

Slashdot is powered by your submissions, so send in your scoop

Nickname: Password: Public Terminal Log In Forgot your password?

Sign in with Google Facebook Twitter LinkedIn

Gates Foundation Spent \$200 Million Funding Toilet Research

Posted by BeauHD on Wednesday November 07, 2018 @07:45PM from the serious-business dept. According to Bloomberg, the Bill & Melinda Gates Foundation "spent \$200 million over seven years funding sanitation research, showcased some 20 novel toilet and sludge-processing designs that eliminate harmful pathogens and convert bodily waste into clean water and fertilizer."

The reinvented toilet market, which has attracted companies including Japan's LIXIL Group, could generate \$6 billion a year worldwide by 2030, according to Gates. The initial demand for the reinvented toilet will be in places like schools, apartment buildings, and community bathroom facilities.

- A Robot Scientist Will Dream Up New Materials To Advance Computing
Fewer Than Half of Young Americans Are Positive About Capitalism
Mass Shooting Reported at Madden Video Game Tournament in Florida
Linus Torvalds Reflects On How He's Been Hostile To Linux Community Members Over the Years, Issues Apology, and Announces He Will Be Taking Some Time Off
San Francisco Officials Are Planning To Ban Corporate Cafeterias, Force Tech Workers To Eat Out At Local Restaurants
California Has a New Law: No More All-Male Boards
Free Music Archive Is Shutting Down

Gates Foundation Spent \$200 Million Funding Toilet Research 21 More | Reply Login

Post Load All Comments

8 Comments Filter: Score: Insightful Informative Interesting Funny

The Fine Print: The following comments are owned by whoever posted them. We are not responsible for them in any way.

Re: (Score:1) by Anonymous Coward What does "septic tank" like it means? You don't even have to RTFA, just read the summary. Many places lack appropriate sewage treatment infrastructure, if they have it at all, harming human and environmental health when expo showcased alternative sewage and sanitation technologies, including on-site treatment.

Re: (Score:1) by Anonymous Coward Septic tanks require water, ground that perks properly, low population density, and fairly expensive periodic maintenance. Your idea is stupid and will not work.

Re: (Score:2) by 110010001000 ( 697113 ) Rural Americans have no concept of the real world. They think they are "independent" yet rely on the infrastructure provided by a wealthy country.

Re: Advances??? (Score:1) by Anonymous Coward City dwellers have no concept about the real world. Without rural areas you would have no food and die

Re: Advances??? (Score:4, Informative) by hey! ( 33014 ) on Wednesday November 07, 2018 @10:17PM (#57609884) Homepage Journal Rural Americans have no concept of the real world. City dwellers have no concept about the real world. It turns out, you're both right.

Re: (Score:2) by DigiShaman ( 671371 ) I'm not upset, I'm stunned and frightened of your ignorance! Please tell me you're trolling. I'll freely admit you've got me if you admit it. If not, you have NO CLUE!!! Rural can live (and have lived) without cities. But cities can never exist without agriculture and industrial production --> which pretty much exclusively requires rural landmass. Any such actives done in the city would be limited and would not scale to meet the demand of a densely populated metropolitan area.

Re: (Score:2) by Aighearach ( 97333 ) No, dumbass, the rural lifestyle in the US can't exist without the cities. Nobody said that the land can't exist, or wouldn't still have a few people on it. But they wouldn't have the same lifestyle. And they'd be using pit toilets for sure.

Re: (Score:3) by dunkelfalke ( 91624 ) What is your point? Peasant life was so shitty they tried to flee into cities at the first opportunity and in many countries they still try. Without agricultural machinery and chemicals farming seriously sucks, but either is impossible without cities. Rural landmass my arse.

Re: (Score:2) by Harlequin80 ( 1671040 ) The outflow of a septic tank is still highly contaminated. Drinking water that is contaminated by that outflow would be hazardous to drink.

Re: (Score:1) by thexfile ( 3221535 ) Not to mention floods spread the love.

Re: (Score:3) by LifesABeach ( 234436 ) And in a totally unrelated news story, "China's Brightest Children Are Being Recruited To Develop AI 'Killer Bots' "

Never skimp on anything between you and the ground (Score:5, Insightful) by ToTheStars ( 4807725 ) on Wednesday November 07, 2018 @07:57PM (#57609318) I was once advised by a mentor to 'never skimp on anything that gets between you and the ground'. He was talking about tires, shoes, and beds, but toilets certainly qualify. Every human poops, and many of the worst diseases still extant (cholera and friends) thrive in conditions of poor sanitation. So don't make fun of this research - respect the throne! Invest in it!

Re: Never skimp on anything between you and the gr (Score:2) by LordWabbit2 ( 2440804 ) Agreed, our rivers get dumped with half treated sewerage all the time, kills all the fish and I'm sure it causes other issues as well, if the toilet can take over the job of the treatment plants you don't have to build all the infrastructure that is needed currently. This is an awesome thing to invest in. My wife dragged me to a humane course, and I am glad she did, current methods of turning human shit into fertilizer is time consuming and you need a lot of space to do it. Septic tanks are a pain, mos

Re: Respect it because the alternative is bad (Score:4, Interesting) by geekmux ( 1040042 ) on Thursday November 08, 2018 @07:57AM (#57611378) Yeah, so it turns out pretty much every noncommercial toilet in America is a joke. The seals fail. They just fail. The huge amount of waste that arises from \*having toilets with sucky designs in almost every home in the country\* is insane. The fix is pretty simple: whenever a toilet shows up in a landfill or dumpster, bill the manufacturer. We don't do that, so every producer has an incentive to make toilets crappy enough that they fail within a few years. Uh, where exactly are you getting your data that confirms we're throwing away toilets every few years? My last house still had the avocado green and harvest gold toilets installed from the 70's (no, I'm not joking), and my current house still has the original hardware that's almost 20 years old. Yes, internal hardware like the flapper breaks down over time (more likely due to the chlorinated water attacking the rubber material), but you don't rip a toilet out of a house because the guts fail. Every toilet I've replaced has been due to something other than breakage (color, height, shape, water capacity, etc.) Much like consumer electronics, fashion has put more hardware into landfills than function has.

Re: (Score:2) by aitiKin ( 909209 ) You're absolutely correct. I'm about to replace all of mine. Bought the house 5.5 years ago, but I'm quite certain the toilets were the ones installed in '78 when the house was built. I'm replacing them in small part because one of the flappers is not sealing and the others are getting close to that point, but in large part because they use about 10 gallons (yes, I'm exaggerating, but it's still way more than necessary) every time they flush. If I wanted to, I could keep them running for another 30 year

Re: (Score:2) by G00F ( 241765 ) Reducing the amount of water used on toilet like that can make the toilet not operate correctly. Usually clog more often, as they are designed to create a siphon when a larger amount of water raises the back side water line. And then to continue the siphon long enough to get everything up and over. If that siphon gets things up and over without enough water to push it down you get a clog. With the older models that use 8+ gallons a single brick wont affect much, but adding multiple, or doing it to one using

Re: (Score:3) by AmiMojo ( 196126 ) I wish the west would invest more in toilets. 99.9% of them here are just basic flush models, not even heated seats. Why the hell are we still using toilet paper, it's such a waste of resources and doesn't even clean that well. If you got faeces on any other part of your body you wouldn't wipe it off with a paper towel and call it job done.

Re: (Score:2) by Venona2018 ( 5425598 ) Is that too much to ask? Just send the bill to Salesforce and Twitter. San Francisco voters approved Measure C yesterday to tax Salesforce, Twitter, and every other business with more than \$50 million in revenue in order to fund solutions to the homeless problem. The tax is .5% of gross revenue. The measure was promoted by the CEO of Salesforce but opposed by the CEO of Twitter.

Good Experience (Score:4, Funny) by Roger W Moore ( 538166 ) on Wednesday November 07, 2018 @08:05PM (#57609350) Journal I see Bill is putting his years of experience in developing shit products to good use.

The three seashells (Score:2) by RogueWarrior65 ( 678876 ) Bill doesn't know how to use them. I can see how that would be confusing.

windows product line (Score:1) by Anonymous Coward and microsoft can probably leverage these findings for windows development.

**Not where I live. (Score:2)**

by [Nutria \( 679911 \)](#)

The initial demand for the reinvented toilet will be in places like **schools**, apartment buildings, and community bathroom facilities.

In the public schools, they'd be broken with a week.

BTW, what's a community bathroom facility? I know what each word means, but can't put them all together. Is it the shared bathroom like in locker rooms and dormitories?

[3 hidden comments](#)

**Re: (Score:2)**

by [DontBeAMoran \( 4843879 \)](#)

The weirdest thing I've ever seen in a UK phone box was something that looked like a spaceship but the even weirder part - and I know it sounds crazy - was that the inside was bigger than the outside.

**Re: (Score:1)**

by [Crash Dummy Redux \( 5616896 \)](#)

A community bathroom facility is the gym restroom when the water heater in your apartment building goes out for an extended period of time.

**Re: (Score:3)**

by [Harlequin80 \( 1671040 \)](#)

Think shanty town with no sewer or sanitation system.

Community bathroom facilities provide sanitation to these areas significantly lowering risks of outbreaks.

**Re: (Score:1)**

by [forty-2 \( 145915 \)](#)

In New York City, A Community Bathroom Facility is a Starbucks.

It's an unspoken social contract - you get to charge \$4 for burnt coffee, we get to use your bathrooms (no purchase necessary).

**My US city could use some help downtown... (Score:2, Insightful)**

by [swell \( 195815 \)](#)

We have a few thousand homeless people with little or no access to a toilet, much less a shower. Local businesses complain about excreta at their doors, but then note that if there was a nearby public toilet it would just attract more homeless people. We are currently recovering from an outbreak of hepatitis A as a result of sanitation problems among the homeless and those nearby.

My city receives tourists from all over the world and it's sad that we're looking like a 3rd world country.

[1 hidden comment](#)

**Re: (Score:1)**

by [geek \( 5680 \)](#)

Lowest unemployment in decades. Tell the useless fucks to get jobs and stop shitting everywhere. It's not brain surgery.

[2 hidden comments](#)

**Re: My US city could use some help downtown... (Score:1)**

by Anonymous Coward

Wow, another comment on a post about the homeless with zero empathy or self-awareness.

Do you really think the people publically defecating and sleeping outside are choosing their lifestyle out of laziness, instead of debilitating mental issues and a lack of resources?

Maybe if more people had empathy the problem could be addressed but too many people like you with the "fuck you, got mine" attitude.

[1 hidden comment](#)

**Re: (Score:1)**

by [DNS-and-BIND \( 461968 \)](#)

The real problem is that there are no mental asylums in California. The ACLU sued the state back in the 70s to have them shut down on the grounds that they were inhumane. Now they have no place to go...but they're free, just like the ACLU wanted.

And frankly there are a proportion of homeless who are not mentally ill but just have extreme views on personal freedom and are willing to make sacrifices you consider bizarre. None of them are drowning in debt or spend their lives staring World of Warcraft, ev

**Re: (Score:2)**

by [DontBeAMoran \( 4843879 \)](#)

None of them are drowning in debt or spend their lives staring World of Warcraft, ever think of that?

Oh shit, you just reminded me I don't have enough for next month's rent **and** I owe something like 240K gold to the guild master.

**Re: (Score:2)**

by [DNS-and-BIND \( 461968 \)](#)

If only the ACLU hadn't sued to shut down the mental asylums on the grounds that it was inhumane to imprison people who had committed no crime, California wouldn't have this problem. Sad!

**Re: (Score:2)**

by [sysrammer \( 446839 \)](#)

What? Reagan shut them down.

**Re: (Score:1)**

by [DNS-and-BIND \( 461968 \)](#)

Nope! That's a lie. The ACLU sued to have them shut down, and Reagan merely closed the doors on the now-empty facilities. Of course, that created the modern homeless problem, and the ACLU and its media friends pinned in on Reagan.

You see, the ACLU thought it was morally wrong to imprison people who had committed no crime. Which is what mental asylums did. As long as they could lift spoon to mouth to feed themselves, they were deemed fit to be released. They sued and won.

**Re:My US city could use some help downtown... (Score:4, Insightful)**

by [AHuxley \( 892839 \)](#) on Thursday November 08, 2018 @12:49AM ([#57610382](#)) [Journal](#)

Look to the states that enforce laws and rules about tent cities, RV parking and trash in the street.

They don't have such problems. Their cities stay clean and attract investment.

Its a city police politics problem. Find out why the city police do not to enforce laws. Parking laws. Trash laws. Camping laws. Waste laws.

[Reply to This](#) [Parent](#) [Share](#)

[twitter facebook linkedin](#)

[Flag as Inappropriate](#)

**Re: (Score:3)**

by [mjwx \( 966435 \)](#)

Look to the states that enforce laws and rules about tent cities, RV parking and trash in the street.

If you have "tent cities" then you need to admit you've got some seriously fucked up policies if you're a developed nation.

They don't have such problems. Their cities stay clean and attract investment.

Its a city police politics problem. Find out why the city police do not to enforce laws. Parking laws. Trash laws. Camping laws. Waste laws.

Because there are two ways to police, with the good will of the people or with the fear of the people.

The latter is commonly called a police state where citizens fear breaking laws and talking to the police because punishments are severe and standards of evidence are low or non existent.

The former is how we police in developed nations where the spirit of the law is considered abo

**It hurts (Score:3, Funny)**

by [Tablizer \( 95088 \)](#) on Wednesday November 07, 2018 @08:35PM ([#57609462](#)) [Journal](#)

Must ... resist ... Windows ... quality ... jokes

[Reply to This](#) [Share](#)

[twitter facebook linkedin](#)

[Flag as Inappropriate](#)

[3 hidden comments](#)

**Re: (Score:2)**

by [DontBeAMoran \( 4843879 \)](#)

He's rich, he probably uses a Mac these days.

**Shit is a real problem (Score:5, Insightful)**

by [mveloso \( 325617 \)](#) on Wednesday November 07, 2018 @09:41PM ([#57609734](#))

It's interesting to see this sort of research. Getting rid of people's shit is actually quite difficult to do in an efficient and sanitary way. It's also a difficult UX problem, because levels of care in excreting are substantially different across cultures.

For example, in poor areas the idea of sitting on a toilet seat is a completely alien idea. People either squat over holes in the ground or stand on the toilet bowl and squat. People will occasionally shit or pee all over the toilet, causing problems. Getting the shit/pee out of the bowl along with toilet paper etc is difficult. Then there's the odors/smell/leftover shit problem.

Plus toilets need cleaning...lots of cleaning. In fact, they're cleaned more often than any other area, generally speaking. And they're still filthy.

We haven't even gotten to the "moving the shit out of the toilet" part at that point.

Then of course there's the "what do you do with the combined shit and piss of 50,000 people."

So kudos for the Gates Foundation for doing something creative with their money. These sort of structural problems get worse as time goes on. People don't understand the sheer amounts of infrastructure it takes to deal with shit like this. Here's an example:

In NYC, there are about 3 million households. Each household has 2 toilets. Each toilet requires a holding tank of 6 or 13 gallons. So at any given time there are about 18-39 million gallons of water hanging around that had to be delivered to every household. Water pressure is generally 80psi, which means you need 80psi to 3m point locations across 302 square miles (784 sq km). That pressure doesn't just fill toilets, it supplies showers, sinks, washing machines, etc.

And that's just one municipal water supply. The sewer system is completely independent.

It's surprising, to be honest, that universities or governments aren't looking at these sort of issues. I mean, there are all kinds of efficiencies that are possible. For example, why not use the water pipes for AC heat transfer?

[Reply to This](#) [Share](#)

[twitter facebook linkedin](#)

[Flag as Inappropriate](#)

**Re:Shit is a real problem (Score:5, Insightful)**

by [Strider \( 39683 \)](#) on Wednesday November 07, 2018 @09:55PM ([#57609796](#))

Having been peripherally associated with some foreign development projects, it's astounding how many people here completely don't get that the real problem in many places isn't getting clean water (though that's a sexy and easy(er) problem to solve, but rather what to do with the waste at the other end of the problem.

I've supported a couple of charities that do their hardest to build safe, culturally appropriate latrines/privies. These are just as, if not more, critical than drilling wells etc...

[Reply to This](#) [Parent](#) [Share](#)

[twitter facebook linkedin](#)

[Flag as Inappropriate](#)

[1 hidden comment](#)

**Re: (Score:3)**

by [PPH \( 736903 \)](#)

Why bother when there's a perfectly good street right there?

**Re: Shit is a real problem (Score:2)**

by [LordWabbit2 \( 2440804 \)](#)

That's a shit comment and it shows that you are a racist asshole. A shit hole is a temporary solution to a permanent problem. A badly run water treatment plant will discharge toxic water into the water supply. We have just been through a couple years of drought, the dams got so low there were fears of it running out completely, also the water quality dropped significantly because they were using the lowest part of the dam water, we had to boil all the water we took from the tap, just to be safe. We also

**Re: (Score:2)**

by [Harlequin80 \( 1671040 \)](#)

Agreed, often solving the waste problem partially solves the water supply problem as well.

**Re: (Score:2)**

by [drinkypoo \( 153816 \)](#)

Having been peripherally associated with some foreign development projects, it's astounding how many people here completely don't get that the real problem in many places isn't getting clean water (though that's a sexy and easy(er) problem to solve, but rather what to do with the waste at the other end of the problem.

How is that a problem? Build bason toilet. Throw kitchen scraps into toilet when you shit. Every week or so, turn the crank to stir the shit. Within one year, remove nice, clean composted soil from the door at the back of the vault and use it anywhere you need soil.

**Re: Shit is a real problem (Score:2)**

by [LordWabbit2 \( 2440804 \)](#)

Depends on how you compost it, the original posters comment about having a "little back door" obviously doesn't realize how much shit he produces, in the toilet, or every time he posts a comment.

**Re: (Score:1)**

by [AndrewFlagg \( 753349 \)](#)

"si hoc legere nimum eruditionis habes..." lovely.. first time for me to see this phrase. i feel like Socrates all of a sudden. ;-) i digress. Amen

**Re: (Score:2)**

by [Harlequin80 \( 1671040 \)](#)

Governments are. I work in this industry and plant & network optimisation for waste management is a major place of investment. That said I live in a first world developed country and the challenges are different. It's pump stations and treatment capacity rather than getting any kind of system in place. The last 20 years has also seen the move towards megaplants and the decommissioning of smaller localised plants. The transfer costs of moving the raw effluent further are far out weighed by the efficient

**Re: (Score:2)**

by [PPH \( 736903 \)](#)

The larger sites are both economically and environmentally better.

Yeah, right. Until a pump quits or a valve gets stuck open. Then it's thousands of gallons of sewage dumped into the lake. Meanwhile, all us people with septic tanks continue on with no problems.

The nearby city wants to extend sewer and water to our neighborhood. But for the people out here, that just means a \$50,000 property assessment for the improvements plus the privilege of paying about \$100 per month for something we get for free. And the chance of being able to watch our shit float by the dock occas

**Re: (Score:2)**

by [Harlequin80 \( 1671040 \)](#)

If a low level system failure leads to raw effluent being released into the waterways your systems are horrifically designed. All the legacy systems around here that had that failure mode have been replaced. One project example is the BMP Alliance which was built to handle population growth and to remove the "failure to environment" state. Septic also isn't without its problems. It dramatically increases the nutrient content in nearby waterways which causes all kinds of imbalances. This also assumes the

**Re: (Score:2)**

by [ediron2 \( 246908 \)](#)

>It's surprising, to be honest, that universities or governments aren't looking at these sort of issues.

s/surprising, to be honest,/false to claim/g # Claim is offered without evidence, and breathtakingly wrong / stupid. Quick googling: there are 50k water engineers in the AWWA alone. Thousands more as civil engineers, public health practitioners, etc. They're looking at process effwicy, clean and waste water, water treatment,

problematic wastewater elements like hazmat or cellulose waste, testing,

**Our astronauts can use repressed water (Score:1)**

by [pgmrldm \( 1642279 \)](#)

If wastewater(cleaning, toilet) can already be processed to be consumable by our astronauts. Why did the gates have to invent/invest to find a new way of doing it.

Is their way that much more economical????

**Re: (Score:3)**

by [Harlequin80 \( 1671040 \)](#)

Reverse Osmosis, the method used on the ISS, is high energy, & highly complex. It is perfect for that situation though and is the method that is used in large scale water treatment plants in the developed world.  
For places with limited technical skills, unreliable power and limited supporting infrastructure it is not a good fit.

**Re: (Score:1)**

by [pgmrdlm \( 1642279 \)](#)

Thank you for the information.

**Africa (Score:1)**

by [QuadEddie \( 459328 \)](#)

We don't want this Bill. Africa is already set for a population explosion over the next 30 years. If you solve the infant deaths, that means there's more people wanting to leave that shithole and where are they going to go but migrate into Europe. Leave the shithole alone and focus on domestic issues instead of creating international crises in the name of naive philanthropy.

[1 hidden comment](#)

**Re: (Score:2)**

by [Locke2005 \( 849178 \)](#)

Right, because women NEVER get pregnant from rape or incest!

**Re: (Score:2)**

by [Harinezumi \( 603874 \)](#)

A clump of cells is not an infant and represents a trivial investment of resources on society's and the mother's part. Definitions are important, otherwise you could easily pay off the national debt if you defined "paying off" as "sucking" and "the national debt" as "my dick".

**no shit Sherlock (Score:1)**

by [AndrewFlagg \( 753349 \)](#)

ironically, the catch phrase "no shit Sherlock" comes to mind for Mr. Gates. The more people, the more poop. The more poop, the more pooper scoopers. a beautiful cycle like water.. just keep it clean and let it flow. reminds me of an SNL episode called Colon Blow. ;-) good one for a Throwback Thursday. Amen.

**thats kind of crappy (Score:1)**

by [CRidpath \( 817565 \)](#)

What a shitty way to spend money

**You know the old saying... (Score:2)**

by [Locke2005 \( 849178 \)](#)

"It's a shitty job, but \_somebody\_ has to do it!"

I'm currently working on software testing... I don't see any difference between that and toilet research! It's all just

dealing with the shit other people have left behind.

**Related Links Top of the: day, week, month.**

- 1445 comments [Fewer Than Half of Young Americans Are Positive About Capitalism](#)
- 1293 comments [Mass Shooting Reported at Madden Video Game Tournament in Florida](#)
- 985 comments [Linus Torvalds Reflects On How He's Been Hostile To Linux Community Members Over the Years, Issues Apology, and Announces He Will Be Taking Some Time Off](#)
- 825 comments [San Francisco Officials Are Planning To Ban Corporate Cafeterias, Force Tech Workers To Eat Out At Local Restaurants](#)
- 810 comments [California Has a New Law: No More All-Male Boards](#)

[next](#)



[Free Music Archive Is Shutting Down](#)

67 comments

[previous](#)



[A Robot Scientist Will Dream Up New Materials To Advance Computing](#)

41 comments

[Slashdot](#)

[Post](#)

[Get 21 More Comments](#)

100 of 121 loaded

[Submit Story](#)

To stay youthful, stay useful.

[FAQ](#)

[Story Archive](#)

[Hall of Fame](#)

[Advertising](#)

[Terms](#)

[Privacy Statement](#)

[Privacy Choices](#)

[Opt-out Choices](#)

[About](#)

[Feedback](#)

[Mobile View](#)

[Blog](#)

Trademarks property of their respective owners. Comments owned by the poster. Copyright © 2018 SlashdotMedia. All Rights Reserved.

[Close](#)

[Slashdot](#)

Working...