

Detail Engineering for McDonald's Playland

Case Study: Free Play



SUMMARY

Industry

- Entertainment and recreation

Customer Location

- Mendham, NJ and Seoul, South Korea

Business State

- Free Play only had sketches of the playground concept, and required industrial and detail engineering work to bring this concept to life. Structural analyses on the equipment had to be conducted as well to ensure patrons safety.

Technical Situation

- Expensive servers and high-tech software were required to update the industrial design, complete the detail engineering, and analyze complex structural problems.

Solution

- NLS engineers took Free Play's concept and engineered it to be structurally sound and functional.

Benefits

- NLS engineered an innovative playground design that was received with positive reception by the McDonald's patrons in Seoul, South Korea.

Services

- Industrial design services
- Design engineering services
- Structural engineering services

Company Overview

After realizing the limitations of traditional playground sets and equipment, Dan Schreiber founded Free Play in the fall of 2013. It is a studio that creates sensory focused play structures and interactive learning environments for children. Schreiber's main focus is to give children the freedom to play as they choose.

Free Play has four main abstract structures that could easily be mistaken as art, rather than playground equipment. Each piece can be mixed and matched to create different play areas and foster beneficial creative play.

Situation

FreePlay's CEO, Dan Schreiber, had an idea for a new type of playground. After sketching up the concept, he took the drawings to McDonald's to share his idea. McDonald's loved the concept and had an immediate need for one of these abstract playgrounds in McDonald's' new Asian flagship store in Seoul, South Korea.

Naturally, when designing a playground, it's imperative to make sure it's structurally safe and won't fall down. NLS was originally brought in to perform all the structural analyses on Free Play's new playground equipment. However, as the project developed, NLS was also tasked with updating the industrial design and completing the detail engineering work for the playground.

Industrial Design and Detail Engineering

As this was the first system of its kind, the detail engineering of a playground that could be easily manufactured became more and more important, and NLS was excited to take on this extra responsibility for the project.

The NLS engineers, and all of their talent, were able to engineer Schreiber's concept into a reality. The two main pieces of the playground are referred to as the Ant Farm and the Maze. They are two of the four flagship structures that Free Play is known for—all of which we have engineered.

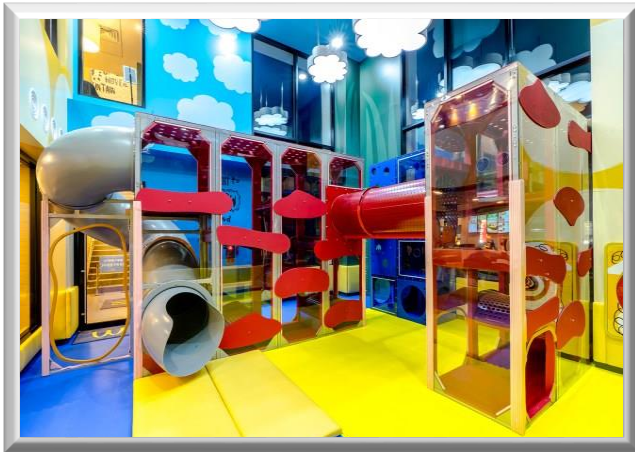
Structural Analysis

NLS engineers took Free Play's concept and engineered it to be structurally sound and functional. We used decades of structural analysis experience and FEA tools to simulate the load forces on the structures under a maximum occupancy load to validate the design. We also made sure that the end product was true to Free Play's core values and would allow children the freedom to play as they choose.

Results

The Ant Farm is a massive polycarbonate structure that supports suspended climbing tubes that allow a child to climb through it or into it. The Maze is a boxy blue structure filled with holes that can be arranged and adjusted like blocks. The outside is a climbing wall, while the inside is an occupiable space that a child can enter and exit in multiple ways. Both structures are modular and very climbable, with a lot of interesting textures and surfaces to enhance a child's sensory experience.

This playground was the first of its kind, and the McDonald's flagship store in Seoul, South Korea opened with positive reception.



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