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## When tires retire

*Rubber lives on in play surface safe for wheelchairs, little feet*

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The completed playground surface at Camp Rivendale can cushion a fall but is firm enough to support a wheelchair.

**Keeping used tires out of landfills is one thing. Providing playground access to disabled children is quite another – or was, until a clever innovation brought the two causes together.**

“If you didn’t know anything about safety, what would you want to fall on?” asks Elaine Sherman, a longtime advocate of accessible playgrounds for disabled children.

“It’s common sense,” she says. “You’d want to fall on rubber.”

For the last 20 years Sherman, a resident of North Aurora, Ill., has been involved with the advancement of accessible playgrounds. As a PTA president in Oak Park, Ill., in 1985, Sherman helped to raise \$150,000 for a piece of special playground equipment for disabled children.

The school’s playground became one of the first in the country to be considered an accessible playground and was featured on CNN.

Her influence now reaches to Oregon: Underneath the thick, semiporous vinyl matting at Tualatin Hills Park & Recreation District’s Camp Rivendale playground in Beaverton lie bags filled with recycled car tires.

The 5,100-square-foot play area uses about 15 tons of cleaned and chopped tires – roughly one automobile tire per square foot – to create a safe, accessible and resilient play surface.

“I love watching people get on it, walk on it, and take their shoes off all of a sudden and bounce on it,” says Jim Mac Donald, head gardener at the district’s Jenkins Estate, where Camp Rivendale is located. “One woman even likes to do her aerobics on it in the mornings.”

The playground, which is at the site of the only summerlong day camp for children and teens with disabilities in the Portland metro area, is the first in Oregon and in the Northwest to use the playground surface, called a SMARTE surface.

### Wood chips hard to roll on

The product of a research project headed by Sherman and funded by a 2003 State of Illinois Used Tire Recovery Program grant, SMARTE is touted as a cost-effective and environmentally friendly surfacing that is opening new doors to children with disabilities.

SMARTE uses chopped car tires encased in permeable fabric bags that are positioned in the ground around play structures and then covered with vinyl matting. The matting creates a firm, stable and slip-resistant surface that is accessible by people in wheelchairs.

Sherman notes that SMARTE is slowly developing a following among park districts in Chicago and Cincinnati. Officials in New York City are considering the new surfacing for their playgrounds.

“It’s really a different surface than anything you’ll ever step on,” says Susan Bender Phelps, development coordinator for the Tualatin Hills Park Foundation. The foundation helped to raise funds for the \$166,800 Camp Rivendale playground project, which was completed in June.

Public playgrounds are required to install play surfaces that prevent injuries caused by falls. The cheapest form of safe surfacing is wood chips, which were used around the Camp Rivendale play structures until the SMARTE surfacing was installed.

While cheap, wood chips require maintenance. The chips also make it impossible for disabled children or adults in wheelchairs to be able to enjoy the playground structures.

“We wanted to make it so even with mobility issues you can reach whatever your ability allows you to reach,” Bender Phelps says.

### **Poured surface was pricier**

Phelps first learned of SMARTE through the district’s maintenance and construction department’s involvement with the National Recreation and Park Association.

The district did consider a poured-in-place surfacing, which is a mixture of rubber and a binding chemical that is poured into place and left to harden. Phelps said the original specs included estimates for poured-in-place made of ground-up tennis shoes.

But for Bender Phelps, the \$96,000 price tag for that surface was eye-popping. And as Park Improvement Supervisor Jerry Burgess pointed out, a lot of poured-in-place playgrounds are failing across the country because of wear and tear or unstable binder material.

Still, park district officials knew very little about SMARTE when Bender Phelps first approached the district to consider the surfacing, which carried a cheaper price tag of \$52,000. After some review of the product, Tualatin Hills Park & Recreation officials approved the SMARTE surface.

“It is a very new product, and I have to give Susan the credit for trying something new and different,” Sherman says.

### **Rubber can be hard to find**

A few days after Camp Rivendale ended its children’s camp in August, Bender Phelps walked across the blue and beige SMARTE surface at the playground, each step producing a subtle bounce and sinking motion. The afternoon sun was out and helped to dry the traces of rain that had fallen hours before.

Bender Phelps plopped down on the surface into a seated position, her legs folded in front of her. She rubbed the surface to show that the mat was completely dry.

SMARTE, Bender Phelps says, has excellent drainage. The surface does not create pockets or divots where water can collect into puddles. Instead rain passes right through the mat to the ground.

SMARTE does have its drawbacks. The installation of the product is labor-intensive. Sherman traveled from Illinois to supervise the Camp Rivendale installation, as park district crews learned the correct methods for laying down the sofa cushion-size bags, covering them with loose ground-up rubber and then installing the vinyl mat.

The installation for a 5,100-square-foot surface should have taken about one week to complete. But weather and the need for more glue added another week.

Also, finding a supplier of cleaned and ground-up tires was a challenge. Park district officials ultimately found a supplier in the Seattle area that was able to provide the necessary 15 tons of recycled car tires.

Sherman admits that finding suppliers for the rubber could be challenging should more park districts across the country want to install the surface. However, Burgess notes that the park district has received several calls inquiring about the recycled tires, which may indicate an interest from local businesses in helping with future supplies.

“If more tire agencies got involved, it could cut the cost down even more for SMARTE,” Burgess says.

Because SMARTE is so new, no one really knows how long it will last. Burgess estimates that the surface could last for six to seven years with occasional fixes and repairs made to the vinyl mat.

But as the inventor of SMARTE and as the one responsible for sewing every bag used in the first five playground test sites in Illinois, Sherman is pleased with her product thus far.

“People are always looking for the safest surface,” she says, “Using ground-up tires is just a nice plus. It’s the most resilient material, and we were just looking at ways to put tires to good use.”

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Elaine Sherman, who pioneered a new playground surface, details the acronym behind the product, SMARTE:

- S — Safe slip-resistant mat
- M — Mats covering shredded rubber bag system
- A — Accessible surface
- R — Reduces serious fall injuries
- T — Train park staff and can easily be installed
- E — Environmentally friendly