BUILD IT Design Challenge
Skyscraper

Use your imagination to work through the Design Process and draft an original plan for a skyscraper. Collaborate with a partner to brainstorm ideas and provide feedback on final designs, then translate your design into a 3D model using LEGO! Be sure to check out our Pass the Duck Activity warm-up to get familiar with the Design Process prior to starting this challenge!

Audience
- Builders of all ages, for individual or team building

Materials
- Sketching paper
- Pencil
- LEGO baseplates
- Assorted LEGO
- Design Process

Vocabulary
- Steel skeleton construction – A construction method that uses a steel frame to support the floors, roof, and walls of a building. The building’s load does not rest on the walls, but rather on the frame.
- Load-bearing construction – A construction method that typically uses masonry (stonework) for building structures. In a load-bearing structure, the building’s load rests on the walls.
- Residential – a residential structure is designed for people to live in
- Eco-friendly – designed with the impact on the environment in mind, minimizing the impact on plants and animals in the environment

Guiding Questions
- What is a skyscraper? Traditionally, a skyscraper is a building of ten stories or more, often with a steel skeleton frame. Skyscrapers come in many different shapes and sizes!
- What are skyscrapers used for? Skyscrapers can have a number of uses! They can be used for residential purposes, office spaces, retail, and more. Some skyscrapers have more than one use!
- What are some constraints of building tall? Steel skeleton frames are often used for skyscrapers, since there are more limitations on building tall load-bearing, masonry, buildings.
- What will the overall shape of your skyscraper be? How tall will it be?
- How will a tall building interact with the environment around it? How might it affect animals like birds?
- What design elements could you work into your design order to make a more eco-friendly skyscraper?

Instructions
1. Define the problem, collect information: You are tasked to design and construct a skyscraper using LEGO. Use the guiding questions above to brainstorm and analyze ideas and sketch an initial design for your structure.
2. Build and test a model: using your sketch as a guide, translate your ideas to a 3D model using LEGO.
3. Present your ideas to others for feedback: After you’ve finished your build, share it with the rest of your team! Share three unique things about your underwater hotel and what makes it special. Ask for feedback from your team to figure out what part of your design you could improve and keep building!

Share
We’d love to see your work! Share your creation with the Chicago Architecture Center on Facebook or Instagram using the hashtag #Chiarchitecture

Extend
Many more challenges await. Visit our website to see a list of more LEGO challenges, and be sure to share your work with us! #Chiarchitecture