal, and Russia as well as the US. One of our writers customizes LEGO minifigures. Another is a college professor. Another was a Master Model Builder at LEGOLand.

All of them have one thing in common - they love the hobby and its community. I hope you have as much fun reading *BrickJournal* as we did making it!

Joe Meno Editor, BrickJournal

P.S. Have ideas or comments? Drop me a line at admin@brickjournal.com. Or go to 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.. Yes, *BrickJournal* has a website — www.brickjournal.com! You can check out the news there or look at the event calendar and see what is happening near you!

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Event Report BeLUG Weekend 2008

The BeLUG (Belgian LEGO Users Group) event was surrounded by a cozy atmosphere and a nice location. Located in the suburb of Linkebeek, roughly 9km from the city center of Brussels, the capital of Belgium, approximately 340 visitors (not including club members) attended over both Saturday and Sunday. Around 21 new club members signed up giving BeLUG a total of 118 members! – BeLUG formed around May, 2003.

This was the second 'club weekend', but the first to be held over a whole weekend in the Cultural Center 'De Moelie' (last year's 'first' event was for only one day). The event was spread over three different rooms; one for small stores selling mainly LEGO parts, custom stickers, sets and train goods, one for a larger store with LEGO sets and parts, new models displayed by LEGO and other MOC displays, and the main room with a stage and all other MOCs, including a stand for LEGO factory and the world premier of the new fabulous Green Grocer set! (set #10185).

On Friday 1st February, the exhibitors (from the Netherlands, Germany, and Belgium) set their models up in preparation for the weekend. However, the Friday night was not complete without the famous 'Belgian Fries' – cooked locally and a tasty treat, Mmmm!

Saturday was open to the public at 10 a.m.. There were activities for the children and club members. The day was perfect with sunny weather and for some, a trip to the city where one can buy some of the best chocolates, ice cream, waffles and beer in the world! For anyone who loves architecture, Brussels has some fantastic buildings and many to inspire your LEGO buildings and Café Corner delights!

On Saturday evening, at the 'De Moelie' in the Café section, BeLUG held their club meeting with competitions, activities and more. The lottery for the Hobby Train winner: 'Joris', Bricks-in-the-hand competition: Steven A/Steven V/Eric, Guess the weight of the empty Green Grocer box: Tom and the tallest 2x4 Brick Tower: Jan V/Peter F.

Sunday was again open to the public and as it is said, all good things must come to an end, the event closed at 5 p.m. and BeLUG were fast to tidy and pack-up. It was a very nice event! Many thanks to BeLUG, till next time!

If you would like to join the BeLUG club or for more information, please contact: contact@belug.be

Building BeLUG

De Moelie, 1630 Linkebeek Belgium February 2-3, 2008 Article and photos by Melody Caddick



LEGO Events

Quebec City -Celebrating 400 Years!

July 11th - 13th, 2008 Article by Melody Caddick Photography by Melody Caddick

and LEGO Canada

In the summer of 2008, Quebec City, one of the first cities in North America, celebrated its 400th anniversary. During this time, many companies and organizations celebrated in various locations around the city with activities, concerts, shows and other events.

LEGO Canada also participated in the celebrations where they set up a tent in the city park "Jardin St-Roch". Their mission was to recreate a large version of a smaller pre-built flag resembling the flag of Quebec City.

Over 3 days, LEGO Canada staff and the general public helped sort a varied assortment of '2x4' bricks needed to build the flag. Thankfully the weather was perfect for this outdoor type of 'hands-on' event where both children and adults joined in to help build the larger sized 'hollow' bricks needed for the flag.

Once built, the large 'hollow' bricks were then given to Erik Varszegi, a Master Builder from Enfield (LEGO U.S.A.) who, throughout the day, placed them along with other bricks previously built to help form the flag. On the last day of the building event, Sunday the 13th July, 2008, the flag was finally completed!

As well as building the flag, children and adults could amuse themselves with the many building tables and variety of bricks, subscribe to the LEGO Club and go into the competition to guess the number of '2x4' bricks that were used to build the flag. And if you are wondering how many bricks were used to build the flag, a total of over 100,000 '2x4' bricks were used!

LEGO[®] SENDS IN THE TROOPS FOR GUINNESS WORLD RECORD

As part of its 50th Anniversary celebrations, LEGO UK has succeeded in setting a new Guinness World Record for the largest number of mini figures ever built and displayed, using LEGO Star Wars Clone Trooper figures from the new *Star Wars: The Clone Wars* movie range. Constructing 35,310 figures in just 6 ½ hours on Friday, 27th June 2008, all proceeds from the attempt were donated to The National Autistic Society, the UK's leading charity for people affected by autism.

Exploding onto the big screen on August 15, *Star Wars: The Clone Wars* is the hotly anticipated CG-animated adventure from Lucasfilm Animation. On July 26th, LEGO will be joining these epic battles with the launch of a new range of iconic vehicles and mini-figures based on scenes and characters from the film.









A World of its Own!

Austria LEGO[®] Show, St. Pölten, Austria, March 28-30, 2008

Article by Verena Schaden (www.brick.at)

Photography by LGOe (Austrian LEGO Fan Group) Members More than 19,000 visitors! Professional lightning with spots on alloy racks, a fog machine with dry ice... being part of a large modelmaking fair means having to handle pretty different numbers, problems and questions than a usual LEGO show. For the Austrian Club it was the first time and a very cool experience.

The modelmaking fair "Wunderwelt Modellbau" in St. Pölten every year provides interesting highlights for model making fans. This year the visitors could see more than model trains, remote controlled planes or cars. The 2nd floor of the fair area invited attendees to visit a world of its own — a LEGO show on about 700 square meters.

The space room was filled with fog, ultraviolet and strobe lights. A galaxy rotated on the ceiling for a really special scene mixing old classic space collection parts, Star Wars and Space mocs.

The participation area gave small and (of course) big kids the chance to play with MINDSTORMS stuff like robots, a slot machine or an egg plotter. Slot car fans could duel with fast LEGO racing cars on a Carrera track. You can imagine that this room was nearly always crowded and many kids gave their parents a hard time by _____

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wishing for this cool stuff. But pssst: I also heard some adults badgering their mates with ahhh's and ohhh's and plans to bring back their LEGO from the attic. Mission accomplished ;-).

Last but not least, the biggest room was filled with dioramas, buildings and trains, offering highlights for everyone who has not found his favorite theme in one of the others. For fans of mosaics and music there was a big mosaic of the famous Austrian musician Falco. History fans found some showcases with very, very old sets. There were trucks, buses and ships as well as houses in Cafe Corner-style. Kids often preferred the Harry Potter diorama. It was kind of a "hidden picture puzzle" and they could earn a piece of candy when they discovered the mistake: SpongeBob was hiding in Hagrids hut. The castle theme was represented by a big and very detailed medieval diorama including a castle, a church and pretty scenery around. Further there was a huge Helms Deep (from the Lord of the Rings movies) model with more than 600 minifigs and a nearly 2 meters high model of Orthanc, one of the Two Towers.

The two highlights of the show were gorgeous models two German friends brought with them, the Capitol and the Frankfurter Bahnhof. The Capitol, based on the US Capitol building, is made of about 600,000 bricks and based on 4.5×2.2 meters. Its builder, Dominik, and his parents showed endless patience explaining the moc for interested visitors. They showed



building techniques, explained the modular construction, posed for photos and came up with answers on all the thousands of questions. Many, many thanks for that! The other eye catcher – the Frankfurter Bahnhof – is a building of superlatives. Based on 40m² it just blew everyone's minds. It's unimaginable how many details and cute sceneries are included in this building. To make it perfect, an Austrian train fan added a fully digitized rail track on 22 x 3 meters with astonishing train mocs up to 5 meters long.

Well, what should I say? We met so many people — old friends and found new ones. It was a great weekend! Stay tuned for next year when the Austrian club and friends from other countries will be back at the Wunderwelt Modellbau from March 27 – 29, 2009.











A LEGO Display for Children's Day!

Tomar, Portugal

Article by Luís Baixinho Photography by Comunidade 0937 Earlier this year, Comunidade 0937 (the Portugese LEGO fan group), was approached by the city of Tomar with the express aim of holding a major LEGO exhibition on June 1, Children's Day 2008. We had already planned to have one major annual public event, so the invitation fit perfectly within our schedule and we decided to go ahead with the plans.

For context, Tomar is a historical city located in central Portugal, and had been an estate of the Knights Templar when the order was dissolved in the 14th century (they were subsequently "revamped" in Portugal as the *Order of Christ*). It's easily accessible from all over the country, and has quite convenient infrastructure; notably a large sports hall right next to the town center. The city has an active culture and leisure department, which organizes regular events. It has one monument in UNESCO's World Heritage Sites list: the Convent of Christ.

The Community had previously held other public exhibitions, but this one enjoyed special status. It was meant to commemorate the LEGO brick's 50th anniversary in Portugal, and it would also be the first time we'd put to the test our latest quick-assembly strategies. In fact, the timeframe for the whole event was tight: some exhibitors would arrive late on Friday, others early on Saturday, and the venue was due to open that afternoon and close on Sunday evening. It was crucial that all work was done in time for the grand opening - the media and a number of VIPs were to attend, and they could not be disappointed!

The room was arranged with two main aisles, the center taken by Technic and Castle displays, and the sides with a combination of various MOCs, some of which

were for our own 50th anniversary contest. Also on the sides were the entries who took prizes in a previous children's building contest, sponsored by the organizers. The two ends had the City, Star Wars and Western displays. A side room had a Pirates and ExoForce display, along with a play zone.

All participants had to declare what their exact contributions would consist of, which allowed for optimal space arrangement. The largest display was a modular city, for which we had adopted a standard; it was assembled such that it was roughly one foot off the ground so that younger children could see the full layout from the ground. The city was, in fact, finished only minutes from the formal opening - one participant had a car breakdown, and the whole crew raced the clock to fit his module in just in time.

Some speeches were made, of course, and the exhibition was opened by Maria de Jesus, a smiling 114 year-old who has now rendered LEGO's 99 age limit obsolete. She was welcomed by the community's LEGO Ambassador, Tânia Baixinho, and driven around by Dr. Alcobia, from the city. Also attending were the Mayor and the Cultural attaché from Denmark in Portugal, who were both enthusiastic about the whole event and declared future support.

The first batch of guests included a number of known local collectors, notably a philanthropist who has donated his huge model train collection to the city (a museum is in the project phase). Most were interested in the AFOL community, which was a novelty to them, but also in LEGO's trains, "What's their system?", "How do the controls work?", "Can you do this and that?" The ensuing conversations were very fruitful, and have given us ideas for future use.

Later on Saturday, the public could finally visit the show. On that first day we had a predominance of adults and couples, and it was generally a calm afternoon. When we closed up for the night, the club part began in earnest, and I'm not allowed to disclose any further information about that!

Sunday, June 1st, was Children's Day proper. We had noticed the fine weather and sports venues nearby full of children, and so we thought we might not be able to draw their attention to a closed environment. That was, as we'd soon found out, a colossal misjudgement. From the moment the gates opened to the moment they closed, a huge tide of families clogged all available space. We were busy doing PR work the whole day, which was great, and found that a number of visitors had traveled considerable distances to be there. (I think we were helped by announcements on national TV broadcasts.)

The community and the city are now planning next year's event, to be held in a larger pavilion. We'd like to invite you all to attend, or better still, to join us with your MOCs!













Mont St. Michel, France

LEGO Landmarks in Japan Piece of Peace Display, Japan, February 1 - August 31, 2008

Photography by Masao Hidaka

Japanese LEGO Master Builder Kazuyoshi Naoe built 26 UNESCO (United Nations Educational, Scientific and Cultural Organization) World Heritage sites for a display that toured through Japan in 2008.

This is a gallery of some of the model



Acropolis, Athens, Greece



Istanbul, Turkey





Nubian Monument, Egypt



Itsukushima Shinto Shrine, Hiroshima, Japan

Colosseum< Rome, Italy





Nera, Japan



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Kathmandu Valley, Nepal



Angkor, Cambodia



Sagrada Familia, Barcelona, Spain

Build a Roy

th Square &



Sphinx and Pyramid, Giza, Egypt



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All Aboard for the 2008 National Train Show!

July 18-21, 2008 Anaheim,California

Article by Joe Meno Photography by Scott Lyttle and Joe Meno



Anaheim, California was the 2008 host for the National Model Railroaders of America's (NMRA) National Train Show. Participating in this event were eight LEGO train clubs who are members of the International LEGO Train Club organization (ILTCO):

San Francisco Bay LEGO Train Group (BayLTC) Southern Pacific LEGO Train Club (SPLTC) Greater Florida LEGO Train Club (GFLTC) North Carolina LEGO Train Club (NCLTC) Northern Georgia LEGO Train Club (NGLTC) Southern California LEGO Train Club (SCLTC) Puget Sound LEGO Train Club (PSLTC) and Greater Portland LEGO Railroaders (GPLR)

People from across the country came together make the largest LEGO train display on the West Coast, with over 50 club members contributing to the layout.

Over 4,500 square feet was used by the groups for display, with layouts made of city and countryside – one of the larger layouts was of a California forest fire, which not only displayed the burning forest, but the camps of the firefighters and helicopters dropping water and retrieving water from a nearby lake. Several builders contributed to this part of the layout, with impressive results. ILTCO President, Steve Barile, recalls, "The entire layout was fantastic. The sheer logistics to get a layout of this magnitude setup is staggering. And the amount of cooperation, especially in an all volunteer organization, is mind blowing. But that's just par for the course in the LEGO community!"

There were other things to be impressed with — the skyscrapers created a skyline that no other layout had in the show, with some buildings several feet tall. There were also bridges that were longer (with one seven and a half feet long), spanning between layout sections. A wind farm was placed on one of the slopes of the display, with the windmills all turning thanks to some internal motors. A nearby farm had wheat and lettuce ready to be harvested, while some cows watched the trains make their rounds.

The trains themselves were marvelous – a train yard displayed the many trains that were not running on the tracks. Another part of the layout was a LEGO version of Hollywood, complete with movie sets and film crews!

With the site of the show being in Anaheim (home to Disneyland) there was a layout devoted to the Disney parks - Disneyland and Walt Disney World (WDW). A layout of WDW was built by members of the Greater Florida LEGO Train Club and the Northern Georgia LEGO Train Club, with Main Street, Big Thunder Mountain, Space Mountain and other landmarks from the Florida park placed in the layout. A separate larger layout of Disneyland was also shown, with the Disneyland Train Station and Main Street. This Disneyland layout is part of a growing layout of the entire park, which is being built section by section.

For many of the builders, the show was also a social event to catch up with old friends and make new ones. After hours, there were get-togethers and dinners for the ILTCO members, including a pizza party hosted by the LEGO Group, complete with door prizes, and a cookout held by the host club, the Southern California LEGO Train Club (SCLTC).

Total paid attendance was 28,000 and the LEGO layout got coverage from local television and radio stations. Next year, the NMRA show moves to Hartford, Connecticut — coincidentally, not too far from the American LEGO headquarters in Enfield. Mark the dates— July 5-11, 2009 — see you there!















Bricks Turn up in the Unlikeliest of Places...

What happens when BrickJournal goes to one of the largest conventions in the US? Joe Evangelista tells us!

Article by Joe Evangelista Photography by Joe Meno and Mariann Asanuma Comics. Costumes. Cute Girls. Free Giveaways. In the first five minutes at the San Diego Comic-Con you think you've seen it all. You're up to your ears in free posters and swag, pushing through the crowds when you see it – a shining beacon above the madness that simply reads: LEGO. For the last several years, LEGO has had a booth at Comic-Con, offering a view of upcoming sets and allowing customers to purchase ones from the existing line. They also offered a chance to buy an exclusive Comic-Con set, of which only 500 were produced, specially for the event. This year showcased an Indiana Jones set where people stood in line again and again in hopes of pulling a winning ticket to buy one. Yes, you need to *win* the raffle in order to spend money... it wasn't the most logical way to sell the sets, but it was the fairest, and it sure did work in getting people to return to the booth! There was also another exclusive set released to promote the new Star Wars series, "The Clone Wars." This set had a run of 1200 and didn't need a lottery ticket to be purchased.

The little plastic brick continued to wow Con-goers this year by expanding its role in the digital world with three playable demos of the new Batman LEGO game. Instead of just letting fans play the game they actually made a scavenger hunt out of playing the game! In conjunction with *DC* and Warner Bros.(WB), LEGO had a game station at each of these booths on the convention floor. After playing at each station, players were rewarded with part of a Joker minifig: the head, torso, or legs. Upon playing at all of the stations the players could put the Joker minifig together and go to the *WB* booth to receive a special display box already containing Batman. It was a unique way to handle a convention freebie and while some of the lines were a bit long at times, it was nonetheless fun to take a break from the madness and bust up some virtual LEGO bricks!

The newest LEGO draw this year wasn't at the LEGO booth but at the booth for the publisher of *BrickJournal*. Amidst the comics booth section of the show (i.e. the "non-Hollywood" section) a few well-placed LEGO creations became a huge

attention grabber for anyone who walked by the TwoMorrows Publishing booth. A brick-built Wall-E made a special Con appearance for the duration of the event with other notable creations (Star Trek Ships, a mosaic of a historic Japanese figure, LI 2, and some small Mecha rounding out the small table). Response was so strong that TwoMorrows intends to reserve additional table space for next year's event in order to have a larger display space.

But LEGO wasn't just on the show floor of the event, for the first time ever it made its way upstairs to a panel room. "LEGO: Brave New World" was the title in the Comic-Con booklet for a panel discussion late Friday morning. It was vague; it didn't give any other details except to mention who would be there, but the room filled to capacity! It filled so much that about 50 people had to be turned away once the panel started!

There were no secrets leaked during the panel, just a lot of jokes with the audience and a clear theme signifying that you don't have to stop building with LEGO once you reach your teens. The panelists all told stories to the audience of why they build and what influenced their creations. Bryce McGlone, designer of the model on this issue's cover, talked about his inspirations and the unlikely pieces he's found uses for. Brandon Griffith rallied the audience with a few well-placed Star Trek jokes as he told the story of building his ships. And Jessi Pastor created a stir amongst the audience with some of her cool creations. All of this lead to a lot of interesting and funny questions from the attendees. Joe Meno was also on hand to talk about *BrickJournal* and how everyone can get involved in community events. The reaction to the panel was stellar! The crowd loved every minute of it so much so that we were getting the next group annoyed who were patiently waiting for the LEGO nuts to clear out of the room.

At the end of the day it was clear that LEGO took the Comic-Con event by storm. With so many things happening in the LEGO world for the coming year fans should book their tickets now for San Diego Comic-Con 2009!



Mosaic built by Brandon Griffith.



Kaminoan's Fine Clonier. For all your minifig decal customization needs.



San Diego Comic-Con: A Model Builder's Perspective

A former LEGOLand Master Builder takes a look at the LEGO Group and its involvement with the convention

Article and photography by Mariann Asanuma I guess that I can call myself a veteran attendee of the world's largest comic and popular arts convention in the world. I've been attending, and in the past few years working, at the San Diego International Comic-Con for 16 years. I have seen many things change in that time. I've seen the convention explode from fitting into just one hall to now encompassing the entire Convention Center. As a LEGO enthusiast, I remember thinking for a number of years – Where was LEGO? With licenses such as *STAR WARS, Harry Potter*, and *Spider-Man* just to name a few, I couldn't believe that there was not a LEGO booth at the Comic-Con.

Now, I can understand for those of you who have never attended the Comic-Con that you can't completely grasp the full monster that it has become over the years. Even if you've seen it on TV it is hard to imagine the full blown impact of a convention that attracts over 125,000 people every year. I have to admit that I often get overwhelmed by the sheer number of people -- and I know what to expect. I suppose that is part of the reason that LEGO took so long to come to the Comic-Con, they just didn't know what it was.

To those uninitiated in the ways of the Comic-Con, you might assume that it is just about comic books, and in the beginning, it was. Now, however, it is a vehicle to promote not only comic books but television shows, Anime, video games, and blockbuster films. Anything and everything that can be considered "popular arts" can be found at the Comic-Con. Toys, books, figurines, and yes, the original comic books, all can be bought, sold, and promoted there. It is also common to see fans dressed as their favorite Storm Trooper, Klingon, or more obscure iconic characters, just because they can. This year I even saw one person dressed as a Princess Leia minifig from the LEGO Star Wars Video Game.

In 2003, LEGO finally arrived at Comic-Con. I thought it was interesting that, although they did have a small booth, it was to promote -- at the time -- the new Bionicle Movie that was coming out on DVD in the fall. By that year, not only was I a fan of LEGO, but I was also working in the LEGOLand California Model Shop as a Master Model Builder. I wondered, why when there were obviously many LEGO fans that attended the Comic-Con, there was nothing that the LEGO booth had available to sell to them that year.

2006 is when LEGO really started to make a presence at Comic-Con. Not only did they have a bigger booth, but the models that were on display there were more impressive. By now many people have seen Erik Varszegi's LEGO Republic Star Destroyer. But in 2006, it was brand new. I had the rare treat to be able to see the ship only partially built, when I visited the Enfield Model Shop a few months before the Comic-Con that year.





In 2007 LEGO got even more impressive. Not only was a LEGO mural made by AFOLs on display, but they were raffling off the Ultimate Collector's Millennium Falcon as well as the much coveted 14 karat gold LEGO C-3PO. And I have to tell you, that although it was very cool, the gold C-3PO was rather heavy and just stood there. Also, Stormtroopers of the 501st Legion were handing out the equally coveted chrome LEGO C-3PO minifigs to children.

Each year LEGO brings bigger and better models, always bringing new models that tie-in with the current LEGO sets and themes. This year was no exception. At the LEGO booth there were three life-size models created by the wonderfully talented Model Builders Erik Varszegi and Steve Gerling along with the rest of the Model Shop crew in Enfield, Connecticut. Indiana Jones, his jacket properly rumpled, and his hat just so, held the crystal skull for all to see. Batman stood with his arms crossed





daring any evil doer to try and best him. I especially liked the detail work of his gloves and utility belt. Also, a Clone Trooper stood with blasters raised, ready to call his troops into battle.

There were fantastic murals promoting the LEGO Indiana Jones and Batman Video Games as well as the new Star Wars Clone Wars movie. As an added bonus there was the dynamic duo: Batman and Robin as life-size minifigs standing guard at the Warner Brothers booth to promote the new LEGO Batman Video Game coming out this November.

I have to admit that from a Model Designer's standpoint these two models were my favorites. Creating a life-size LEGO model is in itself quite a task, but to suggest the movement as well as to keep the color patterns all in order, makes these two models that much more difficult to design and build. Even though I myself am a Master Model Designer, I always like to see what fellow LEGO Model Designers are working on. Seeing their work inspires me to be that much better.

Not only was the LEGO Company well represented, but for the first time *BrickJournal* and Adult Fans of LEGO (AFOL) had a voice as well. Hosted by *BrickJournal's* own Joe Meno and Joe Evangelista, this panel, "LEGO: Brave New World", featured Bryce McGlone, Brandon Griffith and Jessi Pastor. The room, though small, was filled will row after row of people; most of whom were not AFOLs and not familiar with *BrickJournal*. I was excited to see the AFOL community introduced to a larger audience and possibly gain some new fans among the crowd.

LEGO has also begun to understand the collectability factor of Comic-Con exclusives. Two years ago they had their first, and in my opinion one of their best LEGO Comic-Con exclusives. It consisted of a Batman and Joker minifig artfully posed in battle and had a sound chip of the Joker laughing.

This year there was not one, but three different exclusives. For the Indy fans, there was a \$50 exclusive set that you had to draw a raffle ticket to buy. The lines for that one went round the booth, sometimes more than once. Another exclusive was the \$75 Star Wars combo pack. It consisted of two different sets, extra minifigs, and a double-sided poster. Due to time and money this year I was unable to get either of those (sigh!).

The third exclusive was one that everyone could get, if they took the time to do so. It was kind of like a scavenger hunt. You had to go to three different booths – LEGO, DC, and Warner Brothers – to try and catch the Joker by playing a sample of the new LEGO Batman Video Game (a very, very cool game, it should be noted). At each booth you received part of the Joker minifig – the head, torso, and legs – and once you had all three pieces you went to the Warner Brothers booth and received not only a Batman minifig, but also a handy little box to keep them both in. Although the lines were pretty long for playing the video game, most were able to get the full LEGO set in the end.

I have watched in the past few years as the LEGO Company went from having absolutely no presence at the Comic-Con to now having a very visible presence that becomes better and better every year. I am already looking forward to next year's Comic-Con and what surprises the LEGO Company has in store.

Indiana JonesTM and © Lucasfilm, BatmanTM and © DC Comics



Brickworld Returns to Chicago!

Article by Joe Meno Photography by Joe Meno and Brian Davis

Event: Brickworld 2008

Chicago, Illinois June 19-22

Brickworld 2008 brought LEGO fans back to Chicago from around the US and even some other countries. Over 300 attendees came to show and see LEGO models and meet.

The models were of every type – from a Great Ball Contraption to train layouts to robots. One room had a large train layout that had some of the landmarks of Chicago, including the Sears Tower. However, once you went around the corner you either saw a layout based on Coruscant from the Star Wars movies or a layout based on the Indiana Jones films, complete with a Flying Wing! However, there was more than just trains, as one corner was the space for a display of robots that were the size of a small child! On the other side, Jurassic Park was modeled in LEGO bricks. complete with dinosaurs.

The other room had large science-fiction oriented layouts, including a modern city in ruins that was the setting for some mecha (giant robots) battling and a moonbase that wrapped around the table loop. The Blacktron Intelligence Agency, a returning sci-fi layout, had grown even larger, with imposing towers and airstrips with squadrons of attack craft ready for launch. A new display was a group of near-future military craft for a fictional Austrian military force, named RAMM. There were some more train layouts here, but also the previously mentioned Great Ball Contraption and a area for robotic competitions.

During the day for the attendees, there were presentations that talked about LEGO and architecture, LEGO stop motion filming, and a talk about the LEGO adult fan community by a former LEGO employee who made the community the subject of her PhD



dissertation. There was also a roundtable discussion for train builders.

The LEGO Group was also a part of the event, providing prizes and the keynote speaker, Tormod Askildsen of the Community Development group. His speech talked about how the LEGO Group and the community are working together to create new products and ideas. He highlighted the LEGO Ambassadors and Certified Professionals, but also mentioned two groups as entrepreneurs: BrickStructures (a firm devoted to using LEGO elements as a medium to present architecture and engineering) and BrickJournal. As a surprise, an upcoming set was unveiled - the Death Star!

With Tormod were other staff members of the LEGO Group, including set designers and representatives from the upcoming massive multiplayer online game LEGO Universe. Finally, some videographers from the LEGO Club took video of the event.

During the public hours, people were not only treated to seeing all the layouts, but also some competitions – there were runs of the FIRST LEGO League challenge being done and later, car jumping contests, where motorized cars jumped between tables! For the attendees, here were some other contests, including building competitions and a chess tournament, where the winner got the new Castle Chess set. Also attendees were able to go to store events after hours at the local LEGO stores, where there were special offers awaiting.

Bryan Bonahoom, one of the event coordinators along with Adam Tucker, gave his thoughts on the event: "Brickworld was once again a great success in 2008. AFOL attendance increased by almost 50% from 2007. Display space was increased by 33%. Meeting space was increased by 100%. \$3,000 was raised at the charity auction. The Brickworld Team worked very hard this year to incorporate changes that would improve the overall event. These changes were very successful."

He also is looking ahead: "We have announced two new activities for 2009 already. The Brickworld Inspiration Award that will be given to an individual or group for inspiring others to be part of the community, and the World of Lights display - a collaborative display throughout the whole event hall to illuminate your creations. We don't know what 2009 holds in store for us all yet, but we are looking forward to finding out. "

Brickworld 2009 is June 18-21 in Chicago. It's a definitely a weekend to look forward to!

You can find out more information at www.brickworld.us.

















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FIRST LEGO League — Then and Now

FIRST LEGO League World Festival, Atlanta, Georgia April 17- 19, 2008

On FLL's 10th anniversary, BrickJournal looks back at the past decade and celebrates this year's World Festival!

Article and Photography by Joe Meno

FIRST LEGO® League's World Festival this year was a slightly different event than previous, as FLL celebrated its tenth anniversary. The differences were cosmetic – there were a couple of mentions in the event program and there were birthday hats that were given out to all the teams. It's hard to add another layer of celebration to what is already a wonderful event.

"It was eye-opening to see the level of competition from around the world. I learned that you have to be an all-around good team in technical, team work, presentation, and robot performance. It was a privilege to participate in the World Festival because it is a once in a lifetime experience." — Jason L., a member of the Roboraiders Team, from Hawaii.

Ten years is a long time – in terms of FLL, the current team members would have been in preschool and too young to see all the growth of the event. *BrickJournal* talked to a FIRST LEGO League team and a few people behind FLL to look at the past and future of the competition.

Beginnings

FIRST LEGO® League began in 1998 as a partnership between the LEGO Group and FIRST (For Inspiration and Recognition of Science and Technology). Dean Kamen (inventor of the Segway, among other things) talked with Kjeld Kirk Kristiansen (owner of the LEGO Group) to start the program. Kjeld spoke about why he started the program and his goals: "FIRST LEGO League is a powerful program and Dean and I share the same belief that when FLL teams research, build and experiment, they live the entire process of creating ideas, solving problems and overcoming obstacles, while gaining confidence in their abilities to positively use technology. My goal is to encourage children to design, construct and program their own intelligent inventions. This allows them not only to understand technology, but to become masters of it."

The person who started FLL, Tormod Askildsen (now part of the Community Development Department at the LEGO Group), talked to *BrickJournal* about beginning the program:

I think the biggest challenge was the fundamental requirement of building a scaleable international infrastructure. How could we coach teams, organize tournaments and ensure that all teams could practice with their robot on identical playing fields? The solution for the playing field came from 3M (now a supplier to FLL). Jim Gagnon, a 3M engineer and FIRST LEGO[®] League coach in Minneapolis came up with the idea of the FLL playing fields we know today based on specifications from Scott Evans (FLL Challenge Designer). He also worked with us in implementing the solution. The team coaching and tournament infrastructure was solved via FIRST's expertise and vast volunteer network in the US. Outside the US, infrastructure was built country by country, either through existing not for profit organizations or by encouraging passionate and talented individuals to set up a new organization. It takes time, but it works. Today FLL is operated by partners in more than 40 countries.

The FLL goal was simple and shared by FIRST and the LEGO Group; to inspire and stimulate young peoples interest in science and technology through an engaging, hands on and minds on experience driven by the children—the adult's role is only as administrator and coach. Ten years later, the goal is still the same.

Tormod also worked with many people in developing FLL:

I worked closely with my good colleague Soeren Lund during 2000-2003. Søren left the FLL team to deliver the next generation of LEGO Mindstorms, which gave us the NXT! But like myself, Soeren is still a huge supporter of the FLL program even though we are both working on other projects today. If you have been involved with FLL — you can never let it go !

At FIRST, Anna Maenhout was hired in January 1998, "to make FLL happen". She has been instrumental for the development and growth of the FLL program, - an incredible person! She never gave up, just kept going. And she is fortunately still there! Two other people at FIRST who have played critical roles in the development of the FLL program is Betsy Daniels and Scott Evans. Betsy for her work with the volunteer network of partners both in the US and Internationally, and Scott for being the clever and passionate brain behind the annual FLL game since 1999.

In the LEGO Group, Kjeld Kirk Kristiansen followed the development of FLL closely, he has participated in numerous tournaments around the globe over the years. To him, FLL represent very much the essence of what a LEGO experience is all about expressed through our Brand mission: "to inspire and develop the builders of tomorrow". Dean Kamen has also been an invaluable supporter of the program over the years. He was the one who came to the LEGO Group with the idea, and he has helped shape and adjust the concept over the years.

The pilot tournament happened in 1998, as Tormod notes, "The pilot tournament at the Museum of Science and Industry in Chicago in November 1998 was a huge milestone, as well as the memorable and significant statement made by one of the young female participants saying: "the best thing about FLL is that it got me out of science class!"

Staffing for Growth

Scott Evans recalls his start at FIRST LEGO League:

When I got here in 1999, there were slightly over 900 teams, and about 9 state tournaments. The FLL Challenge was designed by some college interns. The field was made with hardware supplies, like dowels, eye hooks, Plexiglas, and electrical tape. No two fields were alike, and you needed shop skills (and a shop!) to make everything. And speaking of "two" fields, the robots competed on one large and unmovable, 8-foot by 8-foot field, where one could interfere with the other. The robot only held 5 programs. Our rules were adapted from our parent high school robotics game, which involved 135-pound remote-control robots. The non-robot portion of the Challenge was to simply answer a multiple choice question. Our manual was two inches thick. Our end-of-year invitational celebration took place in a tent the size of residential garage...

In 1999, the first official FLL Challenge was FIRST Contact. The robot portion of the challenge had missions themed to rescuing the International Space Station after a close encounter with a UFO. 9500 children participated in 9 tournaments in the US. Growth



Kjeld Kirk Kristiansen



Dean Kamen



Tormod Askildsen



Scott Evans



The table setup for 2007's Power Puzzle. Two fields are joined together, with a center mission that awards points to both teams, encouraging teamwork



Dr. Woodie Flowers

started quickly, as the next year, FLL was international, with Norway being the first country to hold a pilot tournament in 2000. The Challenge that year was Volcanic Panic, where the theme was researching volcanic eruptions.

Scott continues, "By 2001 we had over 1700 teams (18,500 children), and nearly 20 State tournaments. The field was made exclusively out of LEGO elements, and placed on a field mat. Fields were cut in half and placed back to back. The rules were customized for small autonomous robots, and tailored with options in mind..."

Scott also details the progress that FLL has achieved:

Over the years, the standard table cost went down to \$60, the building instructions went onto a CD, our manual got to be 1/10 the size, with 10 times more info in it, the robot advanced to be able to handle unlimited programs, bigger sponsors started investing in us, and the non-robot portion of the Challenge, called the "Project Presentation" has led to patents being filed (one returning team, the Inventioneers from New Hampshire has two patents from the past two Challenges), and laws being changed!

Other nations joined FLL International, including the United Kingdom and Germany in 2001, and France and Singapore in 2002. The first official FLL International tournament was held in Singapore. By this time there are more than 3000 teams (27,000 children) involved and 119 regional tournaments. With the size growing as well as the numbers at FIRST swelling, the idea of a festival took form.

Making a Festival

Betsy Daniels describes how the World Festival began:

The World Festival grew from a small invitational event started when FIRST was still at Disney in Florida, and an idea between FIRST and the LEGO Group to showcase the program and its global nature. The first official World Festival was held in Atlanta, Georgia in 2003 with our Mission Mars Challenge. Forty-eight teams who were awarded our most prestigious award, the Champion's Award were invited, representing the 5000 teams globally.

The World Festival is hosted and managed by FIRST and is held in conjunction with the FIRST Championship which showcases all its programs together. It is a global celebration of the FLL Program. It is a unique proving ground for the program, incorporating new program aspects into the event that are rolled out formally in the following seasons.

Invited teams display strength across all award categories, and are often the Champion's Award team from their region. In addition, Operational Partners globally, nominate teams that demonstrate FLL Core Values (respect of self and others, integrity, learning is more important than what you win) throughout the season.

FLL's hallmark is its Core Values. While most competition focus on winning and rules, FIRST LEGO League instead focuses on creating a positive and encouraging atmosphere for the teams to do their best. It's having the teams and volunteers exercise mutual respect, courteous and compassionate conduct for others at all times, to act with integrity, to demonstrate Gracious Professionalism and to encourage everyone else to do the same. Gracious Professionalism is a broad and uniquely FIRST thing – it's simply doing , as Dr.Woodie Flowers, National Advisor for FIRST states, "high-quality, well-informed work in a manner that leaves everyone feeling valued." At the World Festival, it comes out in the camaraderie that quickly forms between all the teams – there are no competitors. Everyone starts a friend. Everyone helps. And most importantly, everyone matters.

When asked about the social events at World Festival, Betsy states:

We incorporated the social activities into World Festival from the start. We wanted to offer the

teams the opportunity to get together in an informal setting and have time to talk to one another and share mutual experiences and interests.

The FLL Celebration in the Park offers kids time to share the universal favorite treat, ice cream, play games and watch team performances. The kids sing, dance, and perform for each other, uniting in a mutual show of respect and fun. It has grown into one of the most popular activities for the entire FIRST Championship.

A team member of the Roboraiders, Kyle F. agrees:

Our experience in Atlanta showed us more than just robotic inspirations and solutions. It was a window to the lives of other people and cultures. By looking through it, we learned about both the world and robotics.

2008 World Festival: Storm Damaged?

World Festival 2008 started in an Atlanta that appeared war-torn. Only one month before the event, a tornado hit downtown Atlanta, damaging hotels and part of the Georgia Dome and the Georgia World Congress Center, where much of the presentations and the competitions took place. While there were some questions about the facilities, they were quickly answered when the teams converged on Atlanta.

While the area around World Festival was in a state of controlled chaos, with hotels with blown-out windows and cordoned off areas for repair crews, the event started on schedule. The opening ceremony for FLL had a bit of a celebration for its first decade and an award was given to Tormod for starting the program. He recalled some of the special teams he has seen in past FLL tournaments:

One of the most impressive teams I have met was an all girls team in Minneapolis. These 6 teenage girls wanted to participate in FLL, so they formed a team and had to look for a coach, as they could not sign up without an adult coach. They won several awards at the Minnesota State tournaments. Another was an incredible team of 6 boys and a girl representing all ethnic groups in Singapore. The girl was their team captain. And there was "DreamTeam" from Vorbasse, close to Billund, who won the Scandinavian final in 2001 demonstrating creative solutions in their problem solving which challenged the set of rules for the FLL game to the limit. Simply because, in defining the rules, we had not imagined anything close to their spectacular ideas!

After the opening, teams went to their practice and setup stations in the room called the Pit – basically a large with cubicles for the over 80 teams that came from around the world. Teams from as far as Malaysia came to participate. Betsy finds this the most special part of the event for her: "Each team is so unique. Each has their own special story and FLL experience and for a few days we get to share in that experience with them. To be part of something that offers this opportunity is the most rewarding aspect of World Festival [for me]."

A Roboraiders team member, Spencer W. observes:

I don't really know how to explain it, just that it was really fun. I liked looking at the different teams' booths from all over the world because they decorated it with stuff from where they live.

The Pit turned into something of a display space, where teams showed off their home culture, and gave things to each other, such as buttons and little mementos to keep. There were other booths, too, including a large booth for the LEGO MINDSTORMS team, who brought along some LEGO robots and some of the volunteers behind the development of the new NXT system. LEGO Education had a booth to present a new LEGO NXT based system for the FIRST Tech Challenge.

During the hours of the competition, the energy in the Pit was palpable, but that was nothing to the Georgia Dome, where the robotic challenges were done. All eyes fell on the tables for the challenges, and with the cheers of all of the teams and their coaches and parents, the energy was something to experience. There were a total of three runs at the Georgia Dome for the robots, so during the two days of the competition, there was a constant back-and-forth going on with teams practicing and going to their heat. There's also a constant excitement that is everywhere.

The FLL Celebration in the Park after the first day of FLL took place as the day wound down. Starting with ice cream, and concluding with songs, skits and dancing by teams, the celebration was a wonderful showcase of friendship, as one performance ended









Some of the teams that performed at the FLL Celebration in the Park 2008.



with the entire team holding cards that say "Good Luck" in all the languages of the countries represented. The Hawaiian team taught everyone to hula dance, as in most of the audience! Everyone got a chance to dance and laugh with friends new and old.

The second day wrapped up the robot runs and also the presentations, which were running concurrent with the runs the day before. Again, the energy level shot sky high, as teams did their final runs. The awards ceremony was the last thing of the day, so beforehand, teams went and took a look at each other's booths one last time. The LEGO booth swelled with visitors, including the editor of WIRED magazine and the senior staff of the LEGO Group, including Kjeld Kirk Kristiansen, owner, and Jørgen Vig







Some of the FLL teams that were at World Festival 2008.

Knudstorp, CEO of the LEGO Group.

The awards ceremony filled the auditorium with all the teams decked out in their team colors, and sometimes costumes. The result was a room full of colorful hats, a few feather boas, and a few painted faces! The festive atmosphere made the ceremony more a party than anything else, celebrating all the teams and their achievements. It's this celebration that is most important – celebrating the journey and what was learned more than the destination. While there were awards to be won, the rewards were already gained with the teams in learning about problem solving, teamwork and other skills, not to mention the friendships made. In this respect, everyone won.

Afterwards, the teams went to the Pit and packed up. Goodbyes were made, and addresses and e-mails were exchanged. By the next day, the Pit was empty.

Looking Back, and Looking Ahead

Kjeld Kirk Kristiansen reflected on FLL's rich history:

In 1998 when FIRST LEGO League (FLL) was founded 200 teams participated in a pilot tournament/event in the US and in 2008 the number of teams is estimated at 10,600 which is a fantastic growth in just 10 years. Also the number of countries participating in FLL has increased immensely since the start in 1998 with only one country (the US) to at least 42 participating countries in 2008 - and I am sure that the number of participating countries will continue to grow in the future.

During the past 10 years many themes have been approaches and they have always reflected issues of current interest:

- 1998: Race against time (Pilot year - robots races through mazes for best time)

- 2001: Arctic Impact (Travel to remote arctic regions to study global climate changes and the potential impact of global warming on humanity)

- 2004: No Limits (address specific needs of individuals with disabilities to help them perform activities of daily living that many people take for granted)

-2008: Climate Connections (Discover intricacies of the study and research of the climate

By presstime, the challenge will have been announced for Climate Connections. Some things will have changed but others will remain the same, as noted by Scott:

In 2009 we will have about 12,000 teams in 40-something countries. There will be hundreds of tournaments, arranged in qualifier systems, and our end-of-year celebration will again take place in a super-dome, but the things that enable us to grow have not changed: We are still and always will be a magical mix of mentorship, technology, competition, and compassion, where being called a non-conformist is considered a compliment, and where people feed off each other's ideas, instead of smashing them.

Tormod sees the future in this way:

I want FLL to continue to grow of course! I would like to see many, many more schools and education systems embrace the program because of it's unique ability to make children with different interests and talents want to learn and master things which are hard to do. I have heard that in Singapore, 70% of all schools are now taking part in the program – it should be like that everywhere.

For Betsy, the future is open:

This is the most difficult question for me. The feedback we receive from teams attending each year is incorporated into the upcoming event. FLL has always prided itself in listening to its community and working to incorporate suggestions that fulfill its global vision. What will it look like in the future? Look to the children – they have the vision.

Perhaps it is not what they see, but what they have seen, that will define what the future of FIRST LEGO League will be. As two team members from Roboraiders reflect, first Timothy H.:

Well it was nothing like I've experienced before, and I travel a lot. It was like one of the most unbelievable things I have done with my life. It was something that I never thought I could possibly do, but this just opened my eyes to what one group of friends can really do when we work toward a common goal.

Erin M.:

"Going to Atlanta was one of the most influential experiences I have had in my life."

Here's to the next ten years!

Hawaii: A Robotics Success Story in Progress

"I would like to see many, many more schools and education systems embrace the program because of it's unique ability to make children with different interests and talents want to learn and master things which are hard to do." — Tormod Akildsen

In the past couple of years, there have been teams at World Festival from Hawai'i. The Hawaiian FIRST LEGO League program started in 2006, when Governor Linda Lingle, in a visit to FIRST founder Dean Kamen, got seed funding from NASA and sponsorship from BAE Systems to start a FLL program. Governor Lingle's support of this program is easy to understand:

"Our future is dependent upon innovation. It is truly tied to what is going to happen with our young people here in Hawai`i and around the world. Through partnerships to develop innovation and clean energy, we are creating a better Hawai`i for future generations."

Both Governor Lingle and Lieutenant Governor James "Duke" Aiona have been supporters of not only FLL, but other robotics programs, and have helped raise awareness of the programs at the state level. As a result, the community has embraced these programs, with local and international businesses stepping in to support with volunteers and funding. BAE Systems, for example, provides volunteers and mentors for the teams, and for its ongoing efforts with not only

Hawai`i but other programs, was awarded a FIRST Founder's Award at World Festival.

For FLL, Hawai'i started with 34 teams in the 2006 Challenge (Nano Quest), then almost doubled to 64 teams for 2007's Challenge (Power Puzzle) Because of the expansion, regional tournaments will now be split over the islands to allow more teams to compete. FLL has also become one of the robotics programs that is part of the Robotics Organizing Committee (ROC) in Hawai'i. This group is one of the first of its type in the US, where robotics programs such as FLL, FIRST, Botball, VEX, are in a state-level group supporting each other. The ROC is also working toward ensuring the financial stability to these programs by fundraisng activities.



Governor Lingle at a FLL tournament in Hawaii. Courtesy of Corrie Heck, Office of the Governor

These efforts have been rewarded with appearances in World Festival for both the FLL and FIRST teams. Another team from the Waiakea High School Robotics Club won three awards, including a First Place award at the Micro Robot Maze Contest, held in Tokyo and Nagoya, Japan. A winning tradition is growing in the islands, and it's a credit to the Hawaiian community and the vision of Governor Lingle and Lieutenant Governor Aiona. For them, it's what the future holds for the children who take part in these activities. Governor Lingle muses," Athletics are valuable, but only an elite few will become professional athletes. It's a different story for people with math skills. Students will drive technology and innovation in the 21st century and help our state develop renewable energy technology. Lt. Governor Aiona and I love sports, but there is no athlete on this planet who is going to solve the renewable energy problem. They are not going to find the cure for Alzheimer's because they have a great three-point shot. The students with the technical and math skills are going to be the ones."

As for what lies ahead, the Governor is hopeful: "These young people and their adult mentors are an inspiration to me in the fearless way they are embracing their future. Their enthusiasm makes me optimistic about our state's future."

Building:

H.R. Giger in Brick

Bryce McGlone talks about building his latest sculpture!

Article by Bryce McGlone Photography by Justin Quan

LI 2 is copyright 1974 HR Giger. LI 2 sculpture by McFarlane Toys, 2004

I've always tried to make LEGO look non-LEGO. Spirals, twists, layering, and textures have always held a fascination with me when building with LEGO. Over the years my particular style has gotten more and more organic and at times a bit outlandish.

Several years ago I built a model called "The Rack", an organic biomechanical structure loosely based on the work of H R Giger, the Academy Awardwinning Swiss painter, sculptor, and set designer best known for his design work on the film Alien. In fact "The Rack", one of my Bionicle models, is supposed to invoke the same feeling as the scene in Alien when the crew of the *Nostromo* descends into the derelict ship at the start of the movie.

Later in the Summer of 2007 I was looking at "The Rack" and thinking that not only was it not as Giger-esque as I'd once thought, it was also not as impressive a model as I'd once thought, and it didn't invoke nearly the dark brooding feeling I'd once thought. Of course, at the time, I was cannibalizing



it to build a dragon but that's beside the point. While building the dragon I started thinking about making another model which might invoke a darker feeling than the Rack: a more fleshedout version so to speak. My thought was to push LEGO into a slightly more evil direction than my usual.

After mulling it over for a while I

decided to find one of Giger's pieces of art that I could re-create in LEGO. This would involve me being something I call "true to the piece". Simply put it means that I wouldn't make up any areas not specifically on the model, and I'd model everything as accurately as possible. This would keep me from falling back on various "building tricks" that I'd come to use over the years. The idea was to push my building into areas I wouldn't normally build using techniques I wouldn't normally use. I wanted something that quite literally would push me to the limits of my skill, and then of course a bit beyond. I also wanted something which, when finished would have people ask, "Is it really all LEGO?" *before* they asked if it was glued!

Looking around I was ready to try and make "Spell I" (http://giger. com/Posters/PosterInfo11.jsp and http://www.sideshowtoy.com/mas assets/large/8201R.jpg). However I was worried about making it stand and the rather overtly sexual overtone of the whole piece. LEGO tends to be heavy and I didn't want to spend time figuring out how to make it stand, let alone how to make it stay together. I looked around using Google Images for inspiration. I often look at models on Spawn.com for inspiration. Back in 2003 McFarlane toys had made a sculpture of "LI 2", a Giger painting. Because I would already have it built in 3D reference and the sexual overtones were minimized, I decided this might be the one to make sculpture out of LEGO bricks.

Next I set out to buy one of the McFarlane sculptures off Ebay. I hit a \$20 bid with only 5 minutes left and thought "sha-bam!". The original piece was \$20, so I was thinking I had it in the bag. Five minutes later I was outbid by \$80. Figuring this was too much money that I could instead spend on LEGO I went to plan B: pictures.

I searched Flickr and found Benjamin Hahn in Germany. Several Flickr mails later I had 20Mb of reference pictures. Over the course of the next four months I would post a picture and leave a note for Benjamin asking for a different angle, closer, more light, whatever. He was always willing to snap off a few extra pics for me. Jas Nagra, a LEGO mecha builder, also took some pictures and was a huge help. However his McFarlane Sculpture is still in the box, so pictures are limited.

While looking at the sculpture I noticed several areas which could readily translate into LEGO. Specifically the eyebrow of the woman's face looked much like a Rakishi body from the



Bionicle series. Based on this one piece I decided to make LI2. The Rakishi back is both the original inspired piece of the model and the piece by which I measured the scale for the rest of the model.

Granted there were many, many areas that I simply had no idea what I would do. Only my waving, grasping hands seemed to have a vague idea of where the shapes would go. I would make shapes in the air and trace the lines of the drawings I'd made. I make both the drawings and gestures when I'm thinking of shapes which do not currently exist. This process I call the "molding of nothingness" that is at its core LEGO building.

As with many of my past models the sculpture turned out larger than expected. I planned on it standing approximately 24". The final model is 39"H x 24"W x 10" deep. The model itself is built using a variety of SNOT techniques and is one large chunk of LEGO. It is not modular in any sense of the word and weighs about 55 lbs. I don't know how many pieces are in it though I'd estimate it at around 6,000. Nor do I know how many hours it took to build; I'd estimate that at way too many. Much of the building process happens during driving, sitting, or reading. Those are the times the monster matures. Areas that were black or vague shapes become clearer.

While researching the original LI2 online I found an interesting story. To make a long story short Li was Giger's wife, and by many accounts the love of his life. Giger had made a painting titled LI1 several years before LI2. The first painting shows a much more dynamic dragon-like, alive, and vibrant woman. LI1 also has much less mechanical elements. LI2 has a decapitated head with a blank stare being fed by tubes. This painting was made the year before Li's death when she was presumably sick and dying. Thus it is postulated by some that LI2 is an expression of Giger's grief. This rather somber story gave my building sessions a whole different meaning and feel. I started to feel a responsibility to convey the sense of loss captured in the original painting. In the end I was a bit disappointed with the overall feel



of the model. It just doesn't capture the mood of the original piece. There's an elegance in Giger's work that just barely misses with the LEGO version.

That said I still love the model. I've learned so many different building techniques from making it. Building LI2 was unlike much of the building I had been doing. I like areas of it so well and others not so well. There are a few places I would have made differently. But this one will not be revamped; I never do that anyway.



LI2 is the most challenging model I've made. I wanted a model which would read well at about 20 feet off and then be interesting enough up close to examine all the little bits & pieces: one of those models you come back to see new details. Though I took great pains to be true to both the scale and shape of the original sculpture, some areas of the model don't match the original piece. Those areas are quite simply the limit of my building skill, patience, parts, and wallet. In particular, the three skulls above Li's face & the organic areas on each side of those skulls do not read very well. Many of those unfamiliar with Giger's work have to look at the original to understand that those LEGO pieces represent skulls.

All the problems aside I do have some favorite bits. I love the top hats on the sides of the larger skulls in each tube. I'm also fond of the McDonald's Happy Meal Galidor piece with the hands on the left tube, though it doesn't even come close to matching the original model. There's a section of stacked Onua masks made from a technique I'd love to use again. Then there's that pontoon lid on the bottom of the right tube which I'm fond of...





The LEGO Group: Jørgen Vig Knudstorp

The View from the Top: 2008

For the past three years, BrickJournal has interviewed the LEGO Group's CEO, Jørgen Vig Knudstorp. Geoff Gray, our inteviewer, has managed to maintain a conversation with these, and we continue the talk with this interview.



BrickJournal: Welcome Jørgen to the third in a series of interviews for *BrickJournal.* It's been a fun ride for both the LEGO Group and for *BrickJournal.* When we first talked (back in 2005), you had recently taken over as CEO for the company, and *BrickJournal* had just started publishing as an online magazine. At that time, you were working hard to turn the company around and get the core values back into the products and the company. By our second interview the turn-around was well under way and you were looking at more long term strategies for the LEGO Group. How is the health of the company and the business looking today?

JVK: TLG is actually doing very well now, in fact we are going through quite a bit of a boom: CITY is now five times larger than during the crisis five years ago, Creator sets are growing extra-ordinarily along with Technic sets, and while we are very successful in core continental European markets such as the Netherlands, Germany and Scandinavia, we are seeing very strong growth rates in the UK, US and Australia as well as Eastern Europe and Russia. This 'boom' is coming after we have drastically restructured our way of doing business; innovation, production, logistics and selling, and so it happens on one of the most modernized
and advanced business platforms in the industry. As a result the Group's health is strong and probably among the very best in the industry, which is no small feat in today's recessionary environment. I feel as if we have prepared for stagnation and crisis, and now it is here, and we are bracing the storm quite successfully.

In the 2006 interview, you mentioned that you were working toward moving manufacturing abroad. I understand that you are looking at taking back some of the manufacturing from Flextronics. Is this a move to bring manufacturing back into the company? Are you looking at moving to a different partner for manufacturing?

IVK: Yes, we moved out of Korea, the US and Switzerland entirely, while also a significant part of Danish manufacturing moved to Eastern Europe and Mexico. Flextronics and other outsourcing partners took over a significant part of our manufacturing in these countries. This enabled us to complete a move of 30 percent of moulding and 90 percent of packaging without any significant quality issues or output interruptions. The move happened as we also closed 7 distribution centers into three new ones, operated by partners (primarily DHL-Exel), and it happened in just over 12 months. Having completed this massive and risky move very successfully, we have now moved into a phase of optimization and stabilization. Here we aim to bring higher efficiencies in manufacturing, which has to do with better integration between plants and sales planning, in turn better equipment utilization and data sharing (common IT platforms); in laymen terms to know exactly where is each of the 30,000 elements we produce every minute, 365 days a year and where they are going next to be sorted, decorated and then packaged and shipped in the most economically and efficient manner. This process is better handled by LEGO supported by a small group of partners. Therefore, after the successful move to new low cost countries, we stay in these countries under LEGO management. Hence LEGO is adding significant new work forces in Mexico, Czech Republic and Hungary. We maintain external suppliers to benchmark our operations and keep surge capacity available, as well to service special needs that we cannot efficiently serve in our large scale 'machine'; an example is packaging of LEGO Factory products, or Belville sets. In some cases we have taken over manufacturing from Flextronics specifically. We continue to work with Sonocco, Greiner and other suppliers, also in China with Jetta and others (3% of our output is from China).

Since a small portion (OK, almost all) of your products is made out of different plastics, how has the recent spike in petroleum prices affected the business? Is the company shifting the types of plastics used for different elements, and what type of research does the company do internally with respect to new materials?

JVK: Oil prices have now increased from USD 25 per barrel at the opening of the Iraq war in 2003 to up to 140 per barrel in 2008. This has had huge negative impacts on our and others' businesses. This is in the form of cost of energy (moulding is energy intensive, both heating and cooling), and cost of transport. The cost of plastics was also impacted and the only mitigating factor for non-US dollar economies was the depreciating US dollar (40 percent decline since 2003), which means our prices on plastics was not exploding but however still under significant pressure. While raw materials are important to us, they are only 15-20 percent of our total costs.

When we first talked in 2005, you mentioned that we would see a lot more coming out of the (at the time) new LEGO Factory line. In our second interview, you mentioned that the project was continuing to grow. How well has the concept of "build it yourself" kits taken off, and are you pleased with the direction and acceptance of LEGO Factory?

JVK: We are extremely pleased with the reception of LEGO Factory. I think we are definitely still on a learning track. We have been pleased with the pick up in exclusives designed by fans, and pick-a-brick, but somewhat disappointed (at least I have personally been a little disappointed) in the pick up on design-your-own-models, and it is something we decided to re-address over the past six months, so I

"There are really very few markets where LEGO is not doing very well. We remain the number one player in Europe from Russia to the Atlantic Ocean, however we are also looking to future growth in the US."



Jørgen at the 2008 FIRST LEGO League World Festival. Photo by Tommy Armstrong.

look forward to the continued progress of this fascinating project. For us it is a core effort that we will continue.

Along with a lot of new themes (Mars Mission, Agents, Indiana Jones, etc) we have seen a lot of fantastic sets come out that appeal to older users, AFOLs and people interested in core building, such as Market Street and Green Grocer. How well are sets like this doing, and can we expect to see this line continue?

JVK: Well, these sets are also personal favorites with me. They are great, and designed by some of the fantastic people we have been getting in from the community. Hurrah for that. It is a pleasure to see them grow and come along so well. They are doing well, however they are niche sets and are like the large *Millennium Falcon*; not in mainstream distribution. You have undoubtedly seen the new Death Star, which I look forward to build during

the fall, along with the Beetle. I can promise more and continuing-to-be-exciting sets such as these will continue to hit the streets, thanks to the fan community's support – thanks.

In 2005, several of us were introduced to the concept of a new MMOG (massive multiplayer online game), now known as LEGO Universe. Since then, there have been press releases, speculation, and even changes in management teams heading up this colossal effort. Can you tell us a little bit about how this project is coming along?

JVK: It is going very well. I am online now in an early version. We have a group of fans working with us. It is all terribly exciting, and it will open a new paradigm of LEGO play, which I think prepares us well for an exciting future in the next decade or so. Therefore you can also expect us to launch it slowly but surely, and continue to develop it over the coming years. Full global presence of the multiplayer online game will not be before the end of this decade, but already next year exciting developments will become available. So it is a journey that we are determined to take on as an exploration together with the community of young and older (but young at heart :-)) LEGO fans, and then take it from there until we get it right, and learn even more. Very exciting. What can I say? It's why we are here.

When BrickJournal visited *Billund* a few years ago, we had discussions about the different markets that the LEGO Group was in, and the fact that America was considered an emerging market, whereas Europe was the mainstay of your business. Has the market in America picked up enough to make it a major portion of your business profit, and how is the business looking across different markets?

JVK: Yes, we have in fact very successfully grown our North-American presence. Both Shop@Home, the brand stores and general LEGO at retail is doing incredibly well. Profitability has improved accordingly, though the US dollar is certainly no help and creating enormous pressures on our profitability. There are really very few markets where LEGO is not doing very well. We remain the number one player in Europe from Russia to the Atlantic Ocean, however we are also looking to future growth in the US.

In the AFOL community, there seems to be a strong rift in the decision to drop the 9V trains for the RC trains. However, there was a compelling business reason for the move. Now that the shift is almost complete, how well has this move done for your company, and how well is the new line being accepted by the general public?

JVK: It has worked very well and the new line is popular and well accepted. The lower price points are of course much appreciated. We realize that many were 'intimidated' by the shift from 9V. Trains are very important and core of the LEGO experience, and should continue to be so. We are quite confident that the new PF train product releases planned for 2009 will be very well received by the AFOL community.

On a more personal note, your children are much older (relatively speaking) since our first interview. What are their favorite things to do and build with you now?

JVK: Well, Sebastian is now seven and deeply into Star Wars and Indiana Jones, while Filippa at six is still building with Duplo and then some Belville. The Duplo trains make it possible for my three oldest (the two above and Zachy, at four years) to build a complete layout in 1½ hours and then play at the dining table until dinner with several engines operating at the same time. This summer has had pleasant weather and Zachy is building wacky ships on the house terrace to sail in them in a small pool I set up for him. My youngest, Fiona is still just playing around with Primo elements at age 1½. Still waiting for her to put together her first Duplo bricks!

Finally, I think the readers would love to know what new things we can expect from the company in the near future? Is there some scoop you can give our readers?

JVK: Expect us to experiment with new core themes, obviously LEGO, but never seen before. Expect us to stick to our knitting (keep our focus — Ed.) in City and other core lines. Expect us to continue collaboration with the community, and direct sales and interaction, – whether through our own stores and the like, and dialogues. Also we will drive for presence in new exciting markets such as China and India. The new digital ventures, such as Factory, LEGO Universe and other new ones will also be key. I for one at least find our future incredibly exciting, and I look forward to exploring it together with you.





Behind the Scenes and Under the Hood of the Newest LEGO Factory Set!

BrickJournal takes an exclusive look behind the making of the Custom Car Garage with the set designers to see the challenges and triumphs behind the set!

Article by Joe Meno Photographs and art by Joe Evangelista, the LEGO Group, Joe Meno, and Stephan Sander This September, the LEGO Group released the fourth Factory Exclusive set: 10200 Custom Car Garage. Like the previous LEGO Factory sets, LEGO fans too designed this. The theme though was not trains, a modular building, or space ships. This time, the theme was hot rods! Work on this set began over a year ago, when three car builders were selected. From the United States came Joe Meno and Joe Evangelista, and from Germany came Stephan Sander.

Each person has different recollections of how things started:

From Joe Evangelista:

Designing a set for LEGO... for some this would be a dream come true, for others it is a natural progression of their interest in a hobby that has captured their imagination. For me it was a combination of awe and bittersweet wonder. I grew up with LEGO bricks, never had a "Dark Age", and often involved LEGO in any project that came my way. Thus while I was growing up, everyone made the suggestion that I should design a set for the LEGO Group, to which my reply was always, "You're right, I should! But why would the company reach out to me?" That's probably the reaction of any fan that is dedicated to a hobby; if the company responsible for one of your primary joys in life asked you to help them, wouldn't you bend over backwards with glee?

Like any lifelong fan of the little plastic brick, I darn near fell over when asked to be a part of the project (actually I think knocked over a few waitresses at the restaurant on my way down to the floor!). Perhaps the funniest thing though is that I hadn't actually built a LEGO car model in a very long time! I had progressed out of my town building years after high school ended and had been focusing more on space and castle in the recent years. What did a LEGO car look like anyways?!

From Stephan Sander:

In April 2007 I've been asked if I want to join the "Custom Cars" project. It didn't take a long time to think about the answer. In fact it didn't take any time at all and from this point I was in the team. A couple of days later we got some initial information about the set idea. Roughly speaking the goal was to create classic Hot Rods in minifig scale. That was all we knew about the project. As a kid I always wanted to work as a LEGO designer in the future, even without knowing what exactly this meant. This never came true - until now! And until the date I got the final set in my hand I always hoped that the custom cars project was not just a dream.

My memory of the start of the project was being invited to the project, after the LEGO Group found photos of hot rods I built on my homepage and on Brickshelf; the image host of much of the community. I had been interested in doing some kind of set design since the LEGO Factory was started, so I saw a fun project just waiting to happen! However, the cars I built that LEGO were bringing forward were built a few years ago – in the meantime, I had gone to built cars in a much bigger scale (1:20), so I had get back to minifig car building.

From Joe Meno:

I was familiar with everyone in one way or another – Joe is a writer for BrickJournal (no, not me, the other one!) and Stephan had written an article about his car models in a previous issue of the magazine. Our team would be working with some people at the LEGO Group on the set — Emilie Bourdillon and Helene Venge, then later Trine Balle Kristensen and Gary Smith from LEGO Factory, and set designer Steen Sig Andersen. The project was clear: make a cool custom car set to establish a new theme in LEGO Factory! Simple, or so we thought...

Making Choices

There were some decisions that had to be made at the beginning, most notably choosing parts to be added in the update of the LEGO Factory element palette. We were asked to select 50 parts to add, which sounded easy, except for one thing – we didn't know exactly what we were building, so choosing was something of a challenge. A funnier problem was that the database with parts to select from was over 200 printed pages! Imagine going through a very long list of hundreds of parts and selecting only 50 parts – it's pretty tough. It took us four weeks to decide our new palette.

Stephan recalls:

Our first task was to choose 50 elements for the LEGO Factory palette. Not easy at all to pick elements for models when you don't have a clear vision of the models you want to build. So the three of us agreed that it would be the best to choose basic elements (mostly plates) to fill the holes in the existing palette. Some elements for building engines and a couple of minifig parts found their way into our choice too. Picking the first 40 elements wasn't a problem. It became more difficult the closer we got to the goal of 50 elements. Of course everyone wanted to get "their" elements into the list. But in the end we discussed the last few elements and found a very nice list of elements we wanted to use. Luckily it was possible to stretch the limit a little bit, because the parts for the minifigs were not counted to our choice. It was sad that there weren't any female minifigs available. But Emilie promised that there would be some females available in the future. Checking our wish list after finishing the project shows that our choices were very good. We've used many (but not all) of the elements we've picked.

Other choices had to be made. What time period would we base our cars on? Our building would also have to reflect the time we chose. We also had to build cars that were iconic in time, but not in design — we couldn't build a Ford directly for example, for legal reasons. The time period would also affect other aspects of the set design. There had to be more than just cars, we figured.

We discussed much of this through e-mails and a couple of discussion boards, although most important were the conference calls we had.

Stephan comments:

At the end of October we had a first conference call and Emilie from LEGO Factory told us what to do and how the project should start. Afterwards we started to build the first scratch







Before the designers got to use LEGO Factory, they made initial models to brainstorm. From top to bottom: Joe Evangelista's car, Joe Meno's hot rod, and Stephan's car (left). Many of the ideas from thses models, from opening doors, large engine and rumble seats continued to the final cars.



One of Stephan's first digital models has many of the features that got refined in later models.



A preliminary model from Joe Evangelista. Red was in a lot of the models because it is the most common color in the LDD palette.



A preliminary model from Joe Meno. This model was not finalized, as the look was a little too close to a real car.



Another preliminary model by Joe Evangelista.



Stephan's hot rod pickup, made in the initial weeks of the project.



Stephan's rat rod.

models. The conference calls were very helpful for the progress of the project. But for me as a non-native English speaker it was a challenge in itself to follow the calls. Talking to someone on the phone in English is one thing, but to talk to many fast speaking people in a phone conference is something completely different!

The idea of building hot rods pretty much defined the time period: the '50s and '60s.

This opened up the possibility of building hot rods and also buildings like garages, diners and drive-ins. In this setting the seeds of a back-story started: Two kinds of gangs, each having two cars. The first gang would have the shiny, colorful hot rods, and the other would have the dark, rusty rat rods. Creating the environment was important for this set and theme, as it would dictate the designs for us and other builders.

The width of the cars also became an important point to look at – while most LEGO vehicles are four studs wide, we wanted wider. Basically, we wanted to have cars that could fit two minifigures, and as much functionality as possible. As Stephan noted, "We preferred to have more space for details like opening doors. A good way to check the size of the cars was to place them next to the Cafe Corner [set]. Next to this building the cars shouldn't appear too big." As a result, the cars were designed at least six studs wide.

Calls taken and calls made...

From November until mid-December, we had a weekly conference call. During that time, we were given access to a version of the LEGO Digital Designer with our palette installed, so we were building models in the program and submitting them online for critiques and comments from everyone. For the most part, this was an open development time of the theme, as the LEGO Factory team encouraged us to design what we thought would be good for this set. Our initial constraints (besides the parts palette) were the number of parts (originally, it was set at about 1200 parts) and building complexity (we had to make models buildable by a 10 year old). We decided to build cars, a garage, and a drive-in or diner. The LEGO Factory team's encouragement was good, but at times confusing, as for most of the online discussions and calls, there was no direction or preference given for us, so we continued to build in our separate directions.

Joe Evangelista recalls:

Like any project it had a series of cycles that continued to run us over on a weekly basis. The meetings with the team from the LEGO side went something like this every week: "We love what you've built, please build more." When asking for some actual criticism of the early designs we got the same response each time: "Don't worry about that just yet, just keep building. We'll narrow it down later." This all sounds fine and dandy but it's akin to shooting in the dark every week with no real sense of where you're heading. The overall time for creating this set was only 2 months (if that), and we were given the first month and a half to run free, which led to a very stressful last couple weeks.

Some initial ideas became permanent elements of the cars. My idea of a fold out rumble seat in the trunk became an item that Stephan incorporated later in one of the models. Another idea was creating modular engines. We decided to make them 4 studs long to be able to build huge V8 engines. Alternatively, the engines could be also replaced by an engine cover. These option would be easy to build and add another level of customization to the cars. All of these ideas went back and forth on e-mail, so while separate cars were being designed, there was collaboration happening between us and also the LEGO Group.

The buildings were another aspect of the project that we spent some time developing. Since we chose the '50s/'60s as our time period, we built some iconic structures, including a diner, a drive-in, and a garage. All three of us did a drive-in restaurant of one type or another, and Stephan built a garage...or two. The buildings became a challenge, as they generally have more parts than the cars. We had to watch the part counts constantly, as we tried to keep under the 1200 part limit. The buildings were first built on LEGO Digital Designer, and then parts were combined or changed to make a lower count. The diner designs went from 600 parts to 250 parts, and the garage was reduced to 250 parts. We also included four minifigures.

We had decided on having two buildings and two vehicles for the hot rods (the 'colorful'

cars) and the rat rods (the 'dirty' cars) and worked toward making the part limits, except we didn't anticipate three things. One was a change in a part count, another the removal of a model and the other was a change of models. All were big changes, and all hit us off guard.

Ch-Ch-Changes

The first change was drastic and happened with only a couple of weeks left in the design stage. The part count was reduced from 1200 elements (which we managed to meet) to 900 elements. Considering how efficiently the models were designed, we could only do one thing: eliminate a model. After some discussion, we decided that the garage would be removed from the set, as many previous LEGO car sets have had a garage included. The remaining building would be a drive-in, which was an iconic building representative of the time period and a common place for the car drivers to meet.

However, the LEGO Factory team had other ideas. To them, the drive-in was not a building that fitted the theme just as well as the garage. We made our case about the drive-in, but the garage won out. That posed a problem – the garage was a model that wasn't as refined as the final drive-in in terms of parts count, but it had to be revisited. Joe Meno decided to take a shot at it, so everyone else could refine the cars, as one had to be redesigned as well. All of this had to happen within two weeks.

It took a bit of thought and experimentation, but a garage design was produced that used the same layout of the older garage design, but also had some of the rounded corners and look of the drive-in. The roof was removable and there was a lift that could hold the cars up while being worked on by mechanics. While this was being worked on, Joe and Stephan were building a new car. It was close, but we managed to complete the set in time!

Having completed our designs did not mean the set was ready for production, though. The LEGO Factory team had to look at the models make sure they were buildable by a 10-year-old, and stable. There were some more revisions that were done by Steen, the LEGO designer that worked with us. The most notable change was the lift in the garage. What

Settling on the Setting

The buildings in the set went through quite a bit of design work. Here's a small sampling of the models sketched up. Some of these models will be available at the Custom Cars LEGO Factory page as starter models, as custom user designs (My Own Design) have more building possibilities.



Above: Initial ideas for buildings by Stephan. The garage at the top right was heavily revised to make the final garage, while the bottom garage design was was made to be modular, so garage 'units could be put together in a row.



Above: Initial ideas for buildings by Joe Meno. Both of these models had too many parts so versions were developed that were approximately 250 elements in size.



Final submission for garage, revised by the entire team in one way or another.



Stephan's car size comparison to the Café Corner set.

was a platform a person had to pull up to lift a car became a ramp that, with the flick of a lever, lifted a car up, which was a very elegant solution! Also, a sticker sheet was created from our ideas, so our cars could have flames and racing stripes.

Finishing up

After the set design was set, the only thing that remained was the back-story. LEGO Factory's website will have a page devoted to the Custom Cars theme, so we were asked to write about the minifigures we included. Our original thoughts about the two gangs came in handy as we developed the characters, with each gang having a driver and a mechanic. One gang made the nice colorful hot rods and the other made the junkier cars, but both could take each other on!

With the characters finished, our jobs were complete. Looking back, I'm pretty happy with what we were able to do. I also am much more appreciative of the work that happens behind the scenes while creating a theme or set. Many factors, from cost to element counts and even color come into play when designing a set. Working together and with our diverse building styles, we were able to create a set that has broad appeal.

Joe Evangelista concurs:

The most important thing I can take from this project is the appreciation of how others build and working with them in a way to create a truly collaborative design. I think the yellow car is perhaps the best example of collaboration in this set. It combines a number of things from previous designs from all 3 of the designers. It is nice to see some aspects in the car that I had created, but even better to see where Stephan had improved upon other ideas and turned over something even more impressive. We went back and forth trading designs and fueling off of each other's ideas. In that way I would like to see future Factory fan designed sets use that model -- create a model and then pass it to the next person on the project for them to rework or improve. With a starting point and a sort of "competition" it takes away any of the "this is mine and that is yours" and should make it hard to tell who built what by the end as everyone would be influenced by each other's work.

From Steen Sig Andersen, LEGO Set Designer for this set:

It is always inspiring to work with new people, in this case with the Custom Car Garage team. My task was to guide them through the design process, from concept to final model. When we design LEGO sets, the design process can be hard work where we sometimes will get frustrated over the changes that are made on the models. It is a part of being a LEGO set designer to solve these challenges, so we create the best model within the constraints that was given to us.

It's amazing to see what was accomplished in the space of a year. In that short period of time, dozens of models were built, evaluated and a few chosen to make a set worthy of the LEGO name. This wasn't easy, but it was exciting. And through the challenges, we worked to make the best set we could. For the LEGO Group, there were some lessons learned that will be used in the next LEGO Factory projects going forward. The first four sets were pioneering in how to bring the talents of the fan community to create new and exciting sets, and there will be more coming. Gary Smith, Associate Product Manager, LEGO Factory, states, "I'm sure there will be fan-designed products in the future, but the way we get there will develop."



You can see the LEGO Factory page on Custom Cars at www.legofactory.com!

Behind the Scenes: Building the Beetle



Building a Classic Bug!

The Volkswagen Beetle (#10187) is the first classic car set to come from LEGO Direct to Consumer. BrickJournal talked to Eva Hendriksen, Marketing Assistant to Marketing and Development about the set.

Article by Joe Meno Photography provided by the LEGO Group *BrickJournal*: When was it decided to create a classic car set? We decided on that in the fall of 2006 when the 2008 Direct exclusives novelty range was planned.

How was it decided to have a workshop with LEGO fans building the prototypes?

We wanted to learn from the fans by involving them in the development process in two ways: by asking them online which classic car they would like to see us bring to market and by inviting a small group of fans to come and sit and build concept models together with the LEGO designers. The fans are the consumers and who are better at telling us what a car should look like and giving input on how to enhance the building experience. - So, within the limitations you need to consider when you design for production.

At Frechen (a LEGO fan event in Germany), what was the feedback?

First of all the fans appreciated being asked their views and getting the opportunity to discuss the concept models and share their views with the designers at such an early stage of the development process. The Beetle was especially liked for being such a true LEGO classic. The studded surface, the built outer and interior design were emphasized. Achieving the rounded lines building with edged LEGO bricks on a model this scale was greatly acknowledged. But what also makes the Beetle so special is the nostalgia that it brings forward. Everybody have memories of a Beetle and stories to tell. They drove them themselves, it may even have been their first car or it brings back childhood memories.

While the Beetle won the vote, were there any comments about the other models that were unusual?

Boys of all ages love cars and the visitors to the Frechen event really liked what they saw. The concept models presented at the event were different in style, but they were all valued for being true to the original designs and for their detailing.









The VW at Frechen was dark grey - it changed color to dark blue. How was the color decided?

Designer Steen Sig Andersen did quite a bit of research into that subject. You can find the Beetle in a variety of one and two-tone colors. Some were brought to market, others unique. We looked for a color scheme that was both true to the Beetle and interesting to the fans - also observing the color palette available for production.

You worked with Volkswagen on this model - what research did you do with them for this model?

Volkswagen provided us with reference material, but most important was the face to face contact. We first met with Volkswagen at the AutoMuseum Volkswagen in Wolfsburg, Germany - a real mecca for Beetle enthusiasts. Steen Sig Andersen brought the first prototype model. It was placed on a table right next to the original 1960 Charlotte model. Now curves, shapes and details were discussed and the first corrections were made. Back home in Billund, Steen optimized the model and a month later, another meeting took place this time in Billund. The model was again subject to close investigation! Steen went back to his desk, made a few changes and at the end of the day the prototype was approved.

How was working with VW?

It was a real pleasure working with Mr. Glaser of the Wolfsburg HQ and Mr. Witzleben, AutoMuseum Volkswagen. They have a soft spot for the Beetle. The original Beetle is famous for its curves and rounded shape and Volkswagen wanted the LEGO model to be as true to the original as at all possible. At the same time we wanted the LEGO Beetle to have the look and feel of a true classic LEGO model built from edged pieces. In a close dialogue characterized by openness and mutual respect, the task was solved and a splendid model born.

Do you recall a specific detail that VW added?

Volkswagen was very keen on getting the boxer engine right both in design and positioning. But also, the windshield angle was considered a key characteristic of the car design.

Any details to the model that you are particularly proud of?

Steen is particularly proud of the windshield wipers, but also the dashboard details and the glove compartment.

Is this the beginning to a collector's series of cars?

You never know what the future will bring

The Beetle is available at LEGO Shop-at-Home, and the LEGO Stores. Retail price is \$119.99 USD.



LEGO Group Builds Consumer Driven Innovation to New Heights with LEGO[®] Architecture

Leading construction toy maker further explores consumer and fan driven product development with debut of first line of models developed by brand enthusiast

Continuing to explore the ways in which fans can drive innovation to the LEGO business, The LEGO Group announced a partnership with Adam Reed Tucker of Brickstructures Inc. to launch LEGO® Architecture.

LEGO Architecture leverages the legacy of the classic LEGO brick's 50 years of inspiring young builders and budding architects to express their own design ideas to take the experience further, making it possible for children of all ages to build and collect their favorite worldwide architectural sites through amazing replica models.

Initially, LEGO Architecture will feature a pair of Chicago's most famous landmarks: The Sears Tower and The John Hancock Center. In the future, the line will offer other famous landmarks from around the world celebrating influential architects and movements that have shaped cities and cultures. With models developed in collaboration with architects, LEGO Architecture will work to inspire future architects, engineers and designers around the world with the LEGO brick as a medium.

"My main objective with LEGO Architecture is to celebrate the past, present and future of architecture through use of the LEGO Brick. With products such as the line of souvenir sets and educational events, we wish to promote an awareness of the fascinating worlds of architecture, engineering and construction in a new and unexpected way," said Adam Reed Tucker, president of Brickstructures, Inc. "The possibilities of the LEGO play experience are the perfect medium in which to drive and engage that awareness and excitement."

"LEGO Architecture is a milestone for LEGO Group, as it is the first new business launched together with a member of the LEGO community using the LEGO bricks as part of the business," said Paal Smith-Meyer, head of new business group at the LEGO Group. "After years of development, this niche business stems from our exploration of new business areas outside traditional retail toy markets. LEGO Architecture exemplifies our philosophy that everything big starts small and our aim to build new businesses with entrepreneurs like Adam, who are passionate about the LEGO idea and our mission to inspire the builders of tomorrow."

LEGO Architecture models can be found at specialty stores in the Chicago area including Love from Chicago at Woodfield Mall in Schaumburg and Yorktown Center in Lombard, The Chicago Architecture Foundation Shop and in gift shops at the Sears Tower and John Hancock Center. For more information and a complete list of retail locations, visit www.brickstructures.com.

The LEGO Architecture Team wishes to extend a thank you to all parties who have participated in the foundation test throughout the city of Chicago.

News: LEGO Architecture





Top: The inaugural sets of LEGO Architecture, the Sears Tower and the John Hancock Center.

Bottom: Adam Tucker working on his set designs.

Behind the Scenes: LEGO BATMAN

Looking Behind the LEGO BATMAN[™] Capes and Cowls:

A Talk With the BATMAN LEGO Creative Lead



Hans Henrik Sidenius with some of his work.

Article by Joe Meno Photography and art provided by the LEGO Group

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1996 was the year he was "given the ticket into the wonderful world of LEGO bricks." Since then, he has worked on many LEGO product lines, including TRAINS, RACERS, LEGO STUDIOS, ALPHA Team, CITY, *HARRY POTTER*, MONSTERS, SPIDERMAN, STAR WARS and finally, BATMAN.

Hans was part of the initial BATMAN design team in 2005, where he built the Batboat (Set #7708) and the Batmobile (Set #7781). In spring 2006, the team "returned to the Batcave" where they developed the BATMAN Attack Helicopter (Set #7786) and Bat-Tank (Set #7787), which were launched last year. In spring 2007, Hans took over the role as Creative Lead on BATMAN and developed the BATMAN sets for this year: BATMAN Speeder + Mr. Freeze Tank (Set #7884), Robin Scuba-Jet and Penguin Attack Sub (Set #7885), BATMAN Bike and Harley Quinn's Slammer Truck (Set #7886), and BATMAN Tumbler and The Joker's Ice Cream Surprise truck (Set #7888).

I was able to have a quick interview with Hans about himself and his team's work. When asked if he is a BATMAN fan, he's candid: "I have become a BATMAN fan. I've never been a true super hero or 'character fan,' but more of a movie/vehicle fan. I have always loved to go "behind the scenes" on movies and explore the design and props and see how things were designed and created. Working with LEGO BATMAN models for the third time gave me exclusive insight into the BATMAN Universe and the characters. I find it fascinating." His favorite villain? The Joker.

When choosing the models for the product line, Hans reveals: "All the sets are based on DC Comics' history and not directly the films. This gave us more possibilities to create cool and fun play models within the BATMAN universe. We tried to pick the models that were the most 'iconic" and had links to Batman that are known by kids. In the 2008 launch, we picked BATMAN's Tumbler as the only design directly from a movie. The Tumbler is very popular and has been requested by many BATMAN fans. Another vehicle — the Bat-Pod bike from THE DARK KNIGHT (movie) was planned, but the design and construction turned out to be too difficult to create as a LEGO model without any new elements ."



Top right: The Bat-Pod. Above and center: Development sketches for the vehicle. Right: Final model for set #7886.

From all these sets, which is the one Hans is proudest of? He replies, "I think that is my latest set, the BATMAN Tumbler (#7888). The first concept model was created by designer Mark John Stafford. After approval on creative direction of the vehicle, I continued the development. It was a good challenge because of the special design and shapes of the Tumbler. Because it's a play model, the whole chassis of the vehicle is created of solid LEGO 6 (stud) x 8 (stud) frames and Technic bricks. It had to be VERY stable and solid in construction, so the big wheels wouldn't fall off during play. Another challenge was the color. The Tumbler is completely black, so to make the building steps easier, I changed the design inside the vehicle by adding yellow, blue and dark grey colors."



He continues, "Another favorite for this year is Harley Quinn's Slammer Truck (#7886). The set was designed by Nicholas Groves and is pure fun to play with. It has a nice built-in "slammer function" and we think the kids will love this function. It's cool fun."



The BATMAN product line got attention from LEGO fans for the introduction of modern era guns into the LEGO minifigure accessories assortment. I asked about how the weapons were chosen, and Hans answered: "In the concept development phase, we just focused on the Batarang and Batman's equipment. At the same time, the "family-mold" was introduced, which is a mold consisting of up to 5 small elements — all pre-packed quickly into a small bag). The new mold gave us the possibility to create a "wheel (for those not familiar with LEGO sets, accessories are sometimes molded into wheel-shaped runners, where the user detaches the parts)" of different equipment for the BATMAN sets at a low cost. As we ended up with extra space in the mold, the idea of adding two 'bad guy" guns came up. The initial gun versions were not approved as they looked too modern. The final models became more iconic and comic in design."

"Elements designed for the BATMAN sets included the Batman cowl, Catwoman's cowl, batarang, handcuffs, guns, Robin's hair piece, Two-Face's hairpiece and Harley Quinn's hairpiece — 12 new elements total. All the graphics and decoration on elements and minifigures were done by designer Chriss B. Johansen."



Cowl renderings for molding.

Version 4

Final Version

Harley Quinn's jester's cap rendered.

Version 1 Version 2 Version 3







The "family-mold" set of LEGO elements.

With his experience behind the product theme, I asked if there was a dream BATMAN set Hans would want to build. His answer is simple: "More Gotham City buildings. Once could be the Police station with a Bat-Signal. Also, another nice LEGO vehicle — it could be the Batmobile from the 60s TV show." Buildings and vehicles, copying a world, just like childhood.

But this time it's for THE DARK KNIGHT.

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Many readers will be aware of the great MOCs created by Ralph Savelsberg (Flickr account: Mad Physicist), in particular his amazing collection of military aircraft. What may not be so well-known is that Ralph lives about 20 miles from me (Flickr account Lego Monster) here in the United Kingdom, even though he's actually Dutch. I got to know Ralph not long after he moved over here and now we meet up to discuss building techniques and down a few beers on a regular basis.

It is through my friendship with Ralph that I have taken an interest in building LEGO aircraft (Ed's Concorde can be seen in BrickJournal 2). Ralph was already working on an F-117 Stealth Fighter when we met. This project inspired me to build my Lockheed SR-71 "Blackbird" to the same 1:36 scale. Having done this, a brainwave struck Ralph: "What if I build a U-2, then we'd have a small Skunk Works collection." Great idea I thought, so off he went. If you don't know what the Skunk works is, here is Ralph's excellent potted summary:

In 1943 the Lockheed aircraft corporation received an order from the US Army Air Force for the development of a fighter aircraft powered by the then new-fangled jet engine.

The Lockheed corporation decided to set up a special unit for this secretive project, lead by a young and very talented designer called Clarence 'Kelly' Johnson. This unit became known as the Skunk Works, initially much to Johnson's dislike. The origins of the name are a bit unclear, although there was a popular comic at the time ("Lil' Abner" — Ed.) describing a secret production factory of illegal moonshine as the 'Skonk Works' and in its first years the unit was located next to a rather smelly plastics factory. In any case, the name stuck and is now actually trademarked by Lockheed Martin.

They produced a flying prototype of what later became the Lockheed P-80 'Shooting Star' in a record 143 days. That set the tone for what was to follow. Early in the fifties, at a time when the Cold War was heating up, the CIA wanted a high-flying spy-plane to keep an eye on the Soviet Union and its allies. This resulted in the U-2 developed by the Skunk Works. The first prototype was flown in deepest secret from an airfield near Groom Lake in the Nevada Desert, sometimes

The Skunk Works

Article and Photography by Ed Diment and Ralph Savelsberg



also known as Area 51 and in the years to follow U-2s were flown on missions over the Soviet Union. These came to an abrupt halt when in 1960 a U-2 flown by Francis Gary Powers was shot down near Sverdlovsk. Still, U-2s remained in service ever since, and in 1962 a U-2 was the first aircraft to provide images showing that missile bases were being constructed on Cuba, which lead to one of the Cold War's scariest moments.

Even before the shoot down, it was clear that Soviet air defenses would soon be able to catch up with the subsonic U-2. The solution was going fast –very fast. This resulted in one of the most exotic aircraft ever developed: the A-12 `Oxcart'. This too was first flown by the CIA from Area 51. A later version, developed for the Air Force, became known as The SR-71A 'Blackbird'. This jet could fly at speeds more than three times the speed of sound and altitudes of more than 80,000 feet. Many of the official records that it set have not yet been broken, even now.

There is a never-ending competition between designers of aircraft and of air-defenses. In the seventies the Air Force started to think about a new way to break through enemy defenses. By shaping it such that most of the radar energy that strikes it is reflected away from the radar it becomes practically invisible to radar. This is sometimes known as stealth technology. Even though Lockheed wasn't asked to provide a proposal, eventually a contract to build two prototype aircraft went to the Skunk Works. Tests of these were once again conducted in Area 51 and were so successful that a production version, called the F-117A 'Nighthawk', was developed and it served with great success for more than two decades.

Only the U-2 is still in service, but considering the number of projects The Skunk Works is officially known to have worked on, their facilities always seem to be very busy. Few people would be surprised to find that something even more exotic is flying missions from the Nevada Desert.

Ralph wrote the above part, as his knowledge of military aircraft is so extensive he can pull this sort of stuff straight out of his head. Ralph's U-2 has not yet seen the light-of-day, so this is a *BrickJournal* exclusive!

All three Skunk Works aircraft were built to meet very narrow requirements with extreme, and at the time of each plane, unheard of performance parameters. The U-2 needed to fly higher than any plane before it, hence the long narrow wings and all new engine. The SR-71 was required to fly high and fast, resulting in the use of two enormous Pratt & Whitney engines and the then exotic material of titanium. The F-117 had what, at the time, was an incredibly low radar cross section, that radar of that era simply could not detect and is still largely effective to this day, despite now being over 20 years old.

The unusual appearance of all three aircraft led to a number of design headaches that had to be overcome when working with LEGO elements.

At the time the F-117 was designed, Skunk Works engineers couldn't yet predict how curved surfaces reflect radar. Because of this, the aircraft shape is composed of flat surfaces, a look that is hard to recreate in LEGO bricks. Stealth also requires that all weapons are carried internally, so space inside is at a premium. This made the F117 the longest build Ralph has ever done. It sat unfinished and untouched on his desk for weeks on end, while he pondered over how to angle a certain surface just so. The complicated geometry of the cockpit canopy means that unusually the F-117 does not have much of a cockpit interior.

By contrast, Ralph put the U-2 together in only a few days. The tricky bit here was the wings. Their slight taper required a little trick in which the entire wing is mounted at a slight angle, with wedge plates forming the trailing edge. In this way it is possible to achieve a very fine taper of the leading and trailing edge of the wings. The U-2 has an unusual landing gear with front and aft bogies retracting into the narrow fuselage and two outrigger wheels balancing the wings. On the model these outriggers are essential too, because the wings are a bit flimsy and droop quite a bit. This accentuates the extent to which the U-2 looks like the real thing.

The SR-71 build came together fairly rapidly, but only after three fundamental issues had been cracked. Firstly, were the air intakes; secondly, the wing angles and thirdly, the shape of the nose. The air intakes were a happy accident discovering that the tires from the Radio Control race car set (5600) were unique, one sided ones that would fit over part 2515, the solid wheel. The wing angles involved using the same technique that is on the tail of my F-111 and the wings of the Concorde. This involved using two sets of wedge plates together to achieve different angles that sit between the 22⁰ and 45⁰ angles available from existing wing plates. The nose involved using a variety of wing plates to develop the curvature seen from above as the nose flattens ands flares out around the sides of the fuselage. Once these three items were in place it took about a month to put the aircraft together.

We brought all three planes under one roof at my house for a photo shoot and I think you'll agree the results look great. A collection of three 'black' aircraft like this somehow seems meaner and spookier than the sum of its parts.

Ralph and I would like to dedicate this article to the brilliant engineers at Lockheed who came up with these wacky aircraft. Of course, the brave men and women of the US Air Force, NASA and the CIA who were crazy enough to fly in these things all deserve our thanks and gratitude.

As a footnote, we'd both encourage people to get into collaborative building and meeting other AFOLs wherever possible. The variety of ideas and techniques out there is boundless and sharing these can be very rewarding. So get building!



Community: The HALE Project



Higher and Higher

Article by Brian Davis Photography by Brian Davis and the University of Nevada - Reno

This year, Brian Davis was one of the people involved in a unusual mission using MINDSTORMS NXT models. How unusual? Brian, a part-time college professor and MINDSTORMS community member, talked to BrickJournal about his part and projects in the mission, which involved two payloads he built. There were a total of nine payloads used, and two balloons. Brian told us about his part in this mission... The HALE mission (High Altitude LEGO Extravaganza) was a wild idea born between the LEGO Mindstorms team and the BalloonSat folks at the University of Nevada - Reno. It started as a conversation between Steven Canvin from LEGO and Eric Wang ("Professor LEGO") on the university side. The BalloonSat group had been running simple high-altitude research balloon missions: using a helium balloon, a series of small simple payloads could be lifted high in the atmosphere to conduct automated research hard or impossible to do on Earth: sample upper air chemistry, monitor cosmic rays, and not incidentally take spectacular images of the Earth far below. These missions often reached 100,000', far above commercial jets, more than three times higher than Mt Everest - at that altitude, the sky is completely black and the horizon far below sports a very noticeable curve. And Eric, with Jeff LaCombe, had been using both the RCX and now the NXT as control systems in these payloads...

I had stumbled across a YouTube video of one of the BalloonSat launches, claiming to have the world's record for the highest NXT, and was immediately hooked. Here was my ultimate dream: literally a mission to the edge of space with all the associated risks (radiation, bitterly cold temperatures, and for all practical purposes a vacuum), and challenges (the payload would have to handle all eventualities, including hardware failures, with no help from a human being during the mission... & mistakes might result in a 10 mile long swan dive). But better yet, you could do it with the materials I had around the house – LEGO! Before I had any idea what the LEGO and BalloonSat folks were planning, I had contacted both & was bugging them to make the dream a reality. So was born HALE.

The idea was simple: participation was first by invitation only, and even those invited would be required to submit a payload proposal for review. It must be small and light (preferably less than 1.5 kg), not be dangerous, and do something interesting or novel. Only payloads that met all the requirements would be accepted.

I was invited to submit a proposal, and to be safe I submitted two very different ones, hoping to improve my chances; to my surprise, both were accepted. The first was "Gypsy", a flexible camera platform. I decided from the outset that I would try to stay as "LEGO pure" as possible (for any number of reasons, including easy construction), so the camera (a COOLPIX L11) wasn't to be modified: instead Gypsy used one NXT motor to push both the power and shutter buttons, while a second motor with a lead screw assembly could slide a switch, allowing the camera to alternate between still and video modes. To keep the camera and motors in exactly the right position, the camera was held in a hybrid (studded + studless) "cage" to which the motors were attached, forming a very rigid structure that with cross-bracing. That left one more motor, and I wanted to be able to point the camera up or down (side to side was pointless, as the payloads tend to spin this way and that during ascent). I tried a rotating mirror to accomplish this, but found that the heavy mirror was cutting into my mass budget - I figured a light payload was more likely to be accepted. In the end I balanced the center of the payload on two Technic turntables that acted as both supports and pivots, so that the entire payload could be pitched up or down as much as 90°. This presented three new problems however. First, the gears driving the turntables had to tilt the entire payload, yet could not slip under the load. Second was the fact that the entire payload needed to be supported just by these two turntables, and I was resolute in not wanting to use glue. The last problem was the temperature: high aloft, exterior temperatures could drop to -80° F, and at temperatures that low the ABS that LEGO is made of might start becoming brittle. If it shattered, the payload would plummet out of the sky. The only way to prevent this was to attach a redundant safety tether extending straight through the payload, to catch it in case of catastrophic failure... and hope it worked. As for the first two problems, I was counting only on my skills as a builder to make sure a standard LEGO construction would remain intact and attached to the balloon for several hours under shock loads, three times higher than Mt. Everest.

The photographic sequence would be controlled by an onboard "script", providing second-by-second commands to take pictures, switch to video, change the pitch of the camera platform, etc. In addition to controlling the camera, the NXT

Gypsy



Gypsy secured in its box.



Gypsy in its box. Its camera is on the far right side, under the minifigure.



Gypsy. The turntables can be seen on the side.

Lil' Joe



Lil' Joe's shell.



Lil' Joe before packing in it shell.



Lil' Joe's components.

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would be programmed to record dozens of different conditions: light level, sound levels, accelerations, battery voltage, and internal temperatures. HiTechnic was kind enough to develop a special prototype high-resolution pressure sensor to fly, to try to establish what the pressure was at various points during the mission. All this data was compressed and streamed into the NXTs memory for later analysis. On top of all this, the NXT had to control two small heaters to warm the interior as the temperature dropped. To run the heaters and three of the sensors (a simple light sensor and two internal temperature sensors), I used a HiTechnic Prototyping board tucked inside the payload, and to further reduce weight I replaced the standard thick NXT wires with thin flexible ones purchased from Mindsensors. In this mission, every gram would count. Controlled by a compact program coded entirely in NXT-G, it represented one of the most complex programs I had written for the NXT as well, using more than 20 custom blocks nested multiple levels deep. After a week of nearly constant testing, and running through half a dozen simulated missions, Gypsy was ready to go.

My other proposal was "Lil' Joe", named for Col. Joseph Kittinger, who during Project Excelsior set a world record for the longest free-fall by jumping from a balloon at 102,800'. The idea was to replicate, in a very small, simple way, this incredible leap of faith... but with LEGO at the controls. The payload was very simple: inside a strong squarish tube of blue Styrofoam were an NXT and a SPOT transmitter (looking like an orange walkie-talkie, this was actually an emergency locator for hikers, with a GPS and low power satellite transmitter all in a unit smaller than the NXT). A small chemical heater sandwiched between them was all they would have for warmth. One end was covered with a cap sporting the tailfin, and was held on by a short tether wound around a motor. When the payload wanted to deploy the parachute contained within, it simply unwound the motor to reel out the cap, which would be pulled away into the air, pulling the parachute out with it. Simple is good, but this would have to work flawlessly. Because there was no guarantee as to what altitude it might be dropped from, the payload also had to time it's ascent, making an estimate of its altitude at the moment it was dropped, and use that to calculate how far it could safely fall before deploying the 'chute. And, of course, it had to very reliably detect when it was released, and do it with no communication with any other payload... a tall order. I programmed it to trigger when it "felt" a significant moment of free-fall ("zero G's"), and in addition to take detailed acceleration data just before, during, and after the drop, to see what was happening. The only sensor was a single Hitechnic accelerometer upon which everything would depend. I tested this exhaustively, but was very aware that there was no way I could test it under the conditions it might experience, deploying a parachute at more than 100 mph in a very thin atmosphere that would rapidly be becoming thicker is it plummeted towards the ground. To make sure the parachute deployment did not simply rip apart the LEGO structure, the parachute tether went under the NXT & SPOT... but the structure still needed to be very strong & rigid (but small & light), to make sure the tailfin cap stayed in place and nothing was twisted or bent out of shape during the mission. One small failure would be all it would take ...

Just two days before the deadline, I shipped both payloads out to Nevada. While I had tested them extensively, I had

my doubts and worries – many. But with the payloads gone, much of my work was done. Like an expectant parent, now I had to wait. When the payloads reached Reno, Eric Wang was immediately concerned about some of the thermal issues with Lil' Joe; he feared that once the parachute came out, the temperature in the nearly exposed payload shell would drop so fast that the SPOT transmitter would freeze, leaving no way to locate the payload even if it did make it down safely (within the Reno ground team, the odds were about 50/50 on Lil' Joe surviving this mission). After more hurried consultation, he retrofitted some insulation, upgraded some webbing, and I increased the free-fall time to try to get Lil' Joe down to warmer altitudes quicker. With this last-minute frantic long-distance programming completed, both payloads were pronounced flight-worthy. We were on our way.

On launch day, Tuesday, July 29th, I woke up & logged in, ready to support the ground team. I would be relaying the location of the SPOT transmitters in each balloon to the group in the desert so they could recover them. On top of that I tried to stream "mission briefings" to a blog as soon as I knew something, which ended up being an almost continuous stream of information as the mission pace quickened. Eric called me for each launch, and I did my best to monitor everything on my end: the three SPOT transmitters (one for each balloon and a separate one for Lil' Joe) and two ham radio signals (also broadcasting GPS information for the balloons), plotting the progress on Google maps in real time. I imagined this is what it felt like to be, in a very small way, in mission control. From my computer I could see data from each mission: the locations and elevations of the balloons, the ground speeds, when the transmitters cut off or came back on-line. But I could do very little about it... just hope that everything worked as planned. It was amazing to sit there and realize just how much was coming together out there in the Nevada desert in these early morning hours. The payloads aloft represented six months work by more than 50 individuals, representing nine teams and five countries, coordinated from around the world and all leading up to this day.

From mission control the flights went smoothly: very smoothly. After the launch of the second balloon, I received another satphone update from Eric saying the first balloon had reached 80,000' and they had commanded it to drop Lil' Joe. Somewhere over Nevada my payload was now plummeting towards the cool desert below, executing a preprogrammed sequence that should bring it safely to a landing... or not. When I got the first location confirmation from Lil' Joe's SPOT transmitter, I yelped for joy. When a few minutes later I had a second SPOT transmission from the same location, I screamed for joy. Lil' Joe had made it down! I told Eric the good news, and he rushed off to try to find it. As I was looking at the log I'd been keeping of times, I realized that it had taken less than 23 minutes to drop more than 80,000'. That seemed awfully fast... but at least the SPOT transmitter was still working, so I reasoned it must be OK. I continued to monitor the main balloons, "watching" as they burst and fell to Earth, all echoed in the data streaming from their GPS systems. All three missions landed along a single road, separated by no more than about 10 miles, which I hoped would make recovery somewhat easier for the ground team.







About an hour later, Eric called me again, to announce they



Balloon's eye view of the launch.



Descent begins.



Recovery of Lil' Joe.



The HALE launch and recovery team.

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Higher and higher ..



Recovery of Gypsy.

had found Lil' Joe ... but something certainly unexpected had happened. Instead of a parachute draped loosely over an intact payload, they found a tightly-wadded mass of nylon twisted inextricably with the tailfin assembly. The parachute had collapsed & tangled, leaving the payload to hit the desert at a speed that was later determined to be more than 30 mph. During the impact the NXT & SPOT had evidently hit downward hard enough to punch completely out of the base of the inch-thick heavy Styrofoam, but some force had mysteriously jammed them back in after as they were still in the shell when the ground team found it. Amazingly not only the SPOT continued working but the NXT was still running the program, logging data until it completely filled the memory! I was amazed. It appeared even the LEGO elements, crossbraced within the payload shell, had not parted under the loads during descent or the rough impact with the ground. Later that day the ground team located and retrieved the other two balloons with their payloads, and I learned that Gypsy too had survived the trip. Not only had the Technic turntables handled the loads under the extreme cold, but later inspection of the data held in Gypsy's memory showed they had worked largely as intended, moving the platform back and forth to to point the camera exactly where the command script had directed it. In all Gypsy had recorded more than 4000 separate data records, exactly as planned - the complex NXT-G program has performed perfectly. Other missions were equally successful, with only one not recovered. In all, it had been an amazingly successful mission, with the ground team launching two separate balloons in one morning and retrieving three missions.

HALE Mission Profile



Within less than a day, Eric had put the first pictures up on the web, and in the days to come there were many more. But sadly it appeared that not everything had gone according to plan. While the LEGO and NXT-G components of Gypsy seemed to have performed flawlessly, the L11 camera was empty: a quick check of the memory card showed no image files after the very first. While I was disappointed, given the number of unknowns on this mission I figured it had worked rather well overall... and could have been much worse.

HALE started as an exercise in high-altitude "what if". But it ended up being an experience in international cooperation pushing the limits of LEGO: not just in the physical structure or the programming complexity, but in the creativity of the of the participants. It appears LEGO can go much further than even I ever thought possible. I wonder how much higher it can handle...

Mission "Firsts":

- ...Most Mindstorms payloads aloft at once (8 NXT and 1 RCX)
- ...Fastest (& first!) free-fall by an NXT (Lil' Joe at 148 feet/sec)
- ...Longest (& first!) free-fall by an NXT (Lil' Joe for at least 61 seconds or longer)

To find out more about the HALE mission, including the other payloads, you can go to http://www.unr.edu/nevadasat/HALE/. This mission was sponsored by Nevada Space Grant, the University of Nevada-Reno, National Instruments, The Energizer Battery Company and the LEGO MINDSTORMS Team.

Postscript:

Gypsy and Lil' Joe were not the only payloads on the mission – far from it! Among the other payloads was "Peeps In Space", a mission to study the effects of the near-vacuum and low temperatures during the mission. Designed & built by a group of 4th graders from Shady Hill School, it used the LEGO ultrasonic sensor to measure the expansion of a marshmallow "Peep" inside the payload. Another student payload was built by a FIRST LEGO League team, and controlled a filter set over a UV sensor, as well as controlled the temperature of the payload. Even the LEGO Mindstorms team built a payload, although the details were not released to the public. Unfortunately, this last payload apparently became separated from the rest on the way down, and was not recovered, so what they intended to do with it (or indeed what it looked like) is *unknown*.

Building: Minifig Customization 101



Article by Jared K. Burks Photography by Amber and Jared Burks

Advanced Decal Application!

Hopefully you have worked with waterslide decals to create a new character and are aware of how easy it is to decal a LEGO torso and head. It can get much more difficult when you attempt helmets, shoulders, and custom parts. Flat surfaces are pretty easy; however complex curves get much more difficult. In this installment of Minifig Customization we are going to discuss how to get decals on these complex surfaces as well as how to improve all around decal application through the use of a few tips and tricks.

To begin, lets go over a quick recap of the basic technique as most advance techniques start where it leaves off, please see the inset for this review.

Basic Slide Decal Application Instructions:

1. Disassemble the minifig completely.

2. Remove any printing on the parts that you wish to decal using Brasso or a similar micro-abrasive polish. Wash the figure parts after using the Brasso to removing any residual abrasive.

3. Trim the decal with scissors.

4. Using the tweezers, dip the decal into the distilled water.

5. Allow the decal to sit for 60 seconds to allow the decal glue to release from the backing paper.

6. During the 60 second interval apply some water to the application surface with a cotton swab.

7. Gently slide the decal from the paper backing onto the wet application surface.

8. Position the decal into place with a wet cotton swab.

9. Gently roll a moist cotton swab over the surface of the decal to remove any trapped air bubbles and excess water. If the decal shifts slightly during this stage reposition and allow the decal and torso to sit and dry untouched.

10. The final step of basic application is clear coating the decal with a clear gloss paint, however if performing the advanced steps in this article wait till the end of those instructions to clear coat.

11. Reassemble your custom minifig.

Advanced decal application starts with using a chemical kit to improve the adhesion and contouring of decals to complex curves. These kits help make the decal crystal clear when applied properly, thus making the design appear painted/directly printed on the figure parts. Kits can be found at many hobby stores or online (Micromark www.micromark.com). If you are from a foreign country you will have to find these application kits in your country as they contain a mild acid that cannot be shipped internationally. I recommend two kits, Badger and Microscale, both of which contain the two key solutions: decal setting solution and decal softening solution. The critical solution is the softening solution, so don't skip this one. The home spun alternative to decal softening solution is white vinegar; use it as described on the next page for the softening solution.



Advanced Waterslide Decal Application Instructions:

Step One: Set the decal

After following the basic instructions above through step 9, apply decal setting solution with a paint brush to the decal and let dry. Decal setting solution strengthens the bond between the decal and the part surface.

Step Two: Soften the decal

Decal softening solution makes the non printed areas of the decal more transparent, giving the part the appearance of a directly printed design and it allows the decal to conform to complex surfaces. Using a soft brush, gently apply Decal Softening (Solvent) Solution to the surface of the decal. Do not touch the decal until the solution has completely dried as the decal is VERY FRAGILE at this step. Repeat the application of the Decal Softening Solution until the decal has fully conformed to the surface, but be sure to allow the solution to completely dry between applications; otherwise, you may damage or wrinkle the decal while it is soft.

Step Three: Protecting Your New Figure – Application of a clear top coat

Next apply a clear top coat to the decaled area and decal edges to protect the decal. Clear gloss hobby paint works well. Hobbyists have been known to use quite the Figure 1. Decal application kits in use. Work area is in top left with decal application kit. Application of decal softening solution is shown in the bottom two images and the final figure is shown in the top right image. (To see the complete application of the decals used in Figure 1[,] check this Flickr set: www.flickr.com/photos/kaminoan/ sets/72157605952528360) Custom head piece by Bruce "Arealight" Shu. – Photos by Jared and Amber Burks.



Figure 2. Tricks and tools of the trade. Upper left image is of wooden stick cotton swabs, upper right demonstrates using the wooden stick cotton swabs to hold parts, and lower panel images show common overcoat solutions and the soft bristled nylon application brushes. Custom head piece by Bruce "Arealight" Shu. – Photos by Jared and Amber Burks.

variety for overcoats including nail polish (yellows in sunlight, don't recommend), Future's floor wax (sworn by many model makers - see www.swannysmodels. com/TheCompleteFuture.html), spray paint, airbrush paint, and brush on overcoats. I prefer Badger overcoats, which I apply with a water moistened paint brush and Testors' clear gloss spray lacquer rattle can. Both work quite well and are easy to use.

Tricks of the trade:

There are several tricks that can be used at every step of the basic and advanced decal application, so be sure to read the following and think about where to use them above.

Cotton Swab:

The power of the cotton swab has been mentioned, but I really can't stress this tip enough. The cotton swab, especially the wooden stick version is the best tool to apply decals (see figure 2). Use a very wet cotton swab when positioning the decal. However, a slightly damp swab is called for when removing trapped air bubbles and to absorb excess water. A completely dry swab is never recommended as it can stick to the decal. These wooden tips of these swabs are also useful to position the decal (See the hair drier trick section below for more cotton swab uses).

Trimming/Strategic Cuts:

After you have read the advanced decal application and the use of decal softening solution you are likely asking, "Why do I need any type of cut strategy?" Well through the use of strategic cuts you can help the decal conform to curves and help remove the possibility of wrinkles in your decals. Wrinkles can occur when

using the softening solution, especially if you get impatient and try and help the decal conform to the part surface. While decaling a round surface with a gentle curve you can make small slits in the edge of the decal once it is on the surface of the part. Do this with an X-acto knife or razorblade. Shoulders and shields are great examples of when this is helpful. This will allow the flat decal to curve and overlap slightly to take on the desired shape. This strategy can also be applied to the head tails in the advanced decal application example (see figure 3).

Softening Solution Alternative:

As previously mentioned in this article white vinegar can be used in place of decal softening solution in a pinch. Use the vinegar just as you would use decal softening solution; apply it with a soft bristled paint brush. I prefer nylon bristled.

If you are getting impatient for your decals to conform, you can also use a damp cotton swab to help the softening solution along, but honestly it is best to be patient. Whatever you do, DON'T use your finger as you will leave finger prints in your softened decal which will ultimately detract from your finished figure.

Hair Dryer:

If you are in a big hurry use a hair dryer. A hair dryer can be used at every decal application step including the basic steps to help speed evaporation. Just be careful to remove all trapped air bubbles before using it. This will also help the decal conform to a curved surface because of the heat. It is best to use it on low heat and low speed if possible. Never use a heat gun. Be sure to use something to hold the figure as you don't want to burn your hands. It might not seem hot initially, but the longer you hold the figure the hotter it will get. I find that sticking a cotton swab in one of the legs works great to hold a whole figure, but you can also do this with the torso or head (see figure 2). One other note, if you are going to use a hair dryer to help speed cure the clear over coat, make sure you don't have any excess, if you do it will dry in a puddle instead of spreading across the surface area and will look quite poor.

Now that you have all the tricks and tips let's see what you can create. Be sure to share your creations online as you finish them, Brickshelf (www.brickshelf.com), MOC pages (www.mocpages.com), and Flickr (www.flickr.com) are great places. Flickr has specialty groups to share your creations, including mine, which you are always welcome to share with (www.flickr.com/groups/custom_minifig/). Can't wait to see what you make!



Figure 3. Trimming techniques used to cut out the decals are done in stages. Notice the internal cuts which allow the decal to wrap around the head tail of the custom part by Bruce "Arealight" Shu. – Photos by Jared and Amber Burks.

Next Time:

Minifig Customization 101 – Silicon rubber molds



You Can Build It: MINI Twilight

Presenting the Twilight!

Article and Model by Christopher Deck



Hello everybody, I'm certainly glad to return for this great issue of *BrickJournal*! This time I want to present something from the brand new animated Star Wars movie *The Clone Wars* to you. It's Anakin Skywalker's personal combat transport *Twilight*, which has already been released by LEGO® as a system-scaled play set. You will find the first MINI approach of this extraordinarily shaped vessel here in *BrickJournal*.

The starship itself resembles kind of a combination of a Lambda shuttle and a B-Wing. While the cockpit section reminds one of the Imperial shuttle, the wing construction is very similar to the later B-Wing starfighter. However, the original unmodified freighter is a product of the Corellian Engineering Corporation.

Scaling the asymmetrical shape down to MINI scale was not an easy task. For the cockpit a simple 2x2 slope was chosen, as there was no need for newer fancy parts. The cockpit is roughly 45 degrees so the trans-black slope (which is one of my most favourite pieces) does an excellent job there. Below the windscreen there should be a partially hollow inverse structure, which could best be realized by a tile with handle. And that's were trouble started...

The resulting ship is a very compact construction with really heavy use of SNOT techniques (for a MINI model). It comes complete with many authentic details like rotating turrets on the wingtip and behind the cockpit, the bottom foldout wing with weapon emplacements and detailed engine section. A special gimmick is that the model consists of two main sub structures which have to slide into each other to create the ship. It's like a puzzle game to find the right way of merging the two parts.

With that I am done for now, I wish you happy building and see you next time!

Yours, Christopher 🚹

Numb.	Color	Part	Description
1	Light-Gray	2446.DAT	Bracket 1 x 1 - 1 x 1
1	Black	4070.DAT	Brick 1 x 1 with Headlight
5	Light-Gray	4070.DAT	Brick 1 x 1 with Headlight
1	Light-Gray	47457.DAT	Brick 2 x 2 x 2/3 Two Top Studs
1	Dark-Gray	30361.DAT	Cylinder 2 x 2 x 2 Robot Body
1	Trans-Light-Green	4740.DAT	Dish 2 x 2 Inverted
1	Black	4593.DAT	Hinge Control Stick
1	Light-Gray	4592.DAT	Hinge Control Stick Base
1	Light-Gray	3024.DAT	Plate 1 x 1
2	Trans-Light-Green	4073.DAT	Plate 1 x 1 Round
3	Light-Gray	3023.DAT	Plate 1 x 2
1	Dark-Gray	3794.DAT	Plate 1 x 2 with 1 Stud
1	Light-Gray	2444.DAT	Plate 2 x 2 with Hole
1	Light-Gray	3176.DAT	Plate 2 x 3 Rounded with Hole
1	Trans-Black	3039.DAT	Slope Brick 45 2 x 2
1	Light-Gray	4274.DAT	Technic Pin 1/2
1	Light-Gray	4262.DAT	Technic Plate 1 x 6 with Holes
1	Dark-Gray	30244.DAT	Tile 1 x 2 Grille with Groove
1	Light-Gray	2432.DAT	Tile 1 x 2 with Handle
1	Light-Gray	41769.DAT	Wing 2 x 4 Right

Twilight Front Hull



Twilight Rear Hull















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Numb.	Color	Part	Description
1 2	Dark-Gray Light-Gray	3062B.DAT 4070.DAT	Brick 1 x 1 Round with Hollow Stud Brick 1 x 1 with Headlight
1	Light-Gray	47905.DAT	Brick 1 x 1 with Studs on Two Oppo- site Sides
1	Light-Gray	47457.DAT	Brick $2 \times 2 \times 2/3$ Two Top Studs and Curved Slope End
1	Light-Gray	44302.DAT	Hinge Plate 1 x 2 Locking with Dual Finger on End Vertical
1	Light-Gray	44300.DAT	Hinge Tile 1 x 3 Locking with Single Finger on Top
1	Black	30162.DAT	Minifig Tool Binoculars Town
2	Black	6246A.DAT	Minifig Tool Screwdriver
3	Light-Gray	3024.DAT	Plate 1 x 1
1	Trans-Light-Green	4073.DAT	Plate 1 x 1 Round
1	Light-Gray	6019.DAT	Plate 1 x 1 with Clip Horizontal
1	Dark-Gray	4081B.DAT	Plate 1 x 1 with Clip Light - Type 2
1	Light-Gray	3623.DAT	Plate 1 x 3
2	Light-Gray	2420.DAT	Plate 2 x 2 Corner
1	Light-Gray	3020.DAT	Plate 2 x 4
1	Light-Gray	43857.DAT	Technic Beam 2
1	Light-Gray	6541.DAT	Technic Brick 1×1 with Hole
1	Black	6221.DAT	Technic Handle
1	Light-Gray	4274.DAT	Technic Pin 1/2















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You Can Build it: MINILAND Figures

Building a Sunbather in Miniland Scale

Article and Art by Didier Enjary

Let's start with the figure building. The two first layers feature the legs, hip and belly. At this stage, the model is 3 studs wide, just as most of the miniland figures are. You can use here the larger parts : 2x3 plates.

The two following layers give the necessary thickness as well as opportunities to add details : the now famous jumper plates (1x2 plates with only one centered stud) create smaller gaps or steps and help the transition from 3 to 2 studs wide. This technique is often refered as the "half stud offset" technique.

The last layer is made of tile (studless plates). It makes the overall look and feel smoother but there is no reason why you could not use plates instead. If you look closely, you can see that legs and torso are not attached in any way, which is not a big deal if you consider the model is simply put on a level surface.

The head of the original model from MINILAND has a flower tied in the hair, held with help of a 1x1 tile modified with clip. This flower part is not readily available, as it was an accessory from the Scala theme, but you can use other flowers (Clikits for instance). See also the alternative building to the right using the hinge control stick part (lever) in an original way.

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As a regular reader of *BrickJournal*, you probably have my previous and first article on Miniland people. Today let's have a look, as promised, at a totally different model: a young woman laying on the beach sunbathing.

This is a totally different build because various positions (laying versus standing up) comes with different solutions. In this case, we do not build from bottom to top - feet to shoulders - but from front to back. The model wears a red bathing suit, lying on her stomach and leaning on her elbows.

The arms are very simple - only 4 parts - and identical. You may prefer to use 1x1 round bricks instead of regular ones. Purists will notice that the torso is 3 studs wide and that forearms are 2 bricks plus 2 plates large (equal 8 plates). Knowing that 5 plates equals 2 studs (5:2 ratio), you understand the arms assembling is constrained (3 studs equal 7.5 plates, not 8). However, the way arms are attached to the torso makes the building solid enough, the stress causing only a small angle. You still can choose to remove the 1x1 round plate from one arm to get rid of the stress.

This model, with short legs, probably is a kid or young teenager. The following alternative design that you can reproduce easily from the following picture, has longer legs and looks more like an adult. Of course, you can vary colors - try a blue bathing suit and tan skin. However, you will face difficulties to find the right parts in some colors. For instance, green tiles - 1x1 and 1x2 - are (very) rare parts.

You now have learned a lot on building Miniland figures, and I think you can try reproducing LEGOLAND designer's models on your own. They have lot of humor and you might not resist a smile at these pictures!

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You Can Build It: Halloween Decoration

Pumpkins and Skulls and Tombstones...Oh My!

To celebrate the season, Mariann Asanuma built something a little spooky!

Article and instructions by Mariann Asanuma

Hi everyone! Many of you are probably familiar with my models, if not me. I'm a former Master Model Designer for LEGOLAND California. This is my first foray in making instructions for *BrickJournal*, so I hope you like them. For this issue I made a nice little Halloween vignette.

One of my favorite elements ever is the 1x1 slope (there are so many uses) and for this model I wanted to use it in a different way – upside-down!

As you might notice, there are a few differences between the instructions and the actual picture. This is mainly due to the fact that I couldn't find the ldraw (digital) files for the missing elements. But the slight changes are pretty selfexplanatory.

Also you can enhance your scene by adding snakes, spider webs, a mini skeleton, rats, or whatever else makes it more Halloween-esque. Happy Halloween!

Mariann 📘

Simple Designs: The Power of Two

In this Bricks for Thought, a LEGO builder takes a look at what two LEGO elements can do, and how a lot can be done with a little.

Article, photo and art by Didier Enjary

The 4886 Building Bonanza and 4996 Beach House official sets feature flowers of a new kind : a red, orange or yellow 1x1 round plate stacked on a green one. That is a very simplistic design. What does make us recog-

nize it as a flower? It's the context, the fact the same design is repeated and lined up over a large brown plate. We recognize the whole as a flower bed. The green parts represent stems and leaves. The upper parts represents the various colored flowers.

We can make slight modifications: by enlarging the leaves (from 1x1 to 2x2 round plate), playing with colors by whitening the flowers (from red to pink, from orange to tan or from yellow to white), and choosing a blue plate instead of a brown bed, you get water lilies.

One design can evoke a totally different object simply by changing colors or by changing scale of the context. Change the white lily to yellow and the green leaf to white. What is this weird flower? That is not a flower anymore in the Miniland world,

that's a broken egg, as you can discover by looking at the photo from LEGOLAND Billund, DK. It could also represent a fried egg at breakfast.

Simple is beautiful. You maybe feel always short of parts but be assured you can do a lot with two parts. Take two red plates 3x2 with hole and stack them as shown below. You will get then a bright heart. How strange and delightful to discover how a simple LEGO part can be combined to recreate and evoke a more complex pattern. The most surprising maybe is that building is an actual LEGO set (Christmas hearts, #1556 from 1986)







Bricks for Thought

LEGO Program:





Building Your Business by Bricks!

Article by Renee Shull Photography by Renee Shull and the LEGO Group Using LEGO bricks may seem like an obscure way to solve businesses problems, but LEGO SERIOUS PLAY is creating a foundation companies can build on. Designed in 1996 by creators Johan Roos and Bart Victor, LEGO SERIOUS PLAY is a program that teaches clients about teamwork by creating and building relationships between co-workers. The concept of LEGO SERIOUS PLAY was built around studies that linked playing to creativity and innovation. This unique formula incorporates a "hands-on" approach to get every person involved. In turn, the innovative and experiential process is designed to enhance business performance. By using LEGO bricks, people are free to create anything they want. They're told to just build, and that's what they do, but on many levels. They don't build abstractly – their brain tells their hands what to build. We've all played with LEGO bricks when we were young, but never knew they could serve such a key role in creating effective business solutions.

A Case Study: Shangri-La Hotel (Vancouver, Canada)

A LEGO SERIOUS PLAY session usually involves teams between two and twelve people and takes place over two days. First, each member of the group builds a representative model of their business with a limited selection of LEGO elements and where they think they fit within it – both personally and professionally. Next, the group joins together to create the business in its entirety. From these exercises and discussions come the "aha!" moment between each member realizing what can be improved – including themselves. By using their hands to create a model, they are able to better express their opinion about the company and themselves by using LEGO building as a common language.

As the owner of Integrated Play, a LEGO SERIOUS PLAY Certified Partner, I recently provided a team-building workshop to the Shangri-La Hotel in Vancouver, British Columbia. A full-day session consisted of "real life" situations participants face everyday. There were also many "what if" scenarios to identify the strengths and weaknesses and also to define the Simple Guiding Principles of the teams going forward. Every team makes their unique Simple Guiding Principles to direct their team's decisions.

This particular session consisted of five modules which helped in creating high-quality results. Module one is the introduction. Everyone gets comfortable using LEGO bricks and builds a tower. Some people just started to build while others waited for directions or started stressing out. The goal however was just to build a tower. This was the first learning curve - how to play at work. My personal experience working with the Shangri-La Hotel was wonderful and invigorating, as I got to see the power of play at work. I realized I was the last on the long list of training they were having for the week and they were already quite burned out. They didn't know what they were walking into except another "session." As soon as they saw the LEGO bricks early in the morning they perked right up. One person said, "Hey this is not going to be another PowerPoint presentation" another said, "Let's get started, I can't wait". The General Manager and Human Resource Manager were the only two that knew what this session was going to involve. They were willing to take a chance on "PLAY" to get their team on the fast track.

This was the first time this group of employees had come together from around the world. They were from different cultures, countries and had different assumptions of how each behaved. However, they all wanted to be on the same team with the same goal: "Wowing the guests and bridging those expectations and gaps." Their Simple Guiding Principles and team landscape were phenomenal and well thought out. After the team developed their individual models they started to put together how they wanted to work in the future and they built. Not only did they build with LEGO bricks they fused together with their individual model the team model and created their future. Once their team model was done to their satisfaction they built their Simple Guiding Principles using the available elements. This LEGO building took about fifteen minutes. They incorporated all the principles that were important for the organization and then they added their brand; the Shangri-la "S". For a group that has talked over the phone for months they gelled very quickly in the play mode.

Building on the theme of "each person is unique" was the idea behind the second module. This goes into a little more depth, discussing how everyone has a different

creative side and how the more a team is able to understand and appreciate from each other's style, the higher the quality of the results. When the Shangri-La Hotel employees were building their individual models they developed some fantastic insights the team found to be interesting and insightful. For instance the Human Resource Manager in her commitment model stated, "I am committed to being a Playground facilitator," which put her in a new role the rest of the team hadn't considered her to be in. A Playground facilitator was a new role to make sure everyone had fun and was excited about the work each employee performs. As a Director of Communications, most of her peers thought it was just about dealing with the press, "I will tell "THE BEST" stories that enhance the value of our people, hotel, and brand."

Module three is learning from other individual team members and how each feels about his or her teamwork strengths. It's what their "team struggle landscape" looks like. One gets to know and build the identity of the challenges ahead of the team, which equals the new organizational model. It became seeing the today, the tomorrow and the gap between. The gap for the Shangri-La Hotel was how do they get they work out problems when on-the-fly and celebrate successes with the team they have in place

Module four: Where does everyone come into the picture? This module introduces the teams to a team decision-making process where each participant's insights are included in the results. Everyone has to take an active part in the team-decision process. In turn, the process creates a high level of confidence in each member that the results represents the BEST the team can produce as well as a high level of commitment within each individual to follow-through and implement team decisions. This team developed a great metaphor for being an effective team player and using all the resources available to him — a bear: "I will commit to using the strength of the bear and the warmth of its fur to properly communicate effectively to all the players of our project."

Module five involves using the team decision-making process practiced in Module four. This module puts everything together into one project. It helps each team member extract the most important lesson learned during the day – and the lesson to keep at the forefront of their minds to ensure that their actions support the right focus on all levels. The Shangri-La Hotel extracted from the day of play a vehicle for keeping their team going no matter what happens; they know how each will act and react when a situation occurs. They will know who to turn to based on each person's strengths.

After the team-building workshop, the Shangri-La Hotel got in a better position to continuously move forward and stay on track when challenged, avoid teamwork pitfalls, and optimize team performance. They also have a deeper understanding of each other, including knowing worst fears and best hopes for a more efficient teamwork on a daily basis. The best part about the whole experience was listening to and watching the participants design the answers within themselves. I was there to serve as a facilitator, but ultimately they created their team landscape and Simple Guiding Principles to go by.

Canteen Vending Services, another client of mine, said it best, "It has given us the opportunity to pro-actively manage portions of the professional development of our managers and that is just an 'Easy Button'. LEGO SERIOUS PLAY provides a fresh way of unlocking the full potential of the team, which requires everyone to bring forward his or her optimal identity. It's a modern business solution that implements design and creativity to ultimately create a better work environment for every employee."

If you have any questions, please call Renee Shull directly or visit www.integratedplay. org for more information. Renee Shull is the owner of Integrated Play. For more information about Integrated Play contact Renee at contacted at 269-760-3857 or renee@integratedplay.org.



Sessions are very animated and hands-on. Session photos courtesy of the LEGO Group.

Some of the creations that were made by Shangri-La employees are below.





Community: The NXT Step Blog

A Look at The NXT Step

One of the most well-known of the MINDSTORMS weblogs was started by James Kelley. Here, he tells BrickJournal about The NXT Step and where it's going!

Article by James Kelly Screen Capture and Photography by Joe Meno



In January 2006 I received word that LEGO would be updating its MINDSTORMS robotics kit. As an owner of a MINDSTORMS RIS 1.5 kit, I was excited to learn more about the update to the product. I was also aware of the sheer volume of information found on the Internet and in books and was looking for a way to keep track of all the new information on the NXT kit and keep it organized. I am a freelance technical writer in Atlanta, Georgia, and at the time I had a bad habit of bookmarking any website that I thought might be of interest to me now or later. The number of websites was going to grow like crazy and I knew that using bookmarks was going to quickly become a problem.

A friend invited me to view his blog and I saw this as a way for me to keep my research all in one place and searchable. After creating an account with Blogger.com, I considered some names for it and, given that the NXT was a step forward for the MINDSTORMS product line, I chose TheNXTStep as my blog name.

The blog started with a simple goal – track websites, other blogs, pictures, interviews, videos, designs, rumors, and anything else I could find related to the NXT. At first, the information trickled in, little by little. I had some beta screen captures of the software and a lot of variations of what would come to be known as the Tribot. The Consumer Electronics Show (CES) of 2007 provided a nice collection of videos showing the AlphaRex and Spike and a few other designs; I was hooked. And then LEGO intervened.

In early 2006 LEGO announced that applications would be accepted for 100 individuals to help beta test the new NXT as part of the MINDSTORMS Developer Program (MDP). I applied and was accepted. Good news, right? Well, good for me, but bad for the blog.

In the few short months that I had started the blog, I was already receiving emails and comments from other MINDSTORMS fans. We shared rumors and pictures and talked about the new product, but still, information was limited.

Membership in the MDP came with a Non-Disclosure Agreement (NDA). It basically prevented the members from talking about our work outside the team or providing images or videos. Imagine how difficult it was to try and locate new information on the NXT that was safe for the public but didn't violate the NDA I had with LEGO. When LEGO finally told us the date that we would be allowed to start sharing information, I added a countdown on daily posts so visitors would know exactly when I could share. May 2006 rolled around and I was fortunate to have met two MDPs who joined me on the blog as contributors – Brian Davis and Matthias Paul Scholz. Brian was from Indiana, USA, and Matthias was from Germany. I had never really worked with colleagues that I hadn't first met in person. This was a completely new experience, but a fun one. After the deadline expired for the MDP, we were allowed to publish all kinds of information – software screenshots, our own NXT creations, and more. One of the first projects that the three of us did together was to develop a simple robot that played Rock-Scissors-Paper – we called it RaSPy. I built the beta robot, Brian hashed out the program, and Matthias handled creating building instructions using MLCad. It opened my eyes to the concept of "remote collaboration" and an idea started to develop (more on that shortly).

More and more contributors started to join the blog, many of them members of the MDP. But we continued to grow the blog and discuss things with our readers who had their own ideas and opinions; the blog allowed them to "talk back" via the comment ability of the blog (we hadn't yet added a forum to our collection of tools). During The NXT Step's first 18 months, contributors continued to join the group and many of them were writing books and magazine articles on the NXT. There was no shortage of topics and videos and pictures to share and talk about. The NXT was released in August 2006 and for the next 12 months, the blog grew from a readership of around 5,000 to over 30,000 unique readers each month.

Now, let me get back to that idea that spun off of RaSPy. Around February 2007 the blog had 10-15 contributors; I was contacted by a publisher (No Starch Press) and asked if I had any book ideas. Our robot, RaSPy, immediately came to mind. I had already completed my first book, LEGO MINDSTORMS NXT: The Mayan Adventure, with Apress, and was very interested in doing more books. I wondered if the current blog contributors would be interested in possibly doing a collaboration book; I asked and almost everyone said yes. After about almost six months of writing, editing, testing, more writing and editing, and then reviewing our work, No Starch Press released the LEGO MINDSTORMS NXT Idea Book in August 2007. With ten contributors providing robots and a mixture of chapters on all varieties of NXT subjects, the NXT Step blog expanded once again in the type of information it provided.

After the book, discussion between contributors focused on making the blog more useful to our readers. I had registered the domain thenxtstep.com so we had room to add new features if we wanted them. We created a website with the blog on the homepage and decided to add a forum so readers and contributors could have an easier method to carry on discussions rather than commenting on blog posts. And because so many of the contributors had their own books related to NXT, we added a Book tab on the homepage where readers could get more information such as downloads and sample chapters for specific books.

After two years of growth, The NXT Step reached a total of 30 contributors with an age range of 13 to, well, we're not sure who is the oldest and we're not asking. In January 2008 the team began to move forward again on a follow-up book to the Idea Book. By the time you read this, LEGO MINDSTORMS NXT Idea Book 2 should be almost done or on the bookshelves.

The blog isn't finished, either. We're all committed to growing the NXT community and contributors are always discussing new opportunities to highlight this top-notch robotics kit. As the product grows and changes, The NXT Step will continue to provide news, updates, rumors, sneak peeks, and, most importantly, open discussion with readers regarding the LEGO MINDSTORMS NXT robotics kit. You'll almost always find one or more blog contributors at the major LEGO gatherings – we currently have contributors in Australia, New Zealand, Germany, the UK, the Netherlands, Canada, the USA, and other countries. We are fortunate to have such a diverse set of talent and locations, and the blog takes advantage of this by offering coverage of as many NXT events as we can attend.

If you're not familiar with the blog, we welcome you to come and take a look. The blog is still hosted at www.thenxtstep.com and you'll find tabs for accessing the forum and other areas, too. Feel free to share your comments on blog posts or sign up for our forum and participate in some good discussion with blog contributors and our readers around the world.



James Kelly.

Community: DoubleBrick



DOUBLE BRICK.COM

<image>

Building Contests and Clubs: How a Russian LEGO Fan Club Grows and Keeps Members

Article by Alexander Horoshilov

Photography by DoubleBrick Members The DoubleBrick community was started four years ago, when almost nothing LEGOrelated was available online in Russian. Since then, things have changed. Several other sites and forums have appeared. Even the official LEGO site was translated into Russian a little bit. Still we have a shortage of online resources in our native language. We're trying to fill this gap. Our community targets every Russian-speaking LEGO fan: kids, their parents, and AFOLs, of course. We have users from various regions of Russia and other countries (mainly ex-USSR) as well: Ukraine, Kazakhstan, and Latvia. Our community is continually growing, so someday we'll separate users into different groups. Presently, we deal with all of them together. In this article I'll describe our experience of working with such a mixed community.

The simplest way to attract new users and motivate already registered members is building contests. We always have big problems with these because of the different levels of building skills among users. There are a number of adult builders that will always dominate over kids and win every contest. Typical children will only have a very small chance to win any prize, which is not what we want. We'd like to have as many participants as possible have a chance to win. The very first idea was to introduce age separation, which didnt't turn out so well. We are not large enough yet to provide separate prizes for every age group. More importantly, in some groups we may have very few or even no participants. Another problem arises from the fact that our community is an online group. We have very limited abilities to check the real user age. Nothing prevents an unfair user from pretending to be a child. I must say here, that in the time the community has existed, there have only been a few cheating attempts. I respect the honesty of our members and do not want to treat them as cheaters. At the same time, all contests have to be as clear and fair as possible. Therefore anti-cheating efforts are more important to keep community reputation and credibility at high levels. Nobody should have any doubts.

We decided to have common contests for all users with some additional rules to help young builders compete with their older colleagues. After discussions and thought, we came up with following rules. A special group was created, named "MasterBuilders" (it's not exact translation from Russian, but it doesn't matter for purpose of our article, just don't confuse them with LEGO Master Builders). This group includes users, who have shown their advanced building skills: the "MasterBuilders". These users are highlighted on the forum; in this way, we respect their experience. The other aspect of membership in the MasterBuilders group is restrictions on awarding prizes in our contests. For example, in our contest "007's car" we decided that only one MasterBuilder can receive a prize. If more members of this group were voted for, only first winner is counted. Others keep their places but prizes go to users which are not MasterBuilders.

This rule has a lot of benefits. The author of the best creation always receives the first prize, so it's fair. Most probably it will be the master builder, but there are also no limits for other users to make something better and win over them. At the same time, we motivate more users which are not in this group. They know that the best builders will not get every prize and they also can compete for one. Depending on the contest, prize count and number of participants, this rule may be modified a little bit (i.e. allow MasterBuilders to win two prizes out of five), but the basic idea is the same - the Master Builder title forces the user to compete with other MasterBuilders mainly and passes prizes to others. Novices can still compete for first prize too.

If a non-MasterBuilder wins a prize before application of "shifting rule", he or she will become a new MasterBuilder. His new status will be noted in next contests. And, accordingly, if MasterBuilder get no prize places for a number of contests, he loses this status and will participate in new contest as an ordinary user. This system is self-regulated. There is no need to check age or something else; all users are in equal conditions initially. After they show their experience, they have to put more efforts to win the next prize, so they're motivated to perfect themselves as well. A great advantage of this rule is simplicity. Many other ways to weigh down winners are possible. But they are complex and not as transparent as this rule. We wanted to keep rules short and simple.

Now I'll give a short description of our latest contest. We asked our users to build a 7 stud-wide car. This width was especially selected to make car building harder. It's very easy, to build 6 stud-wide car, there are a lot of parts of that size. Cars with width of 8 studs are more complex, because there not as many parts of width/height of 8 studs. Cars with a width of 7 studs are the most complex of them all (we didn't discuss other sizes since they are not so good for minifig scale). Every LEGO fan knows that TLG likes even dimensions. There a few parts with odd dimensions - 1 and 3 stud bricks, for example. To make a car 7 studs in width, a builder needs to combine several different elements. The contest had to show young builders various unconventional techniques. The learning effect was increased with a specially prepared guide with some basic ideas and techniques to help in building 7-wide cars.

For more fun we derived a small story from size of 7. Participants had to build cars which "Agent 007" could use on his vacations between missions. So it had to be a civil passenger car - no trucks, no weapons (just a few maybe). This background added another side to the contest. It has almost nothing to do with car building. Still users enjoyed funny discussions on this subject. This factor is also important, because increases user's loyalty.

I discussed the problem of different level of building skills above. It should be noted that it's not the only problem which has to be solved to decrease discrimination between users. One more key point is the shortage of LEGO parts. Kids usually do not have large collections of brick. Our hobby is expensive and not everyone can afford a lot of the sets. To compensate this difference, we're trying to invent building contests, where a large LEGO collection doesn't give its owner great benefits over people who don't have so many brick. Of course, it's impossible to exclude this factor completely. Large collections will provide wider selection of forms and colors, at least. But we can make contests where this doesn't play a key role.

The single car didn't require too many bricks or any special parts. A lot of useful LEGO elements can be found in every CITY set. Moreover, any single set from the recently released Speed Racer line can provide almost everything that's needed — if someone needed any parts, he could just buy one or two sets, as they are inexpensive. We saw several models derived from Speed Racer design and modified from width of 8 studs to 7 studs, but they didn't win first prizes. I think that there are two reasons for it - voting users recognized the design and preferred original works and because these cars are simple designs. Still, not every skilled user had the ability to build a nice car and enter the contest. The natural limit on the size of the model and parts and ideas availability in current LEGO sets made the entrance level of the contest very low.

There were a lot of doubts on whether to allow virtual modeling (LDD or LDraw),









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because their authors will have almost unlimited part/color combinations. Finally, we decided to allow them to participate without any penalties. The only additional requirement was to provide a source file for the model (LXF in case of LDD) to check that the model is reproducible in real bricks. And we were proven to be right with this decision. There were a few LDD entries and none of them won anything. It seems that people like high quality images of real models (yes, we also teach people to make nice photos) much better than LDD screenshots. The LDraw tools probably will allow rendering really nice pictures with help of POV-Ray, but nobody has become familiar with it yet, unfortunately.

In our attempts to create a perfect community there are a lot of other interesting details. For example it's not clear how to create the best voting system among large amount of participants. Simply polling "3 from 30" is not enough, because it's impossible to compare 30+ alternatives at the same time. We're making experiments with various options, watch and make conclusions. Hopefully, I'll describe this experience in a future issue of *BrickJournal*.













Part of the fun of this magazine is being able to take and get photos from everywhere. Most of the pics are of just a model or a layout, and I look through them all to find the strongest shot. But there are a few pics that I have that show the fun of the hobby. Often, I can't place them in the article —articles have their own pics, so these aren't 'serious' enough. So I place them here. Some pics are just little moments, some are posed, but all have a little bit of fun in them. I love finding pics like this just to pass a smile or two.

I got a lot of smiles in the past few months - I have been traveling and meeting people. I'm getting recognized, which is always a little odd to me. I try to stay behind the scenes and do things. But I have met many great people, including Renate and Jill at LEGOLand California's Clubhouse, Ted, and Susan and Dara and Tiffeny and Thomas and Mike and Scott and Robin and Erica and Henrik and Helle and Jim and Philip and Jason and Bruno and Beth and Matt and.....the list goes on and on.

Hopefully, you got a smile here - see ya next issue!

Joe Meno, editor











Last Word:









AFOLs



by Greg Hyland

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