



Crushed Toilets Pave The Way In Bellingham

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Workers look at the results of crushed old toilets -- the crumbled porcelain was then turned into concrete, or "porticrete." credit: Freeman Anthony, Bellingham Public Works



▪ This sustainable trail project in Bellingham, Wash. earned the nation's first Greenroads certification. credit: Freeman Anthony, Bellingham Public Works



400 recycled toilets were crushed and used in Bellingham's Greenroad project. credit: Freeman Anthony, Bellingham Public Works

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Okay, it's not actually a road — it's a multi-use trail in Bellingham, Wash.

What makes it a Greenroad isn't the traffic it bears but the stuff it's made of: 400 recycled toilets.

This porcelain-paved path is the nation's first project to be certified a Greenroad under [an independent rating system](#) originally developed at the University of Washington.

Freeman Anthony says it all started with a lucky phone call.

Anthony works for the Bellingham Public Works Department. He's in charge of the [Meador Kansas Ellis Trail Project](#), a corridor improvement project completes and interurban trail through residential, commercial and industrial areas in Bellingham.

The project was half-completed when Anthony got a call from the local housing authority. It was upgrading 400 housing units.

“They called me up and said, ‘Hey, can you do anything with 400 toilets?’ And I said, ‘Well, it’s conceivable,’” Anthony recalls.

He then called a local concrete supplier who told him throwing the toilets in the concrete crusher was worth a shot.

So they crushed a few toilets and decided the crumbled porcelain had potential. And then they crushed the rest.

Greenroad Revolution

The Bellingham project is first to receive the Greenroads’ stamp of approval. It’s been likened to the LEED designation for green buildings. There are currently [14 other projects](#) across the nation being considered by the Greenroads team. The Northwest’s ten projects are all in Washington.

“They took a shovelful off the conveyor belt and said, ‘Oh, this is going to be perfect,’” Anthony says.

It turns out that hard, glass-like porcelain makes a strong aggregate. And soon 5 tons of toilet became four truckloads of concrete.

“When it’s mixed in at 20 percent,” Anthony says. “It acts just like regular concrete.”

View [Greenroads projects in WA](#) in a larger map

But according to Anthony, this formula for what he now calls “[poticrete](#)” isn’t the most interesting part of this project.

“The toilets were just one small part of the project,” he says. “We didn’t do your standard hohum road. We tried to make a better road and more sustainable road.”

The retrofit project is now chock-full of sustainable elements — low-energy LED street lighting, pedestrian and bike-friendly amenities, porous pavement and bioswales that filter stormwater runoff.

Greenroads Foundation co-founder Steve Muench says it took more than broken-down toilets for Bellingham’s path to win the non-profit’s certification. Part of what makes the project stand out

is that on average about 35 percent of all the project's concrete is made from recycled concrete, says Muench, a civil engineering professor at the University of Washington

More recycled concrete means less virgin aggregate: high-quality sand, gravel and crushed stone extracted from quarries or other mining sites.

"It's impressive," Muench says. "The fact that when concrete reaches the end of its life, you can turn it back into concrete, that's the ultimate example of recycling."

For now Anthony wants to see how potcrete holds up under foot and bicycle traffic. But he'd love to see the day when roads really are paved with porcelain, and more.

"We'd love to get this idea to spread," he says. "Hopefully one day we can put Fiestaware and old coffee cups in there too. Why not use whatever you have lying around as filler?"

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