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A LEGO Brickumentary

By Daniel Junge

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Space.

Humankind has been gazing
into its infinite vastness for millennia.
Here we are pushing the boundaries
of our knowledge,
venturing out into...

What? What are LEGO minifigures
doing out here?

What the heck are toys
doing in outer space?

To answer that,
first we have to start our story
back on good old planet Earth.

Here in the U.S.'s Pacific Northwest,
a boy named Thorin makes last-minute
preparations on his battle scene.

In the Netherlands, Rosa
is building a car in her living room.

In Shanghai, China, Yuhang celebrates
his birthday with a new LEGO set.

And in Denver, Colorado,
Eben, like so many around the world
is sprawled on his living room floor
playing with LEGO bricks.

This is what we expect, right?

After all, around half a billion people
grew up with LEGO bricks.

There are over 100 LEGO pieces
for every person on the planet.

But this story... but...

Can you hear me out there?

There. That's better.

What? What's wrong?

Why are you looking
at me like that? Oh, oh.

There. How's that?

Now, I know. I know.

You recognize me, right?

Featureless yet functional hands.

Interchangeable hair.

Perfect golden, uh, tan, I guess?

But this story's not about me.

Well, not entirely.

This story is about
a simple toy that became,
well, more than a toy.
And how its unique properties
ushered in a new era of creativity,
not just for kids,
but for a whole generation.
This is about more than the brick.
This is beyond the...
No, hang on a second.
Beyond the brick! A LEGO Brickumentary!
Ooh, look at that. That's awesome.
At the annual Toy Fair in New York City
the world's toy manufacturers
gather to show off
what they hope will be
big products for kids.
LEGO is, let's face it,
undoubtedly the greatest
success story of the toy industry.
They have become
the number two toy company
with simply one category of toy,
and that's construction.
And that's up against giants
like Mattel and Hasbro.
Mattel has Hot Wheels. They have Barbie.
Hasbro has GI Joe.
And they've got other lines.
And LEGO just has LEGO.
When other toy companies look at LEGO,
they look at them as a powerhouse.
When you look
at a four billion dollar brand
and that's going to continue to grow
this year, it's amazing what they've done.
It's become a monster brand
of the toy business.
So how did the LEGO company
become so huge?
I can explain that, but I think I better
park this thing first.
Recognize this baby?
Yeah, good old number 497.

Galaxy Explorer.

It had these cool yellow-tinted windows,
all these 2x2 computer bricks,
and, uh, these things.

It's just a small part
of the LEGO brand's fascinating history.
Let's take a moment for a little primer
on how the toy began.

Oh, no, wait a second.

There we go. Much better.

Many people know Denmark as the home
of ready-to-assemble furniture.

Sadly those people are wrong
because that's Sweden.

Denmark is home
to Hans Christian Andersen,
delicious pastries,
and the birthplace of,
you guessed it, LEGO bricks.

Back in 1916, a Danish man
by the name of Ole Kirk Christiansen
lived in the quaint little town
of Billund Denmark.

A carpenter by trade, he started a small
wood shop which burned to the ground.

Not a great start but Ole would not
be dissuaded so he built another one.

In the new factory
he was inspired to build toys.

By the 1930s, Ole was known
for his pull toys made from birch wood.

Trucks, trains, and of course ducks.

It was around this time that Ole
came up with the name LEGO.

It comes from the Danish phrase
leg godt, meaning "play well."

Then the factory burned down again.

But with Ole's perseverance,
it was rebuilt again,
this time mostly for making wooden toys,
until a fateful day in 1947
when Ole was visiting a toy fair.

He came across a new contraption,
a plastic molding machine.

Ole brought the first one
back to Denmark,
though not everyone was impressed.
At first, Ole used
his hand-powered molding machine
to make simple plastic toys.
But then his son Godtfred
had a brilliant idea.
I remember my father, for him,
the system was very, very important,
to turn the bricks
into a system of play.
The brick in itself is, of course,
a simple structure.
But with the number of bricks,
you have endless possibilities.
The idea stuck,
and the LEGO system of play was born
and continues to this day.
In fact, bricks made in 1955
still work with bricks you can buy today.
The bricks were great for stacking,
but still had room for improvement.
The Christiansen solution
was clutch power.
What is clutch power?
Clutch power is the result
of the patented studs and tubes design
that holds the bricks together.
And allows them to...
...whew...
come apart.
Then in 1960,
the factory burned down again.
Yeesh. What are they building
these factories out of, anyway?
But Ole went back to work,
and despite those pesky fires,
his company continued to grow.
This magic formula
of an ever-expanding system
with its locking bricks made LEGO toys
something that appealed
to kids everywhere.

What started as a Danish endeavor
became a global phenomenon.
Helping with this expansion
of the company
was oldest grandson Kjeld
who you met before.
You might recognize him
from some of the earliest boxes.
Cute kid.
Personally I feel Kjeld's
greatest contribution to LEGO history
was his role in the development
of LEGO minifigures, or minifigs.
Hey, guys, still no arms, huh?
They obviously improved
on that design over the years.
But what really catapulted the company
into greater success
were the new theme sets,
like Castle and Space.
And later, licensed themes
like Star Wars.
Hey! And Harry Potter.
Whoa, whoa.
Whoa! Yikes!
Today the LEGO company makes
more than 100,000 pieces a minute,
and has become one of the biggest
toy companies in the world.
But not without first experiencing
some serious challenges
in having to redefine itself
along the way.
But we'll get into that later.
And just think, all this from a humble
carpenter in Billund, Denmark.
Ooh, sorry.
No clutch power, I guess.
Billund is still the heart
of the LEGO company
and LEGO minifigures
are still made here.
Handsome little devils, aren't they?
Okay that shot kinda freaks me out.

Billund is also home
to the LEGO design team.
Here, inside the design room,
the LEGO sets of tomorrow
are being dreamed up today by designers.
Everybody I meet says
that I have one
of the coolest jobs in the world.
It's fantastic to be able
to create with these bricks.
We have our desks full
of LEGO all the time.
It's like being a child
for the rest of my life.
For many the only limitation of building
with LEGO bricks is your imagination.
But for the designers
at the LEGO company
it's a much more regimented process.
We're always working within
a system based on
these LEGO bricks here.
There's not an infinite
amount of possibility.
The constraints becomes
the challenge, if you will.
Then it's those constraints
that are interesting
to find how do we make it work.
You have to think about
how kids play with LEGO,
which is something that
we always have in our minds.
If you're five years old,
it's a lot harder to build
with smaller bricks than it is
for an eight-year-old.
At the core of the design process
is one guiding principal.
The design process really starts
with an idea of a story in a universe.
We really take a starting point
in who these characters are,
where they're living,

what they're doing.
Story provides context
for what you're doing.
It gives you
and kids especially a meaning.
It sort of helps to unlock
their imagination in new ways.
We were just trying to put together
color combinations we haven't done before.
Jamie Berard is one
of the company's design stars.
He's the creative lead
for the expert building series.
Today he's showing his boss
his new Parisian cafe model
which will be revealed
to the public soon.
What I really hope to highlight
at BrickCon is the storytelling.
For example,
the gentleman on the balcony
has actually got
a little bit of a surprise,
and he's got this ring in his hand.
That will help him hopefully
marry his girlfriend.
The job, it's amazing.
I don't want to oversell it
that, you know,
there's rivers of chocolate milk
and massages on Tuesdays.
You know, it's a job.
But it's an amazing job.
You almost wonder, like,
how long can this last?
Is this for real?
Another coveted job at the LEGO company
is that of master builder.
Like the designers,
master builders are, well,
masters at building with LEGO bricks.
But they get to think outside the box.
So as a master builder, we get to do
everything it takes to make our models,

we design models,
we do a pretty good mixture.
We do everything
from little tiny models,
all the way up to human beings.
It's always going to be different.
Every model poses its own challenge.
Sometimes it's
the sheer size of the models.
Ultimately, at the end of the day,
it's really just pushing the bounds
of what you can do with LEGO,
being creative and being artistic
and all these amazing things.
Today the master builders
are working on a huge project
that'll be seen all over the world:
the setting for The LEGO Movie.
The nicest thing about
working for LEGO is that
we have all of the pieces we need.
It's something that most
people would just dream of.
For this particular city,
I got to sit down and
order whatever I wanted.
As far as the plot of the movie,
I really don't know a lot about it.
Um, there's a lot more than just this
that's going to be in this movie,
that we're all working on
at the same time.
And it's a monumental undertaking.
Weeks later, their LEGO city arrives
and is reassembled by Paul's team
on a soundstage in Los Angeles.
It serves as the setting
for the live action sequences
in Will Ferrell's basement.
Okay, clearing guys, please.
Action.
Yeah, it's been kind of crazy,
we've had, uh,
we're shooting for five days

of live action
and the movie's mostly animated.
And we've built this ridiculous
LEGO model back there.
We built it ourselves.
Personally, with our bare hands.
Actually, we had a team
of super master builders.
And it turned out pretty awesome.
It's pretty ridiculous.
These guys have been working on it
in Connecticut for, like, three months.
And then, of course,
the first thing we do is go,
okay, we're going to smash all of this.
So there's a city,
there's sort of a castle world
that we're calling Middle Zealand.
There's a pirate ship.
Some classic space stuff from '79.
We heard we would get some free LEGOs.
Yeah! I'm literally doing this
for one classic space ship.
Hey, Phil, have your
people call my people,
we'll hook you up.
Maybe we can do lunch?
So, this movie set is pretty impressive.
But the master builders
in the Czech Republic
are working on even bigger things.
In Kladno, we produce big models
for LEGOLAND parks and for LEGO markets.
There's a lot of different stuff
we can do.
What people don't know
is we have computer programs
where model builders see the layers.
There is not visible every single brick.
There is steel construction inside.
We are looking forward
to the biggest project we've ever built.
It's secret.
Nobody should know about the project.

So there, this is the interface.
Working with Jaromir on the secret build
is American project manager Dale Chasse.
Okay, so we'll convert all this stuff
from millimeters to inches.
I have the most interesting project
on my plate right now,
than I've had in the whole 21 years
that I've been with the LEGO company.
We're secretly designing and building
an X-Wing fighter, life size.
But what's really cool
about this project is
we're copying one of our sets
that you can actually buy in store.
It's actually the item number, 9493.
And you can build this set at home.
But what we've done is
we've built it 42 times bigger than this.
This is going to be the biggest
LEGO model ever built.
Even we can't believe
this will be a reality.
We have a big team here.
There is a designer,
there is technical developer,
and there is team of model builders
and mechanics.
The beginning of our process is design.
Then in technical development,
it's about designing
internal steel construction.
We have a lot of challenges
in front of us.
We don't have much time
for every single step.
There will be eight tons of bricks used.
So they have to produce the bricks for us
for a couple weeks in Billund.
It's crazy.
The X-Wing is 44 feet
from wing tip to wing tip.
It's 45 feet from bow to stern.
It's 11 feet tall.

It weighs 44,000 pounds.
And took 17,000 hours to build.
Finally the X-Wing model is
ready to cross the Atlantic,
where its adventure will continue.
But we'll get back to that later.
I'm gonna pick up the pieces
And build a LEGO house
If things go wrong
we can knock it down
LEGO was definitely part
of my childhood, it was, uh...
Me and my brother had a big box
filled with everything,
um, just passed down from my parents.
But it was more of the blocks
rather than the sets.
And any time we'd get a set,
it would be like one of the small ones.
And you'd always look at the big kits
in the shops and be like,
"Oh, I want that."
And as soon as
I came into money, I was like,
"What should I buy?
House? Nah. Car? Nah. LEGO."
My album went gold in a week,
and I wanted a way to celebrate.
The first thing that I bought
was the Death Star.
The main thing that it does is it,
it brings out a bit of your childhood.
Which is important
not to forget as well.
You know, it's good not
to take life too seriously.
Growing up, LEGOs
was more like this to me.
It was more, you know, the bin of chaos.
I was like, "Oh, no, who would...
Why would you get LEGOs
to be told how to put them together?"
Like, I always thought
it was a very creative thing.

And then I, I think I rediscovered LEGOs
right around the second
or third season of South Park.
People would walk in while
chaos was going on,
and I'd just be putting
together these things.
And I think that having that
instruction book that said,
this one on top of that one.
And this one on that one.
It was just so therapeutic for me
because the rest of my life was,
think of something, think of something.
You know, be creative,
be creative, be creative.
And I found it so insanely therapeutic.
...goes to the basket!
I've actually been on the road
to a lot of different games.
And the fans are like,
"Man, I love LEGOs just like you, man."
I have at least 30 boxes
that are waiting at home
for me to start working on.
The biggest piece that I have
is actually the piece
that was given to me by Ellen DeGeneres.
We told our friends at LEGOs
that you love LEGOs.
- Mm-hmm.
- So we got you something.
Wait a second.
Did any of those guys
look like kids to you?
It seems like LEGO fans
come in many forms.
Let's go meet some of these, um,
well, I'm not sure what you call them.
Let's go find out.
Hey! Can somebody just
throw my hair back up here?
Here at BrickCon in Seattle,
you can see part

of the huge community
that's building with LEGO bricks.
BrickCon is one of North America's
top LEGO conventions,
along with Chicago's BrickWorld
and Virginia's BrickFair.
And there are similar fan events
throughout Europe, Asia,
and around the globe.
Spending a little time
at one of these conventions
gives you an idea of the vastness
of the LEGO universe.
There are those that use LEGO,
and there is an adult fan community.
We all refer to ourselves
as AFOLs, absolutely.
An Adult Fan Of LEGO.
Which is basically,
the reason we're all here.
To me, being one
is just enjoying everything
about what LEGO's about.
You know the Comic Book Guy
from The Simpsons?
That's I think what people
think an AFOL is.
Just a big guy living
in his parents' basement.
Just kinda tapping
at the computer all day long.
Well, if that's not an AFOL, what is?
Blue collar, white collar.
Programmers, construction guys.
Schoolteachers. Executives.
People working in science and industry.
Geeks, strangers, weirdoes.
People like me.
I am totally a geek.
For me, this is the class reunion
with all your best friends, once a year.
AFOLs are definitely a community.
Very much so.
And thank you, Internet,

for making that happen.
It was a kind of a light bulb,
when I go on the Internet, and I'm like,
"Wow, there's other people
that like doing this."
The LEGO community
does have its own language,
and it's defined
by the acronyms that it uses.
An AFOL is an Adult Fan Of LEGO.
As opposed to KFOL,
which is Kid Fan Of LEGO.
TFOL, which is Teen Fans Of LEGOs.
Some people use the term NLSO,
which stands for
Non LEGO Significant Other.
MOC. Which means My Own Creation.
A LUG is a LEGO Users' Group.
LTC. LEGO Train Club.
GBC. Great Ball Contraption.
SNOT would be Studs Not On Top.
There's POOP. Parts Out of Other Parts.
CRAPP is a Crummy Ramp And Pit Plate.
BURP. Big Ugly Rock Piece.
And the infamous LURP.
The Little Ugly Rock Piece.
They even have their own currency.
It's a black, 1x2 brick.
You can buy these
for three, four cents apiece.
But this piece produced in white,
the last time they made it
was the mid '80s.
Just like a stock market would be,
supply and demand.
And you wanna go buy it,
you're gonna spend \$4 or \$5 for it.
So what does the LEGO company
make of all of this?
We were kind of shocked.
This is all based
on what they want to do.
It's things they want to make.
It's events they want to organize.

We hadn't planned that.
It's out of our control.
Done!

Two, one, start.

There it is. I found it.

- No, no. That's not it.

- No, it's definitely it.

A familiar face at many conventions
is LEGO Designer Jamie Berard.

Remember him?

Jamie's LEGO career started as an AFOL.

I was just at a toy store,
and I see all these adults
in the LEGO aisle.

And I'm thinking, this is a bit odd.

'Cause I'm used to normally
waiting until the kids leave
and then I can come over
and take a quick peek
and pretend I'm shopping for someone.

These guys are hanging out talking,
and they're showing off the sets,
and they're buying five copies of a set.

And I'm like, I do that!

What do you... Who are you guys?

And they said, "Yeah, we have a club.

Would you like to join?"

And so it was actually this
really cool moment where I...

I didn't even know it was there
and then it kind of found me.

Jamie's life changed when

Kjeld Kristiansen

and other LEGO executives

visited a convention and saw his work.

All these LEGO people that

I never imagined I'd ever meet

were all in one place at one time,

and saw all the stuff I was building

and started having a conversation

with me, asking curious questions like,

"Have you ever thought

of working overseas?"

And then he hands me his business card

and says, "I'd like to continue this conversation when I get back to Denmark." And then... he did, and I got an internship, and then I got the job. I think it's awesome when I go to the LEGO events because, in many ways, some things haven't changed at all. I still have that curiosity. I just can't wait to see what everybody's built, to see the old faces, people that I've hung out with. It's just fun. People seem genuinely happy to see me. And I love the fact that I still feel like I'm part of the community. I'm a complete AFOL. I hate the term, because, like, Trekkies and Whovians get these cool handles. We have to use an acronym. I build characters from the big screen and the small screen, from video games and from Internet culture and memes. The first one was my Stephen Hawking model, which unexpectedly went viral. And that's when I realized there was a larger audience for LEGO creations. I'm most looking forward to connecting with all my LEGO buddies again. Uh, we get to see all the new things that we've created. It's putting on a show. And for a nerd like me, it's not often you get a chance to put on a show. So, did you figure out what you're bringing to BrickCon? Yeah, I think I'm going to bring the Haunted Doll House. We both were into LEGO as kids.

We didn't realize it
when we started dating.
And when we got married
and moved into the house,
Dave's mom called and said,
"Come get your stuff."
In that stuff,
we found a huge tub of LEGO.
We sat down one evening
and started building.
So, yeah, we did that and found out
it was a lot of fun to build together.
- Yeah.
- And we really enjoyed it.
I tend to build a lot
of steampunk creations.
I just like the elegance of steampunk.
I tend to focus more
on the small details and interiors.
You're also really big on minifigs.
Yes. I do like minifigs.
Well, obviously we're gonna have
to take the car down.
The big joke at LEGO
conventions is the 1x5.
And uh, for those of you that
don't know what a 1x5 is...
That is a guy code in the LEGO community
for a hot girl.
And, it's because LEGO
doesn't make a 1x5.
Years ago, hot girls at conventions
were a rarity.
But, you know, luckily I have my 1x5,
so I'm all good.
My definition of adults that play
with LEGOs are just tall kids.
I like to build,
but I'm not the best builder.
Do you wanna know
who the best builder is?
My mom.
I'm finishing up just the last few
of the birch trees

here behind the library.
And, uh,
it's in the middle of Rivendell.
And we're really excited
about finishing it,
but we're also a little bit surprised
at how big it turned out to be.
You never quite know when you're
working on one section at a time,
until you put it all together.
I just started building again
a couple years ago
when my son was getting
interested in building.
Let's make it only two segments long.
Why?
Because we don't want it to be too wide,
'cause it's up next to rocks.
I went from doing laundry one day
to having over two and a half
million hits on my Flickr pages.
And it was pretty overwhelming.
For two years in a row
Alice's work has received
the coveted People's Choice Award
from convention goers.
This year she's built
an enormous model of Rivendell,
the mythic city from
The Lord of the Rings.
I think people are going to like it.
I don't think that there's
anything quite like it.
One of my favorite things
to do in a convention is
to encourage the girls to build.
LEGO has historically
really been focused on boys.
And they have admitted they have only
been addressing half the population.
They're now taking it seriously.
I think there's a tremendous world
of possibilities
that has been untapped so far.

There are lots of girls
who come up and say,
"Thank you for being a role model."
Raise the drawbridge!
Load the "cattle-pults"!
Release the hounds!
Oh! Hi, guys.
As you can see, people build
all sorts of things out of LEGO bricks.
The combinations people come up with,
it's almost infinite.
Wait a minute,
I wonder if it is infinite. Hey!
There's a guy in Denmark
trying to figure that out.
I'm going to talk about
things that we know about
the growth of the number
of LEGO configurations.
My name is Soren Eilers.
I'm a professor of mathematics.
It all started in LEGOLAND, actually.
It was one of those rainy days
in Danish summer,
and I was there with my daughter.
Soren saw a display dedicated
to the original patent
filed by Ole's son, Godtfred.
Godtfred was asked
by the patent officer,
"ow many ways can you put
together six of these bricks?"
And he says, something like,
"We're still working on it,
but when I left home,
we had 102,981,000,"
or something like that.
And so I was wondering
how they computed that number
because it seemed to be
a difficult mathematical problem.
What LEGO had done
was to just count the... the towers
where you put the things

on top of each other.
Whereas if I have a building
that is sort of low and wide,
I have a lot of options
for the final one.
Of course I tried to attack
this with theory,
but I didn't get anywhere.
So, essentially, all that I could think
of doing was ask a computer.
In fact my program was very inefficient.
Took me a week to compute this number.
The correct number
is quite a lot higher.
The correct number is 915,103,765.
But once Soren had the number,
the obvious question was,
what happens if you add a seventh brick?
Or an eighth?
So it's pretty easy to count
all the way to five.
Six, I can now recompute this number
maybe in five minutes or so.
And then each time it takes
about a hundred times more.
So, next time it's a couple of hours.
Counting eight it took me
something like 500 hours.
So if I was to count with nine or ten...
This would probably take years,
maybe hundreds of years.
So what does this unsolvable problem
say about the LEGO system?
By mathematical definition,
this is a finite system.
We have a finite number of bricks.
They have a finite number
of studs and holes.
But for all practical human purposes,
these bricks are infinitely flexible,
and not only that, they define
a mathematical problem
of infinite complexity.
So I would say that,

"Yes, it is finite,
but in a way it's also infinite."
I think this is the beginning
of what we call systematic creativity.
This basic system of tubes and studs
that locks together,
and it will take a child's idea
or an adult's idea,
and it'll hold it together.
It'll give it form and give them
a new medium of communication.
The interesting thing with
the LEGO brick, as we see here,
is that the instructions
for how it fits with the rest
is actually embedded.
We don't need an instruction.
We don't need a dictionary or grammar.
It's embedded in the system.
It became this platform
where people all over the world
had a shared language,
it's like the letters or notes in music.
It's a creative tool,
it's a creative medium,
but it's also a language.
It's a language that's more global
than English and Windows.
So with such a limitless product,
how did the LEGO company experience
anything but constant success?
Believe it or not, not that long ago,
the company was in pretty dire straits.
On the CBS Worldwide Market Watch,
the Danish toymaker LEGO
today reported
its first ever annual loss.
If the kids love it, why then is
the Danish company in so much trouble?
What happened to LEGO is LEGO
had an unprecedented growth rate
when it really got
the bricks right in '78,
until the mid-1990s.

It was growing fast, everything was good,
and it suddenly collapsed.
Sales of two of their
three big products fall off a cliff.
And they almost went out of
business in 2003.
Ten years ago, our company
was in serious trouble,
and the wonderful thing about it,
we couldn't blame anybody else.
They had lost sight
of their most important asset:
the genius of the LEGO system.
Smart people from around the world
had told LEGO in the '90s
that this brick is gonna
become irrelevant.
You need to find new things.
It was seen as...
Actually, this was seen as uncool.
They were making more and more
custom pieces for specific sets.
At one point, they had
over 14,000 unique elements.
Some of the sets had only a few elements
and required almost no construction.
When we made products
which were quicker to build,
those who didn't like to build
still said, "I don't like to build it.
I'd rather buy a die-cast car
or doll or something else."
And those who actually did
like LEGO for what it is,
they said, "What is this now?"
And because we didn't understand that
and also because
we were actually, frankly,
quite arrogant as a company
towards our customers,
we were making the wrong products,
and we were not even
able to deliver the products
that people wanted to the stores.

Their fans knew what was wrong,
but LEGO company executives
weren't paying attention
to the community that had grown
around their product.
The seed of change had been
planted a few years earlier
with the release
of a product called Mindstorms.
This little yellow brick,
developed by LEGO and MIT,
turns LEGO creations
into interactive robots.
For us this was a great opportunity,
'cause we saw a great potential
of combining LEGO and computers.
LEGO had in mind that
they would develop it,
and then kids would play with it
in the prescribed way,
and they had as an audience children,
their standard, traditional audience.
But it really sort of captured
the imagination of people of all ages,
not just the young people that
Mindstorms was initially intended for.
In fact, in the first year
that Mindstorms came out,
half of the sales
were to adults for adult use.
Then there was someone who liked LEGO
who was at Stanford and was like,
"Hmm, this brick, I could hack
that open and reverse engineer it."
And they were opening up the Mindstorms.
They were writing new software for it.
Within three months,
a thousand hackers were working on it.
And this was rather a shock for them.
LEGO's response was
pretty much like, "What is this?"
They're taking apart what we created.
I mean, we put this together,
so it shouldn't be taken apart.

That's our secrets.
There was a lot of questions
in our leadership.
We could either take the aggressive
and protective and controlling route,
and the other route
would be to say well,
this is, uh, interesting.
In most companies,
and also in a very traditional way
of innovating
was to have it super-secret.
It's like closed walls, sign on the "X,"
and we couldn't say anything.
We had a lot of internal discussions
with our lawyers,
top management was involved.
Kjeld had to stand up and say,
"But I want this.
We're a company who makes things
that people can create with."
When a company starts
to deal with users,
and discovers that it
can get ideas from users,
that's Mindstorms.
That's the new way of saying,
you will deal with
your Adult Fans Of LEGO,
and you will get from them useful ideas.
We need to be aware
that 99.99%
of the smartest people in the world
don't work for us.
In the wake of the Mindstorms
product release,
the LEGO company was more open to ideas
that came from outside
the walls of its design room.
Chicago Architect Adam Reed Tucker
builds skyscrapers out of LEGO bricks.
In 2005, when his firm
went belly-up from the economy
Adam decided to return

to the more artistic side
of architecture by creating
architectural models.
One day I ventured out
to a local toy store
and filled about a dozen
shopping carts of LEGO sets
to get reacquainted with the brick.
And when I got home,
I dumped out all these sets,
and my fiance came home,
and she saw me sitting there
and she made a U-turn.
Then an hour later, called me and said,
"Is there something I need to know?"
Adam's work soon caught the attention
of the LEGO company's Paal Smith-Meyer.
And I had this idea that let's start
new business with people
who have a passionate
feeling about what we do.
And then I meet Adam
and he's standing there
with these super tall structures
built out of LEGO.
And I'm like, "Wow! These are amazing."
We can do a whole line
but me coming from the inside,
I need evidence, you know, I need proof.
So we can prove
to the world that this works.
Two months later, I come
to BrickWorld and Adam says,
"I have a surprise for you."
And then he's created
200 boxes of the first set.
On his own,
Adam had designed the box graphics
and had packaged every single set.
If Adam and Paal could make
the architecture series happen,
it would take some convincing.
After all, what Adam
was proposing to a toy company

wasn't exactly a toy
and up until now LEGO designs
were only made by LEGO designers.
If he hadn't taken and been so pushy,
LEGO architecture as it is today
probably wouldn't happen.
The series was a success,
and the line has been
expanding ever since.
So, it proved that we can work
with individuals on the outside.
It's not going to break LEGO.
It's actually creating energy.
It's creating kind of this hope,
uh, that we can make more things.
Adam is now working on a new venture
to push the LEGO boundaries.
Following up on what I did
with the LEGO architecture,
I wanted to create
a roller coaster for LEGO.
I'm always about pushing the lines.
To make the roller coaster work,
Adam designed
two new elements in his workshop:
a ball joint attached to a rail tie,
and a hitch to mount the ball in.
The fact that they do
create new elements,
um, gives me hope that, you know,
these elements can also be created.
Ten days later, Adam unveils
his coaster prototype
for Paal at BrickWorld.
It's so smooth. It's amazing. Whee!
So, that's more of like
um, a sci-fi kind of use.
This one is a runaway coal mine.
- Yeah.
- Or silver mine. Yeah.
This would not have
been possible before.
It might look like
a roller coaster part,

but hey, you can use it
for anything you want.
I think it's amazing.
I mean, I definitely
think that, you know,
kids, adults all over the world
will want to play with this.

- Everyone.
- Thanks, buddy.

In Tokyo, Japan, Kohei Nishlyama
has helped open the doors
to creativity from the LEGO community.
He's an expert in crowd creation
and calls his project Cuusoo,
which means "dream" or "wish."
Kohei worked with Paal
to create a platform
that brings LEGO users'
dreams to reality.

The idea for LEGO Cuusoo
is that anyone in the world
who has a LEGO idea can "wish"
that LEGO will one day make this.

The only thing you have
to do is actually share it
with the world on the Cuusoo platform,
and through that, create a community
of interest around your wish.

Designs that gain support
from 10,000 or more LEGO users
go up for review with LEGO management.

It's quite an honor for a design
to get released as an official LEGO set.

The first idea that got
10,000 votes was LEGO Minecraft.

Took 48 hours.

It broke our servers several times.

I think it's safe to say that LEGO fans
were waiting for an idea
like Kohei's to come along.

Now the finalists are being reviewed
for Cuusoo set number five.

If this is what it is to be a geek,
I am definitely okay with that

'cause, uh, it's the most fun I've ever had.

"Cuusoo" loosely translated means a wish.

And uh, my wish is to see more space exploration.

I want people to be more interested in space exploration.

I knew even from elementary school that I wanted to be a mechanical engineer when I grew up.

The trouble is, there were no mechanical engineering classes in middle school.

So uh, I would design entire manned missions to Jupiter using LEGO designs.

After college, Stephen landed his first engineering job, working on a space vehicle for NASA, the Mars Curiosity Rover.

I spent a lot of time in clean rooms working around parts of the actual rover itself.

It was all I could ever want to do.

It's a huge, seven-foot-tall, 2,000-pound, nuclear-powered, rock-drilling, laser-blasting, science-performing robot.

Originally I just wanted to build a rover so I could, you know, show my friends and family what I was working on and how cool it was before anyone else even knew about it.

This is the off-set differential, rocker bogey suspension system.

And on top here is the uh, off-set differential arm that swings across the top of the rover, and it connects the left and right sides of the suspension system that allows the rover to keep

all six wheels on the ground
as it travels over uneven terrain.
It doesn't have to be, you know,
battling Martians or anything.
It's doing it all for science.
I'm not a very outgoing person,
and I didn't always, uh,
interact with a lot
of LEGO users before.
I just had my own personal collection.
And I like how you can disconnect
the umbilical and take the capsule off...
I went to my very first uh,
LEGO Users Group meeting,
called uh, a LUG.
And uh, the Curiosity Rover
was received very well.
Everyone thought it was awesome.
In fact they said, "Hey, you should
submit this model to Cuusoo."
And of course, the kid in me thought,
"Oh, wow, I could be a LEGO designer."
"That's awesome."
Looking at it and I voted for it,
and there was only,
like, a few hundred votes.
Then within a week I looked at it again.
It started going up
all of a sudden, I went,
"Wait a minute, that's Stephen's.
This is cool!"
I know a little bit
about the other contestants,
and one of them would definitely be
the largest LEGO set
that LEGO has ever produced
if they actually did turn it into a set.
Took me about nine months
to complete it.
It's not just building, of course.
It's research.
I had to find all the pictures
for the model and all the parts.
I wasn't sure until the end

if it's going to work
and drive because of the weight,
but I was lucky with that.
It's not just about prestige.
If the finalists' designs are chosen,
they'll get 1% of the net sales.
If I win, then I will build it
twice this size
and ride on it through the desert.
It will just keep going round and round.
The third finalist in
this year's Cuusoo project
is a user group led
by New Zealander Nick Vs.
Nick and his team have
created LEGO models
of the video game Portal 2,
which is very popular
with the LEGO crowd.
We had decided on Portal
as the topic for our Cuusoo project,
simply because we had
a common love for LEGO
and Portal as a video game.
The Portal Project was one
of the fastest ever to reach
the necessary 10,000 votes
to be considered
a finalist on the Cuusoo website.
We think that our project
is the most likely.
We're holding high hopes
that it will be us.
I voted for them, 'cause I played
the game, and I really enjoyed it.
And I was... I'm hoping
that one could be chosen, too.
I would definitely buy
multiple copies of that set.
So if the product goes to design, what
are you going to do with all the money?
If I could do whatever I wanted with it,
I think it would probably all go
right back to LEGO.

So basically you're doing it
for the brick.
Yeah, pretty much.
I think the interesting thing,
and then maybe
the scary thing with Cuusoo,
is that it has actually
opened the company,
it has actually almost
turned it inside out.
What happened before
with, you know, this,
everything happened in secret,
behind closed walls,
is now reversed.
It's created an excitement
in the world that we can,
together, shape the future
of LEGO products.
After months of review
LEGO representatives are ready to reveal
which of the three finalists will be
chosen as Cuusoo set number 005.
Are you guys excited?
This is the next Cuusoo model
that you're gonna see.
The winner...
the Mars Curiosity Rover.
No matter how much
I fantasized about it,
it couldn't prepare me
for the reality of the actual news.
I have all sorts of emotions
and feelings running through me.
It's hard to try
and describe how they all feel
when they're mashed together like that.
Innovation from the LEGO community
doesn't necessarily need to have
the LEGO company's involvement.
While the LEGO company
is more and more open
to innovators from the outside,
there are others who are

customizing on their own.
In Seattle, Washington, Will Chapman
has built a successful business
around a hole in the LEGO product line.
This is an M2 machine gun.
This is the MP40 German
machine gun from World War II.
My HCSR.
His business manufactures
minifigure-scaled guns.
Now why would he do that?
LEGO will not produce what I produce.
LEGO won't do any weapons
that are modern.
They'll do Wild West,
which is maybe up to the mid-1800s.
And then we got postmodern,
which is Star Wars.
Weapons don't fit
into the LEGO "play well" philosophy.
I think being a Danish company,
the idea of handgun ownership,
weapon ownership
is not a big part of their culture.
So I said, "Let's try it ourselves."
When I design a weapon, I look online
for some inspirational photos.
The trouble with the minifigure
is they have giant... giant hands,
and they're a squashed-down
representation of a human.
They're really tough
to try to design for.
It's art.
It's truly, I believe it's art.
The folks that are
buying to equip an army
are always adults,
and they'll buy a hundred of one gun,
they'll buy 200 of a helmet.
It's gone from just a couple of figures
armed with a weapon,
to scenes, entire battles,
D-Day landing, Normandy Invasion.

There's invasions of Fallujah,
there's modern military Marines,
there's modern army.
You need an M16. It's an iconic weapon.
This started as a hobby,
and I never thought
that this would turn into something
that could be a worldwide phenomenon.
The LEGO world
is so adaptable, it's so modular,
that LEGO doesn't get to decide.
We get to decide how we want
to build with those elements.
Cut!
Come on, guys, put some life into it.
You're so stiff.
Okay, let's just take five then.
Amateurs.
All right, where was I... Oh, right.
Narrator guy!
Okay, the LEGO system has proven
it's a great thing for play,
but can it be used for
more serious endeavors?
There's people around the world
using LEGO as a tool
as much as a toy. Cut to:
Exterior Establishing shot.
Boise, Idaho.
We're in my mom's garage,
and we're making my film Melting Point.
It's a stop-motion animated
film made with LEGO bricks.
Jonathan Vaughan and Matt Cohen
met at film school in Los Angeles,
but they both dropped out
because they were frustrated
by the scale of projects they could do.
I used to think that LEGOs were
just for kids
until I met Jonathan
and got a telescope
into the LEGO brick filming community.
With brick films, you're uninhibited.

If he needs a 12-mile highway
to shoot a car chase,
he builds the 12-mile highway.
Whatever he thinks of,
he builds it and he does it.
To get somebody to walk,
like, five feet,
you have to take 15 frames
every second of that walk.
So you have to move them in just
little millimeter increments.
It's incredibly tedious.
There's nothing else I've ever done
that takes this long.
But when you're working with minifigs,
you don't have to deal with
agents or egos, or anything
that befalls working
with regular actors.
They're great.
If I want to do a 16-hour day,
they don't complain.
No overtime.
Jonathan's creating
one of his sets for his movie.
They're doing the work in the garage.
He tells me he's making a movie.
I have to take that on faith.
He's playing with LEGOs,
something that he's done
since he was a toddler.
My family has been
pretty supportive about this.
He's very creative,
but I would really like to be able
to park my car in the garage, yes.
Well, there's been
a long tradition of brick films.
One of my favorite
brick film makers is David Pagano.
New York filmmaker David Pagano
has been making brick films
since he was nine.
David is considered

one of the top LEGO animators,
and is known for creating complex
characters out of bricks.
Most films you're going to see
will have minifigures as the main actor.
They're just articulated enough to be
moveable into a variety of fun poses,
but not so over-articulated
that you need help
getting them to stand up properly,
or look like a normal human being,
or as normal as someone
with no nose looks.

Hey!

I have done a lot of stuff
with minifigures,
both for LEGO and just for myself,
but I also am just endlessly fascinated
with what you can build from bricks.
I just find it an interesting challenge
as opposed to having a readymade actor.
I'd rather figure out ways
to make neat-looking characters,
and then make sure they're animate-able,
then bring them to life.

I am somewhat of a LEGO archivist.
On my better days I consider myself
a LEGO animation historian,
if such a job exists.

I don't think it does,
but I'll pretend to myself,
until someone tells me to stop.

So, the very first LEGO films
were promotional videos
or commercials that were made
in the '60s and '70s.

I think it should have a big middle part
and two little sides that stick out.

But the first fan film didn't come
until the mid-to-late 1980s,
and that was a film
called The Magic Portal.

They used sloped pieces
in a really interesting way

where you could get these
weird little blobby creatures
that crawl along the set.
There's some nice animation
with some of
the old LEGO backhoe pieces.
In the early 2000s, LEGO films
really started to take off.
Everyone had the Internet,
and it was starting to become
this thing that was
not going away, it wasn't a fad.
And it was in everybody's home
as a way to connect with other people.
That's sort of when I would say
"the modern era"
of LEGO animation started.
The LEGO animation content that you
can find online just runs the gamut.
There's cool stuff, there's weird stuff.
There's some stuff
that's really well put together
and just shot gorgeously
and has really interesting parts usage.
There's immensely inappropriate stuff.
You can get all kinds.
One thing that's become pretty common
is shot-for-shot remakes of scenes
from famous films or film trailers.
So they'll build each set
that you see in each shot...
Describe what
Marsellus Wallace looks like!
- What?
- Say what again!
I've seen The Dark Knight.
If you devote yourself to an ideal,
then you become something else entirely.
Ed Sheeran has a music video
that someone was commissioned
to make into LEGO.
I'm going to pick up the pieces
And build a LEGO house
Another thing that people

are recreating with LEGO
is just, like, news events.
Some people were
re-creating Olympic scenes,
and when Felix Baumgartner
did that jump from space,
there was, like, a LEGO version
of it, like, 24 hours later.
If you do a YouTube search for LEGO,
you're going to find
13 million hits at least.
I think it will only get more prevalent
and there will only be more
and more people doing it
because it's super fun.
Oh, my gosh! I love this song!
The LEGO Movie was
done with computer graphics,
but made to look like a brick film.
The director specifically said
they were inspired by
LEGO stop-motion web videos.
And it's cool that they were able
to include a few of those.
In the climax of The LEGO Movie,
you can see my film Garbage Man.
Whoa! Awesome!
It's technically not a brick film
because it's computer generated.
Ours is going to be fully stop motion,
so I'm trying to make
one that's the best quality
for a really long running time.
It will be the greatest
LEGO movie ever made.
Otherwise, I've failed.
In the film, there's this cop,
who all he ever
wanted to do was be a cop,
this little LEGO guy named Tony.
And he used to be a skateboarder,
so he can chase criminals
down on his skateboard.
And then this guy Duman,

this great classic super villain,
comes into town
and just starts burning everything down.
Right now, you're afraid...
of melting.

In a few seconds, you'll feel the burn
in your little, plastic eyeballs.

Was that the direction you want to go?

- Yeah. I'm digging that.

- Wow.

When I was originally
working on the film,
I wasn't planning to raise any money.
But then Matt looked at the script.

I was like, how are you
going to do this?

Do you have enough bricks?

This is way bigger than anything
you've done that I've seen.

And he said, "Uh, well,
we'll have to fill in the city
probably with some CGI,
maybe get a little bit more bricks."

And I was like, "No.

You have to build a city.

This has to be the greatest
LEGO movie ever made, Jonathan."

And so I said, "Okay,
we have to do a Kickstarter."

Hi, I'm Jonathan Vaughan,
and I'm directing Melting Point,
which is a stop-motion animated film
made with LEGO bricks.

I'm Robert Fleet. I'm playing Duman.

I get to melt things a lot.

It's really fun.

Action.

So, guys, here's what I was
thinking up for the establishing shot.

We're going to need to build
basically everything you see here,
so pretty much the entire city.

We're going to have to use CGI then?

I will not use CGI, okay?

I want this to be
the best brick film ever made.
LEGO started as a toy,
but now it's definitely...
It's a way people are expressing
themselves in this weird hobby,
so it's definitely also a tool
and a means to an end,
a means to tell stories
and express yourself
in a gigantic variety of ways.
All around the world
people are pushing the limits
of what they can do
with the LEGO system,
and what it's capable of
as a building material.
Now I can officially say,
that with the height of 112 feet,
11 and three-quarters inches,
you are now members
of the Guinness World Records family.
I'd like to present this certificate
and congratulate all of you.

- Yes!

- We broke the record.

In Melbourne,
Steve Sammartino and Raul Oaida
built a working car
almost entirely out of LEGO bricks.
It's not going to set
any land speed records,
and it doesn't go all that far,
but just the mere fact that
it does go is quite something.
Andrew Carol, an engineer at Apple,
studied the remnants of a Greek device
used to determine celestial events,
which was found at the bottom
of the Aegean Sea.
Then he reconstructed it from,
you guessed it, LEGO bricks.
At conventions, fans get together
to build great ball contraptions,

or GBCs, which deliver balls from one module to another. The GBC is a collaborative effort to make a kinetic sculpture, if you will. In this case, if you watch, when this ball hits, two flip off. And they're timed so that this gate double flips. Even Google's Larry Page used LEGO bricks. Actually, in college I built an inkjet printer out of LEGOs. Page and Sergey Brin even built their first server out of LEGO bricks. In England TV host James May decided to build an entire working house out of LEGO bricks. So, the LEGO system can enable people to make real, working stuff. Sometimes, however, the goal is more cerebral. What do you think that is? How great is that? You going to take a picture with your cell phone? Well, I didn't see it at first. My sister pointed it out to me. And I'm a preschool teacher, and I am drawn to LEGOs. I'm from Indiana, we don't see things like that in Indiana. So, it's unusual. People are so familiar with LEGO bricks. Most everyone you know has snapped a few bricks together, and so that makes the art accessible, it makes it relatable. When I first started going to galleries and saying, "Hey, I do LEGO art." They kind of looked at me and said, "Oh, okay, is that cars and trucks or castles?"

You know, they have a set notion
of what LEGO art would be.
I order tens of thousands
of bricks every month.
This is how it is.
This is how I get my bricks.
In fact, I spend over
six figures annually just on LEGO.
There's probably
3 million bricks in this room.
I've made a career from a child's toy.
I've been told at times I'm a sellout
because I use this
commercial brand to create my art.
But it's a brand that I chose
because I believe
there's nothing I can't build out of it.
Growing up, I had a lot
of LEGO bricks as a toy.
It was something my parents encouraged.
They let me have a 36-square-foot
LEGO city in our living room.
It was when I was about 10 years old,
wanted to get a dog.
Asked my parents, "Can I get a dog?"
"No, you're not getting a dog."
I tore down my LEGO city,
used those bricks to create
my own life-size LEGO dog.
It was really my first time in realizing
it's not what's on the front of the box.
You can actually create whatever
you want out of this toy.
I got out of college, and I had
societal pressures to get a real job.
And I ended up going to law school.
I was doing corporate law.
And I would come home at the end of the
day and I would need a creative outlet.
And sometimes that was drawing,
sometimes it was painting.
But once I started
doing sculptures out of LEGO,
I really had found my passion.

And it got to the point where I was
working full days at the law firm,
and I would come home at night and have
a slate of commissions to work on.
And I decided to make that change,
to leave the law practice
behind, and go be an artist.
An artist who plays with toys.
You know, I don't know if this is...
if I've broken through.
I don't know if an artist ever can feel
like they've broken through
because I keep setting
bigger and bigger goals.
Nathan has been offered
his biggest opportunity yet.
He's been booked for a one-man show
in New York's Times Square
and is prepping over
a hundred pieces for it.
The New York exhibition, I think,
will be the biggest show of my life,
a culmination of years' worth of work,
as well as the largest
solo LEGO art exhibition ever.
And there's a lot of pressure.
The show will feature
Nathan's original creations
as well as LEGO replicas
he is making of classical works of art.
For Nathan, this is the opportunity
to prove himself as a legitimate artist.
I'm worried that the venue
that's taking a big risk on me
feels like this is a failure.
I'm worried that, you know,
will they actually get it
when they see it
in the exhibition format?
And really, what's
the public going to think?
Thousands of miles away in Germany
another artist, Jan Vormann,
has taken LEGO arts to the streets.

I really like to work with objects that everybody has a preconceived image of. The good thing with playful elements in the work is that people get attracted by it rather than repulsed. If I use a material which people like, they are more likely to start interacting with me. So now it has different aspects to it. On the one side, the sculpture installation, where it's just there to be visually perceived. And on the other side, a performance kind of action. It looks like a lot of fun, but Jan's work has serious undertones. Most of the times I tried to find locations which have a kind of historical background or political meaning. Today we are here in the very back of the Anhalter Bahnhof. This used to be the main train station for Berlin. This is also a place where a lot of Jews were deported before the war ended. The Holocaust is an event that's omnipresent in my mind, so I think about it a lot. You don't necessarily see it in my work, because I don't want to add like, visually dark and heavy subjects. So my idea to use the plastic construction bricks was to add a kind of colorful part of contemporary times, a material that everybody worldwide has the same feeling on it. Some people call this type of art "EGO bombing," but Jan prefers to call it "patchwork,"

and he's bringing the patchwork project
around the world.

For me, it's a kind of hopeful thing
to see that we actually share
this common culture.

Whoa...

Okay. What happens when
the thing you want to build
isn't the thing that you
want to build but rather
a representation of the thing
that you want to build?

Okay, I think I just confused myself.

What if the thing you
want to build is just an idea?

Could LEGO bricks be used for that?

In Denmark, when a rising architect wanted
to submit for a major commission,
he looked at how modular
building techniques
had become in his home country
and thought of his favorite toy
as a child.

In Denmark, because of the labor wages
and because of the bad weather,
you want to minimize the time
at the construction site.

So everything has to be
like prefabricated elements,
put together in interesting ways.

So in a manner of speaking,
Denmark has become
a country entirely built out of LEGO.

So, we thought, like,
if that's the truth,
why don't we make
this project an homage,
so we nicknamed the project
the LEGO Towers
and thought the best way
to communicate it
would be to build it out of LEGO.

And the idea became almost
like doing manmade mountains

that are pixilated,
like a sort of low resolution
alpine architecture.
To show the developer how easy
it was to build the project,
when we presented the project, we also
presented this LEGO model and sort of,
if you can build it out of LEGO,
it can't be that difficult, can it?
And sort of he...
He passed the LEGO model on to his son,
and we got the commission.
The project earned Bjarke's group
a lot of critical acclaim
and helped put him
on the international architecture map.
So, when the LEGO company
was looking for someone to design
their LEGO house in Billund,
Bjarke was the perfect choice.
Of course, we were incredibly
excited to get the job.
As all Danes know,
LEGO is a Danish product.
If BIG had been founded
with a single purpose,
it would be to be
the architects of the LEGO house.
In Cambridge, at MIT,
they're using LEGO elements
to visualize more than just buildings.
They're looking at how
entire cities work.
So, we're looking at a LEGO model
that has been constructed
to represent a square kilometer
of Kendall Square.
We're actually
in this building right here,
in the MIT Media Lab,
and overlaid on this,
you're actually seeing
a projection map of Google streets.
The MIT City Science Initiative

is using LEGO elements
to visualize wind patterns,
heat maps,
light studies, and traffic flow.
Want to see what happens
if this block gets more light?
Just pick that 10-story
building up and move it.
It all kind of highlights the complexity
of the organism that is the city.
You know, the city isn't just roads.
It's not just access to sun.
It's not just people moving,
within the transportation networks.
It's all of these things,
in the same place,
and that's incredibly hard to see.
It allows everyone, let's say,
non-expert and expert alike
to come together
on a simple platform, you know,
that's inviting, to be for engagement,
you know, in a meaningful conversation.
Huh, wow.
Turns out LEGO bricks might
solve our traffic problems.
In the favelas of Sao Paulo, Brazil,
they've taken this visualization tool
to the next level
by using it to discuss ideas,
abstract ideas
about community and class.
We challenged them to build
model cities in LEGOs,
and these constructions arise out of
the children's search for solutions
in the community in which they're living.
This is our community. Our space.
Every rotten thing that you can imagine
is in these rivers.
It was our friend who had the idea
to build a bridge
to show the difference in our society,
and it made us take

a bigger view of things.
It's showing them
that the power of change,
the power of an idea that begins small,
can sometimes have a large effect.
There's another way the LEGO
system is being used as a tool,
and perhaps the most profound of all.
Can a toy be therapeutic?
At the Yale School
in Cherry Hill New Jersey
kids are interacting with each other,
playing with LEGO bricks.
What seems ordinary
is actually quite extraordinary.
This school is for kids with autism,
and all of these kids have significant
neurodevelopmental disabilities.
They're part of a therapy developed
two decades ago by Dr. Dan Legoff.
And yeah, that's his real name.
I was looking for something else.
I wasn't happy with the outcomes
I was getting using standard methods.
And so I had, you know,
different stations in my playroom.
One of them, um, was LEGO.
And a lot of the kids, especially,
socially anxious, inhibited,
quiet, mildly autistic kind of kids,
gravitated to the LEGO area.
And it seemed like an anxiety-free zone.
The "a-ha" moment came one day
when I came out to the waiting room
and two kids that I had been seeing,
very similar personalities...
they were both bringing
LEGOs from home to show me.
And they had met in the waiting room,
and they were showing each other.
And their parents were excited.
You could tell, they were like,
"Whoa. Look at that."
They're communicating.

They're interacting. This is cool."
Dr. Legoff allowed the kids
to play with LEGO toys,
but only if they built together.
Working in groups of three,
one is the engineer,
one is the parts supplier,
and one is the builder.
Only by communicating
can they get to a finished product.
Good.
This is a good time to switch.
Anybody who hasn't done building yet
should take a turn now.
It's coming along real nice.
Making them do a systematic thing
in a social context is the trick.
Building LEGOs is cool,
but you know what's even better
is to do it with my friends.
It is so exciting
to see this thing working.
So I have one student
who interacts with other kids
in the LEGO club
much more just in that one day,
than he has interacted with kids outside
of LEGO club for the whole summer.
- Right.
- So that's a pretty big deal.
Parents were saying,
"Oh, my kid loves going to see Dr. Dan.
Isn't that great?
He finally has a therapy that he enjoys.
He seems to be getting better socially."
But there was no data on it.
Dr. Legoff conducted a scientific study
comparing the behavioral improvements
from his therapy
versus traditional therapy.
Now those kids did get better.
But the LEGO kids got
significantly better than they did.
One of the many kids who has benefitted

from this kind of therapy
is Adrian Pitt, of New York City.
LEGOs are usually
all about concentration.
And I need to concentrate
on something a bit more.
It helps me, like, focus.
Why don't you take off...
Adrian is... He's just a real nice kid
who wants to make friends
and wants to play.
He has speech and language delays,
and he has been in speech
and language therapy
since he was about three years old.
The great thing about LEGO,
and the reason
that I love it for him so much
is there's no words.
The instructions are the pictures.
So if you can see,
you know, you can follow directions
and you can complete LEGOs.
Some of these pieces
need to have measurements,
so this one needs to be
exactly seven millimeters.
This is how we measure.
Adrian's very proud of what he built.
There's a real sense of accomplishment
once he's finished something,
and that's a big deal for him.
I'm having a bit of trouble
attaching this part.
If I don't get it right,
then it's not going to work.
In a secret location in Long Island
the components
of the life-size X-Wing model
have arrived via freighter
from the Czech Republic.
The X-Wing must be fully assembled
then broken up
into five transportable pieces

to be brought to New York City
for its unveiling in Times Square.
There isn't much time.
We are finally in New York.
We are really near to final stage.
And it's just a couple of weeks more,
and that's it.
You can imagine this being
a giant kid's bedroom,
and we've just opened up
the box of bricks,
and we've organized our parts
and now we're assembling it,
a lot like you would at home.
Except we're just doing it
on a massive scale here.
How is this project different
from maybe the one that
you build in your bedroom?
Here we have heavy equipment for lifting
5,000-pound pieces
and 8,000-pound pieces.
And you probably don't have steel
inside your models at home.
We are on schedule, but it's...
Even just unpacking the pieces,
it's not like in five minutes.
It takes like half a day.
It takes time.
We need a couple of days for everything.
All right, I think we got it now.
This first, it stays where it is.
Second, the engine.
And then the rest of the wing.
It's cool.
Behold, the X-Wing star fighter.
With the assembly complete,
now comes the biggest challenge of all,
bringing a life-size X-Wing
into the busiest block in America
without detection.
Today is Wednesday.
It might not be that bad.
But we're going to the heart

of New York, so...

There are still challenges
in front of us
because we have
only night until morning.

Well, our plan
is to spend the whole night
assembling it, putting it together,
and at 6 A.M., roll it back
and hide it inside the box.
It's seven in the morning,
and it's done.

Adrian's father is bringing him
into Midtown Manhattan
for a special surprise.

What does it say?

Secret model. Indestructible box.

Do we have any LEGO fans here?

Does anyone here want to know
what's inside that box?

- Yes!

- I can't hear you!

I said, "Do you want to know
what's inside that box?"

Yes!

I want you guys to stretch
your arms out all the way
to harness the power of the Force
along with Yoda to open up this box.

Ready? One... two... three!

X-Wing!

This X-Wing Starfighter
is the largest LEGO model
that has ever been built.

I'm talking
over five million LEGO bricks.

Five million, three hundred,
thirty-five thousand,
two hundred pieces,
and 45,000 pounds.

This is the coolest thing
I've ever seen.

Three, two, one.

Also in New York, Nathan Sawaya

is making last-minute preparations
on his one-man show
The Art of the Brick.
It finally opens tonight.
I am very nervous,
but also very excited to see those folks
walk through the door
for the first time tonight.
This is The Art of the Brick.
This is my largest exhibition
I've ever done,
and it just happens to be the largest
solo LEGO art exhibition ever.
I had a goal of taking LEGO
into the contemporary art world,
and to do so, it had to be done in a way
where I was really putting myself
and my soul into the work.
You know, part of me wants
to just be a fly on the wall
and listen to people's reaction.
And I'm going to try and do that
as much as possible.
So, um, we'll see what happens.
There it is, thank you.
First impression, I just got blown away.
I didn't expect to feel
this much inspiration.
Amazing. I worked
with LEGO when I was a kid,
but I always built things
off the back of the packet,
and I can't believe that
someone's actually turned around
and turned it into something
from their imagination.
This is something
that is delightful and playful,
and it's something that can really
spark the imagination
in children and adults.
We have had a few art critics
walk through already,
and of course I'm nervous

to see what they say,
but I think it's almost a compliment
just to have a serious
art critic from some
major newspapers
in this country walking through.
They were not dismissing it
as just a toy display.
It's not just a gimmick. This was art.
What do you guys think?

- I think it's good.

- Yeah?

- Did you make that?

- I did, I made all of these.

This type of exhibition
is going to draw in folks
who have never been
to an art museum before in their life.
And they're coming because
they have a familiarity with the toy.
And if that opens them up
to the art world for the first time,
then I've done my job.

LEGO Designer Jamie Berard
is headed to BrickCon in Seattle
to unveil his new Parisian Cafe set.

But while he's there,
he's got another mission.

These are our happy boxes.

Now, we don't know what's in this.
He's convinced his fellow designers
to compete against the public
in the master build contest.

Okay, teams.

These are the same products
that will be given to LEGO fans
at BrickCon in Seattle, Washington.
And what we want to do
is actually participate more in the event
by doing the challenge they will be
doing there, we'll be doing it here.

Welcome!

Okay, you notice
there are only 25 stations.

Pick a teammate and go sit down.
I think it's going to be a lot of fun
at the BrickCon convention,
because when you have
a head-to-head with designers,
of course you want to beat them.
All right, so what do we got here?
- Okay, that's cool.
- What is our angle going to be?
The reason that you can see
we have pig and cow heads,
is because the theme for this year's
BrickCon is Pigs Versus Cows.
Does everyone have two pig heads
and two cow heads?
Are there any questions?
- Yes.
- It's one MOC?
It's one MOC, but it can be
how many buildings you want.
Make up the story as much as you want,
and then have a lot of fun with it.
Use all the pieces,
use all the set, as much as you like.
You'll have one and one half hours
to build. Are we ready?
Yeah!
Go!
So, the idea behind this is that
they should be fighting for something.
It's a battle or some type
of pigs versus cows.
See, this is always like, you know,
why does it always have to be battles?
Maybe whoever wins stays alive.
- Stays alive.
- Yeah.
Contestants, you now have
fifty-nine minutes
and fifty-one seconds left!
Pressure!
Oh, stress!
I hate building under stress.
How are things going,

what's your process here?

You can build anything with anything.

Right, right.

So, come up with a good story first,
and then make the pieces do
what you need them to do.

- Interesting.

- Build a story.

This is the first time we've heard
someone talking about story,
which I know was very important
in this contest.

He's like a cyborg.

So he's half-cow, half-robot.

- Yeah.

- Yes.

- It's a "cowborg."

- Oh, that's a good idea.

- Do I need bigger horns?

- Yeah, much more horny.

You pig.

Some of the stories at some point
just got really ridiculous and crazy.

And yet, because we were
going to a fan event,
it was kinda fun to let it
almost progress

a little bit further
than we normally would.

It's a "cow-tapult."

Dave, Stacy,

how's the competition going so far?

We have a lot of pieces,
but I think we're on the right track.

Josh, why don't you tell us
what you guys are working on?

We have a little house
of ill repute going on here.

It's a cow club,
but the pigs have come in.

He's relieving himself
in the bush right here.

Yeah, he's super-fast.

He's turning round, round this guy.

I'm expecting some people
to look at them and go...
Really? Is this the best you got?
The LEGO fans don't know they'll be
competing against LEGO designers
until Jamie shows up.
I just have to look at your animal
because we were trying
to see how you did it.
He's making us look bad.
Time's up!
We finished.
Make sure your MOC is arranged
the way you want it to be seen.
Step outside and come back
in ten minutes.
Congratulations!
Let's bring them in,
let them know what's going on.
You guys did such a great job,
it was really hard to tell
who was our champion.
So, Number 8, won't you
stand by your MOC, please?
Winner is Number 8!
We basically split off.
We each built a mech.
So I built the pig mech,
and Chris built the cow mech.
So they're kind of like
Rock 'Em Sock 'Em Robots?
Yeah, I think what
we really liked about the MOC,
and what made it really win,
was the fact that
not only did you use
the small pig and cow heads here,
but you also constructed
robotic ones from scratch
with the bricks you were provided.
The winner was, I definitely agree...
Was really a standout.
I knew we'd have tough competition.
These are some really amazing builders.

I mean, I'd like to think that we came in the top 28, which was pretty good. Shortly after the master build Jamie introduces the new Parisian Cafe set to much fanfare. Then participants gather in the main hall for the annual award ceremony. Alice Finch's Rivendell build is being considered for the coveted People's Choice Award. The People's Choice Awards are those voted upon by the public. We counted all those up, and we came up with Winners of People's Choice. And the winner is... Rivendell!

It's a pretty amazing feeling to have 10,000 people say that they like what you build. To have a woman win is pretty unusual. To have the same person win three years in a row is unheard of. One of the fundamental ways we know about humans and our history is by the things that they build. Maybe little plastic bricks are a modern adaptation of that, but really it's about creating something. We are definitely at the core of what is human, is the capacity to build. In the big picture, life on Earth has evolved through millennia by adapting to the surroundings, until the point where we invent tools, technology. We suddenly get the capacity to adapt our surroundings to life. So we now no longer have to suffice with a cave we can find or a tree we can climb into.

We can actually build our own cave,
and we can build our own tree house.
The moment where we really became human
was the moment where we got this power.
It's also a mindset somehow.
It's believing that anything is possible
if you have the right tools
in front of you.
Sometimes we don't have
an opportunity to just be free,
and everything
that we have inside of us,
we never have
an opportunity to let it out.
And we're always looking
for something to inspire us
or to just give us some joy.
Being able to take your dreams
and take your thoughts
and materialize into something,
it's just a wonderful gift,
and I think the LEGO brick
has given that to the world.
In Idaho, Jonathan and Matt
are nearly finished editing
their masterpiece, Melting Point.
The X-Wing has landed permanently
in Frankfurt Germany.
In Copenhagen,
Soren is still trying to figure out
just how infinite the possibilities are.
And in the Czech Republic,
Stephen's Curiosity Rover
is finally rolling off
the assembly line.
Oh wow, that's a lot of rovers. Awesome.
That's really nice-looking box art.
Oh, yeah, that's the great thing
about Cuusoo sets,
they have the best boxes.
- Oh, there I am. It's me.
- There you are.
"It's my hope that this model
encourages the public support

that is integral
to the continued development
and exploration of outer space." Yeah.
I'm glad Stephen mentioned space.
Didn't we start this film out there?
I promised we'd explain that, and seeing
how this is the end of the movie,
now is the time. For that story,
we go to Pasadena, California,
and NASA's Jet Propulsion Laboratories,
or JPL for short.
As engineers and scientists are
developing space craft ideas and missions
to go out and explore
and learn about the universe,
we sometimes use LEGOs
to kinda put together a concept
and see if it makes sense.
So there's a room here
at JPL called the Left Field,
and it actually has these toys,
sort of a kid's dream.
Has big boxes of LEGOs,
and scientists and engineers
get together and actually
construct something
that looks a little bit
like the spacecraft they want.
Lift off of the Atlas 5 with Juno
on a trek to Jupiter.
The Juno project is a NASA mission
that was launched in August of 2011
to go to Jupiter,
and we will use our instruments
to learn about Jupiter's formation
and other solar systems
around other stars.
But the LEGO system was not just
a part of the design process.
We're onboard!
NASA engineers have mounted
three aluminum friends of mine
to the hull of the Juno spacecraft.
The three minifigures are modeled

after Galileo the scientist,
Jupiter the god and the goddess Juno.
They're attached
to the main deck of the spacecraft.
They were made by the LEGO company,
to NASA specifications,
of a special spacecraft-grade aluminum.
Sometimes I imagine,
what are they seeing in their voyage?
They're able to see
this incredible view.
In fact, they're seeing the view
that we all want to see.
We're living vicariously
through these LEGO minifigures.
They represent humanity in many ways.
Almost everything in the universe
is built from something else,
some fundamental building block
like an atom or a molecule,
and for me, LEGO represents one
of those fundamental building blocks.
And look how many things
we've built from this simple toy.

- Action.

- Action.

Cut!

Release the hounds!

Now, was that... was this a joke?

Was this supposed to be funny?

'Cause I don't know if I...

I certainly don't get this.

Who wrote this?