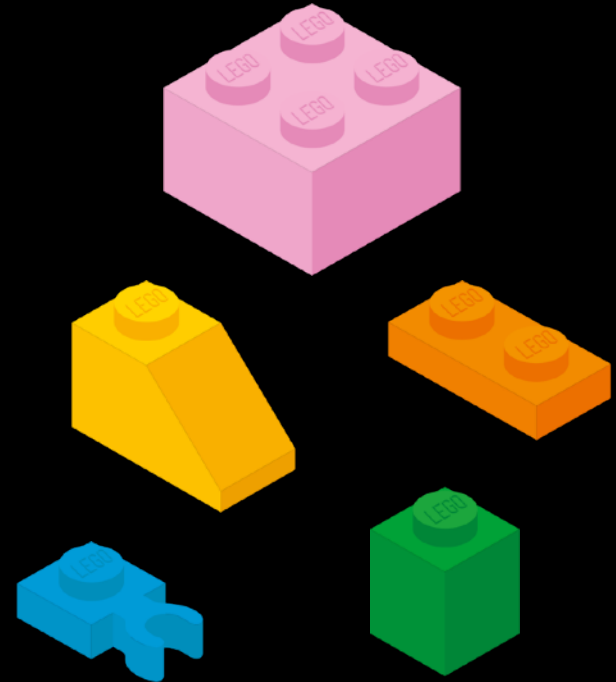




Universal Design

In Digital and Physical Interactive
Play Experiences

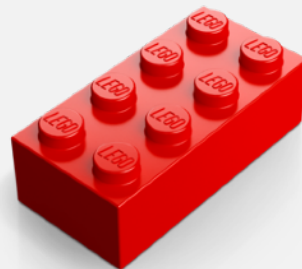
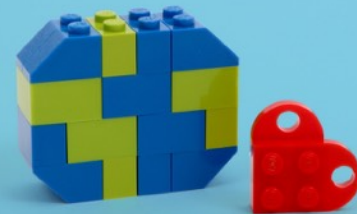
Bret Schafbuch
Lead Concept Developer
The LEGO Group





The talk

- What is Universal Design and why consider it?
- Some LEGO product experiences.
- How Universal Design makes its way in.





What is Universal Design?

The term was first coined by the architect Ron Mace in the 1960s:

“Universal design is the design of products and environments to be usable by all people, to the greatest extent possible, without the need for adaptation or specialized design.”

usable by all people

universal design benefits people of all ages and abilities

The High Line. New York City.



High Line, 2012 by InSapphoWeTrust, [Attribution-Share Alike 2.0 Generic](#)



High Line, 2012 by Mike Peel, [Attribution-Share Alike 2.0 Generic](#)

Dokk1. Aarhus.



Why care about Universal Design? (Wearing a business hat)



Happier customers;
all ages and kinds



Happier employees;
works for all



More innovation;
invent solutions to
broad problems



**Reach more
customers;**
universal



LEGO Makers – Employees



Personas for 3D Tools

Model Designer (Self taught)



Age 35
Nationality Worldwide
Education Mechanical Engineer
In current position 10 years

Previous knowledge in 3D software
Solid Works **3** 3DS Max

Currently works with and Confidence level
EBT ★★★★★ LDD Pro ★★★★★


Personal Goals
Travel Buy a house Be happy Professional growth

Hobbies
Video games Reading Sports

Personality traits
Introvert, Analytical, Loner

“ I wish I could import my files from EBT to LDD Pro faster and to use LDD Pro in a conceptual phase in development. I would like to have rendering in LDD Pro. ”

Model Designer (Design education)



Age 29
Nationality Worldwide
Education BA in Design
In current position 5 years

Previous knowledge in 3D software
3DS Max **3** AutoCAD **A** SketchUp **S** Maya **M**

Currently works with and Confidence level
EBT ★★★★★ LDD Pro ★★★★★
Photoshop ★★★★★ Illustrator ★★★★★


Personal Goals
Travel Have a happy family Professional growth

Hobbies
Video games Reading Art

Personality traits
Extrovert, Curious, Perfectionist

“ I would like to have an “autosave” function in LDD Pro, so when the programme crashes I don't have to redo my work. Sometimes it takes me long time to select different parts manually. ”

BIX Specialist



Age 40
Nationality Danish
Education BA in Media
In current position 7 years

Previous knowledge in 3D software
AutoCAD **A**

Currently works with and Confidence level
EBT ★★★★★ LDD Pro ★★★★★
InDesign ★★★★★

Personal Goals
Professional growth Home improvement Travel

Hobbies
Family time Social activities

Personality traits
Introvert, Perfectionist, Funny, Helpful

“ Overall I like LDD Pro. I would like to get information if there is any action taken after I submit feedback. I find that when scrolling the timeline the scroll is too fast and easily get lost due to that. I would like to be able to click less, as my hand gets tired from clicking. ”

Design Manager



Age 35
Nationality Worldwide
Education BA in Industrial Design
In current position 5 years

Previous knowledge in 3D software
ProEngineer **S** Solid Works **W**

Currently works with and Confidence level
EBT ★★★★★ LDD Pro ★★★★★
Illustrator ★★★★★ Photoshop ★★★★★

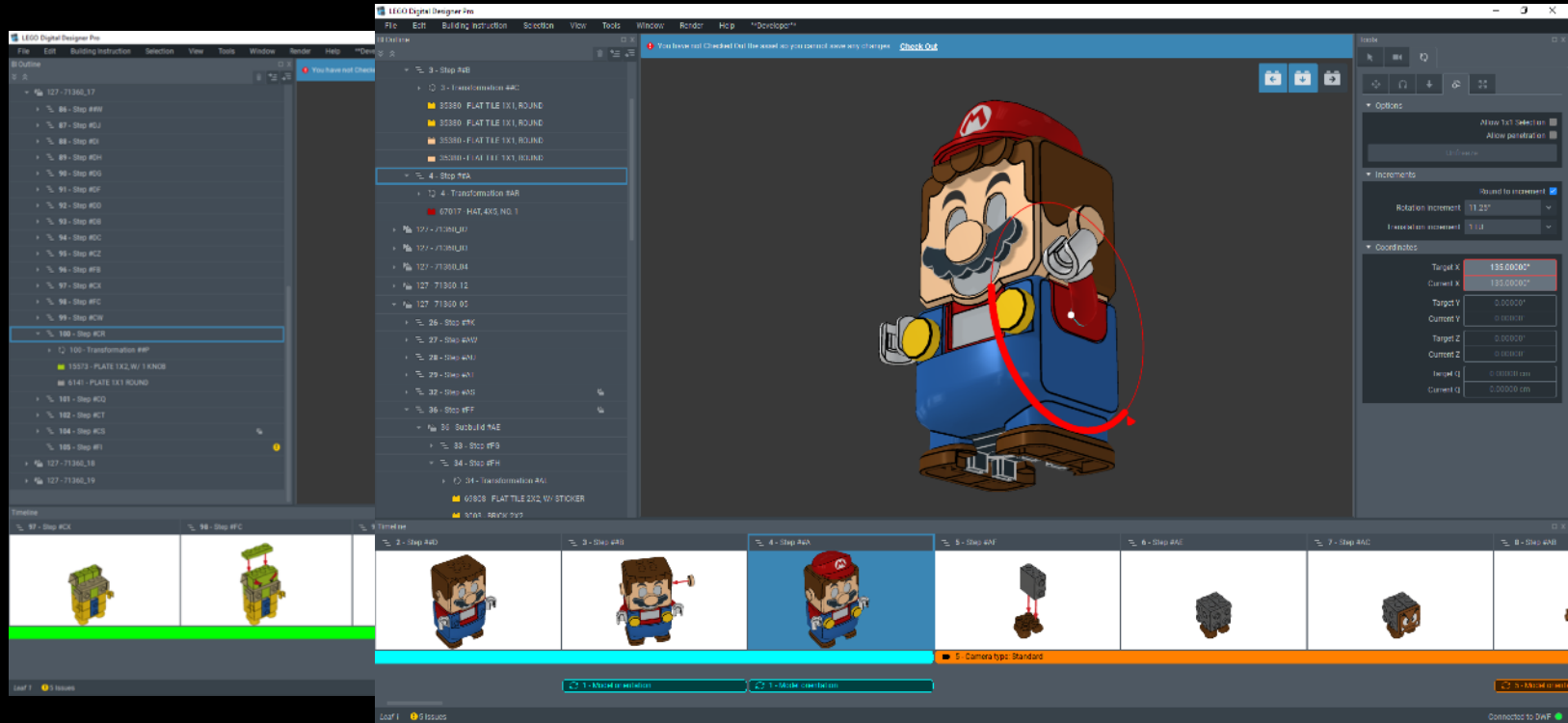
Personal Goals
Inspire people Have a happy family

Hobbies
Cooking Sport Building LEGO

Personality traits
Extrovert, Organized, Emotional



LDD Pro – Building Instructions Mode





Kids and fans of all ages – Consumers

60197 Passenger Train



71360 Adventures with Mario Starter Course



42099 4X4 X-treme Off-Roader



THE NEW 4x4 X-TREME OFF-ROADER

21323 Grand Piano



Build-your-own LEGO® Ideas Grand Piano



Universal Design for Learning. CAST.org

Every learner is unique. Support and challenge. Remove barriers.

Provide multiple means of Engagement.

Provide multiple means of Representation.

Provide multiple means of Action and Expression.



Specific ways to incorporate Universal Design

Design for broad needs for age, in general, in app usage.

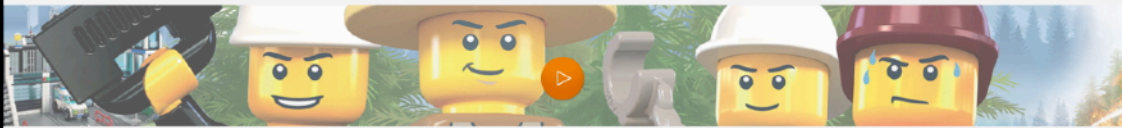
Consider multiple environments of usage.

Understand the audiences' lives. Children's needs and abilities can change. Design for the differently abled.

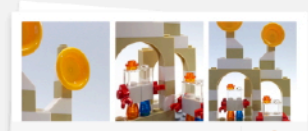
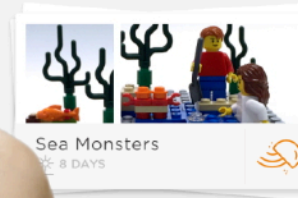
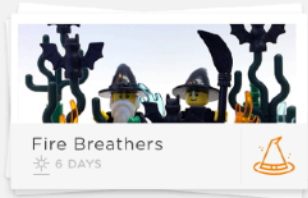
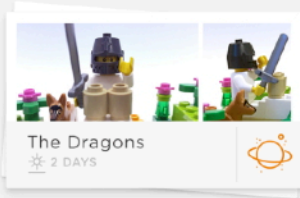
Questioning User Interface standards.

Typeface choice and legibility.

a a



Start a new story





Steps you can take now to incorporate Universal Design

Leadership level

- Diversity and inclusion
- Team culture

Product level

- Broader co-creation
- Evaluate against the Universal Design checklist
 - (Center for Universal Design, College of Design, North Carolina State University)
- Think in terms of what could go wrong - Pre-mortem



Contributions

- Background on Universal Design.
- Showed a little “behind the curtain” at the LEGO Group.
- How it can be used in interfaces for children and fans of all ages.
- How you can transform to have more Universal Design.

“Less is more”

Mies van der Rohe



“Less is a bore”

Robert Venturi (and Denise Scott Brown)



The Children's Museum of Houston. 2018, by Wally Gobetz. [License](#).



“Yes is more”

Bjarke Ingels



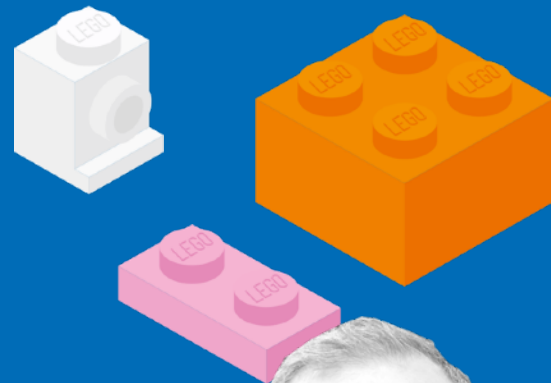
Stallet. 2011, by Jens Cederskjold. CC BY SA 3.0



Bjarke Ingels. 2015, by Epizentrum. CC BY SA 3.0

“Play is more”

Bret Schafbuch



EVERYONE
IS AWESOME

