3M Science. Applied to Life.™

# Inspiring creativity and shifting perspectives with engaging glass finishes.

## 3M™ Dichroic Chill, 3M™ Dichroic Blaze, 3M™ Controltac™ Graphic Film IJ180 and 3M™ CRYSTAL Glass Finishes

**Minnesota Children's Museum – St. Paul, Minnesota**

### ▸ Project Scope

Since 1981, the Minnesota Children's Museum has been dedicated to sparking children's learning through play. In 2015, the museum broke ground on a multi-million dollar expansion, adding 10 new exhibits focusing on open-ended activities and putting children—and their imaginations—in the driver's seat. As a result, each new exhibit was designed to prioritize playful learning, allowing children to develop the skills they need to succeed throughout life.

To ensure a creative, collaborative environment, exhibit producers updated their approach to design, utilizing architectural materials and glass finishes to encourage interaction and creative thinking. Ultimately, every design choice—from the walls to the exhibit surfaces—was meant to inspire natural learning through play.

*"It's rare to find a material that so clearly relates to the overall goals of an exhibit space."*

*— Chris Lee, Senior Exhibit Designer, Minnesota Children's Museum*

Top photo: 3M Dichroic Blaze
Lower right photo: 3M CRYSTAL Glass Finish

## Situation

Multiple exhibits and activity rooms span the building's three floors and target a specific age group. Although each exhibit is different and involves age-appropriate experiential activities, they all have the same objective—open-ended play. "A key goal for this renovation was to create experiences that give visitors the time, space and freedom to explore," said Mary Weiland, Senior Experience Developer. "Anything we can do to create rich environments and spur visitor creativity is our primary goal."

During their time at the museum, visitors can experience a variety of new exhibits including The Sprouts Gallery, a space for children under the age of three to explore and learn, and Forces at Play, which features a bubble exhibit and car wash. Additional museum highlights include The Studio, which is designed so kids can tinker with real tools and authentic materials, and Tip Top Terrace, a rooftop patio where visitors can make music, sketch and talk about the city around them.

Creating unexpected surprises to encourage critical thinking and communication was a challenge exhibit designers and producers welcomed with open arms, as it allowed them to be strategic in how they used every inch of the building and its surfaces. Although windows and natural light offered unique opportunities, the museum also needed to identify a variety of dynamic materials that challenged conventional perspectives of design.

## Solution

Recognizing the opportunity to encourage play through design, exhibit producers utilized a variety of 3M products including 3M™ Dichroic Chill, 3M™ Dichroic Blaze and 3M™ Controltac™ Graphic Film IJ180 throughout the building to serve a number of purposes. 3M Dichroic Films are the focal point of several exhibit spaces as they offered a way to create unique, ever-changing color to the building's glass surfaces.

In the Sprouts Gallery, the 3M Dichroic Chill and 3M Dichroic Blaze films give the towering interior window the appearance of stained glass. Throughout the day, magenta tones shift into a yellowish hue, which then turns transparent. With the changing seasons and the sun's positioning in the sky, the shades are a little bit different, leading to a distinctive visual experience.

Chris Lee, the museum's senior exhibit designer, believes the films trigger an important thought process in children as they try to determine how the product works. According to Lee, "[3M Dichroic Film] sparks curiosity because it is such a mystical material. Visitors ask, 'How is this changing colors? I'm looking right at it!' Then they try to figure out the science behind the film. [The design element] parallels what we're trying to do at the museum overall, which is to spark curiosity."

The museum installed 3M Dichroic Films in The Studio to encourage teens to turn windows into works of art, and 3M™ Graphic Film IJ180 on the exhibit's walls to inspire creativity and enhance learning.

## Superior performance through 3M Science.

- Distinctive and Eye-Catching Aesthetics — 3M™ Dichroic Film is an adhesive backed material that is used to create a finish that dynamically changes colors from different angles and lighting conditions.
- Dynamic Effects — Utilizing a proprietary, 3M multi-layer optical film technology, reflected colors are different than the colors in transmission.
- Versatile Applications — Can be used in applications such as shading fins, balustrades, exterior glass, glass partition walls, shower door glass, artistic glass and glass furniture.
- Unsurpassed Capabilities — Film can be printed, cut, patterned, bent, or combined with different glass types of interlayer adhesives.

## Result

In the Sprouts Gallery, 3M Dichroic Films play with the natural light, much like how the museum wants children to play with what surrounds them. "It's confusing in a fun way. It's intriguing. People will stand and look at these films and try to figure out how they work. It's a pleasant riddle or puzzle to figure out how this product is designed," said Lee.

Along with sparking critical thinking, designers say the 3M Glass Finishes product portfolio—specifically 3M Dichroic Films—helped the museum accomplish the integral goal of creating a sense of wonder and beauty. "We wanted to create a space that really spotlighted the children and what they were doing, and that served as an open canvas for their exploration and play," said Kirstin Nielsen, Experience Development Manager. "We wanted to create a stage of sorts, for adults to see what their children are doing, learning and thinking. At the same time, we wanted it to be a space that just felt beautiful and engaging. The film is a huge part of that."

### Case Study Summary

**Challenge:** Identify and implement unique design solutions that create spaces that spark children's learning through play.

**Product Selection:** 3M™ Dichroic Chill, 3M™ Dichroic Blaze, 3M™ Controltac™ Graphic Film IJ180, 3M™ CRYSTAL Glass Finishes

**Benefits:** High-end and unique aesthetic, easy application and versatile applications including shading fins, balustrades, exterior glass and furniture.

3M

**3M Commercial Solutions Division**
3M Center, Building 220-12E-04
St. Paul, MN 55144-1000
3M.com/AMD


75-5100-2665-3