

Transported: Traveling technology exhibition comes home

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By Karen Gadiel

The main exhibit hall at the Sciencenter is often full of children. A toddler standing on a child-sized step is industriously stuffing balls into a pneumatic tube that whisks them off and dumps new balls into an adjacent bin. Two older children are trying to figure out how a hover chair can lift them above the floor as another child skeptically takes a ride. A baby uses a toy dump truck to scoop up another set of balls and move them around the “ball pit.” Even their parents are engaged by the possibilities of simple or more complicated technology used to move objects from one place to another, a human need that seems hard-wired into our consciousness.

“From Here to There” is one of a dozen traveling exhibits built originally at Ithaca’s Sciencenter. Constructed in 2007, this exhibit debuted here, then traveled to museums in 15 different states, mostly in the eastern half of the country, but also going as far west as Texas. Sciencenter publicist Teresa Bell said it is unusual for a small museum like this to have its own exhibit team, but sending traveling exhibits out to other museums earns rental income for the Sciencenter – “and it helps the Sciencenter gain national recognition,” she said. Six years after it was built, the exhibit has returned to delight a new generation of children.

The interactive exhibit offers an up-close, child’s eye-level view of the mechanics of moving people and objects using air, water and ground transportation. For instance, that pneumatic system for moving balls is also useful to move messages in offices and hospitals, bank transactions at drive-up stations – but currently seems less practical for heavier freight, like people. With larger loads, parts of the exhibit are set up to help one consider the ease of lifting with hydraulics, air, or a simple lever. Moving a heavy truck – even a toy – requires more effort on gravel than when the truck’s wheels are fitted to something like a railroad track. It becomes even easier when assisted by magnets, like the “maglev” (magnetic levitation) trains already in use in Japan. Even older kids and adults can expand their horizons here.

One of the oldest transportation systems, moving cargo on water, is also explored, along with the solution – discovered some centuries ago – to the problem of moving freight into higher elevations. A model of how locks work in canals demonstrates the method still in use today for moving laden ships to places they wouldn’t otherwise be able to go.

A Bernoulli blower, a demonstration of a hot-air balloon, a miniature lake with sailboats, and wind blowers you direct yourself, and a bank of 56 fans on a rheostat allow museum guests to explore a mix of technologies. You can design the shape of a wing and see how much heat or air are needed to make things move at the rate or direction needed. The switches are large to accommodate small hands, positioned at levels where they’re easily reached.

Faith Tyler of Groton, visiting with her 15-month-old son Sam, the child who finally had his fill of stuffing balls into the pneumatic tube, said she’s been bringing him here every few weeks since he was nine months old. “It’s awesome for him,” she said. “There’s all sorts of things he can touch and move around. Play centers can be intimidating for him.” She was here meeting a friend with a younger child for a play-date. “This is age appropriate for all kinds of kids,” she added.

“Sam focuses on something new each time. I can see everything makes an impression.”

This is music to the ears of Tim Scott, associate director of the Sciencenter and also director of exhibits. Scott said that when the museum staff is in the process of designing a new exhibit they will build prototypes, then place the new model in the “Discovery Space” or another area of the museum. Comment cards are present so visitors can respond to the exhibit. “Sometimes I’ll just sit and watch families interact with it,” he said. He’s watching to see whether a toddler can use the new apparatus that has just been built, whether parents and children engage with the exhibit and each other. “Are they asking the right questions? Can they use it multiple times without getting the same end result? The key to a successful exhibit is open-ended exploration,” he explained.

For example, the Bernoulli blower part of the current exhibit lets viewers adjust the flow of air and the tilt of the airflow, allowing kids to experiment. “And sometimes we prototype just the graphic to see whether it can be easily understood,” he said. “It has to translate to a wide spectrum of guests, age ranges, nationalities. It has to be easily accessible.”

Depending on the size of the exhibition, it can take three to four years to move from concept to final product. Content has to be researched, funding obtained for the project. Exhibits have to be designed, taking into account standards for accessibility and safety. Mechanical and electrical parts take longer. Fine-tuning a prototype can take upwards of a year. Each exhibit also has a script, including what the designers hope those who behold it will take away from the experience. In this case, the theme is how much is involved in transporting things and people from one place to another. “We’re surrounded by transportation all the time,” Scott said. “But no one ever stops to think how it works.”

Traveling exhibits have another, unseen feature – a manual that tells the host museum how to assemble them. Ideally the sequence of stations is flexible, allowing guests to experience the different parts in almost any order –which also lets the exhibit be adapted to a variety of spaces.

Exhibit materials have to be durable to withstand a lot

of touching and occasional mis-use. They’re crafted of special materials – some are similar to kitchen countertops - in the Sciencenter basement. Things have to be sized for small hands as well as adult ones; all wood parts need to be splinter-free. A lot of sanding and finishing? “Oh yes,” Scott said.

“All kids are natural scientists. We want to allow them to openly explore science in a very safe and fun way as they naturally would do out in the real world. We have the capability to facilitate that outcome. We want them to be inspired to know more about the natural world, we want them to feel comfortable with science, we want them to continuously ask why,” he said. “We tend to lose that as we grow older. We stop asking why, and maybe that’s something we need to work on as a society.”

It’s not only a place for young children. Parents too, can learn here, both from the exhibits and by interacting with their children. A part of the exhibit with working models of different sorts of engines visually explains the differences between a truck’s engine and the one in a lawn-mower. Like the older children who visit here, “We hope after they leave the Sciencenter they’ll dive a little deeper into the content, understanding more of the concepts involved. You learn how the wind moves a sailboat, and then you can go to Cayuga Lake and see it. You’ll understand because you’ve seen it in a scaled-down version. We want them to take what they learn and be empowered to use it more in the natural world,” Scott said.

The museum is open 10 a.m. to 5 p.m., Tuesday through Saturday, and from noon to 5 p.m. on Sundays. Admission is \$6 for ages 3-17; \$8 general admission; \$7 seniors; and teachers are admitted free of charge. “From Here to There” is open into April; other exhibits including “When the Earth Shakes” and “Nano: The Mini-Exhibition” are also on display. After the exhibit closes here, it’s available again for rental in other venues. The Sciencenter also owns a storage and refurbishment facility to keep it between engagements.

And Scott said it’s likely that this exhibit could look very different in another 20 years, requiring updating to maintain its edge. “That’s the beauty of science,” he said. “Technology is just amazing.”