

Underground rainwater storage in an IBC with pumped supply

by [ed_sturdy](#) on October 8, 2008

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intro: Underground rainwater storage in an IBC with pumped supply

Budget pumped rainwater storage. Commercial rainwater storage can be several thousand pounds. To save money I wondered if you could bury an IBC and it turns out you can ! Here's a complete pumped rain water system for about GBP 100.

See more inside.....



step 1: Dig a big hole

Dig a very big hole. A standard IBC can be bought for GBP 40-50 and is 1mx1mx1.2m. It took about 3 evenings after work to dig the hole. We're lucky and have nice light soil.



step 2: Put your IBC in the hole and connect

Drop that beast in there. I put a bottle gully at the base of the downpipe. I used a holesaw to cut a 100mm hole in the side of the IBC for the water in. For the overflow I used 40mm pipe which I drilled lots of holes in a ran it to a soakaway.



step 3: Make it nice again.

I first backfilled with earth. Next I used weldmesh to cover the IBC and fitted a inspection cover (From Drain Center) over the screw cap on the top. Then I poured with concrete.

Not too bad looking, if I say so myself.



step 4: Connect the pump

Found an excellent pump on ebay for GBP 50 from a German seller called "werkzeuge-online"
It's a cheap Chinese knock off but works fine. It's got an accumulator and a pressure switch which holds the water at 2 bar.

Mounted in the garage. Ran the suction hose through the wall into the IBC. Ran 15mm pipe to the garden tap, which now runs pure rainwater !

I've been using the system for Aug and Sept and it's been perfect. The tank has been nearly full the whole time.



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Comments

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Nate.hotdog says:

Before you dig such a big hole its probably a good idea to have your underground utilities located and marked.

Mar 20, 2009. 7:41 AM [REPLY](#)



ellislake says:

i built this system around 12 months ago and it works great. the ibc can be found on ebay for £40-£50 ending price. need to go to wicks or b&q and get a rainwater diverted for the guttering pipe for £4.99.usually only find black ones all the white ones seemed to be snapped up all the time.a really good thing to do it buy a manually powered pump to pump water out.but thats only good if you want it to water the garden using a watering can. if you want to use it for a garden tap then use a solar panel and a small pump and a car battery about 80 amps should do it.or you could use the sdoalr power and the manual pump etc.i didnt think of using the water to put it through the garden tap,good one but it wouldnt work for me as i only got one tap outside and would use that to wash my car. nice one for posting this instructable though. if anyone has any IBC CONTACINERA FOR SALE OR FREEBIES email me at ellislake@hotmail.co.uk.. cheers

Dec 30, 2008. 12:56 PM [REPLY](#)



nate121 says:

umm how much is that in u.s.a dollers any one?

Oct 25, 2008. 5:22 PM [REPLY](#)



whitefang says:
See <http://www.xe.com/> for converting currencies.

Nov 10, 2008. 9:23 PM [REPLY](#)



yeagerxp says:

Oct 13, 2008. 3:52 AM [REPLY](#)

Good for you ed_sturdy
Codes smodes, every where signs, rules , signs, EPA this, governments are not doing enough for the enviroment, we try to do something using common sense. I live in the city I use solar panels to generate electricity to power my lights, low power devices, in the pursuit of my hobby, mains power is used for bigger tools. This year I spent quite a bit of money installing drip irrigation for my vegetables. I plan to add a couple micro_turbines in my backyard, and i am hoping the city dogs come sniffing around.
It is like we no longer control our destiny



Calorie says:

Oct 10, 2008. 3:19 AM [REPLY](#)

Is this allowable under UK building codes? The storage tank is directly next to the foundation of the building.



Mr. Rig It says:

Oct 8, 2008. 1:31 PM [REPLY](#)

Nice job. I had this same idea a few years ago but never put it into action. I am very happy to see someone has finally done it. The prject came out looking very nice.



netbuddy says:

Oct 9, 2008. 8:53 AM [REPLY](#)

A whole story in one summer ...

1976

Unless you lived through it, you wont know what water conservation is all about...



Mr. Rig It says:

Oct 9, 2008. 10:06 AM [REPLY](#)

I was around in 1976 but not in the UK.



netbuddy says:

Oct 10, 2008. 12:17 AM [REPLY](#)

Well I can tell you like many who did live through it that water conservation is a lesson that the population needs to experience again.

We need another summer of 76 and people may sit up and take note. In the past couple of years we have come close but not near enough to it, sure we have had hot summers recently but not like in 76.



ve2vfd says:

Oct 8, 2008. 12:09 PM [REPLY](#)

Very nice setup!!!

Just out of curiosity, have you checked to see if you're not spending more in electricity to run the pump than you would spend on water?

Either ways this system is great where there are lawn watering restrictions!



netbuddy says:

Oct 9, 2008. 7:28 AM [REPLY](#)

The point I think is that the IBC is approx 1m sq. which means that 1 sq meter is 1,000 liters of liquid which @ 0.08p a liter (average [based on internet searches]) which is a saving of £80 on every 1,000 liters of water.

If you were metered for this then it would certainly be a saving. If anyone is planning on trying this then I would say that for winter periods, it would serve best if the storage container was at least 2 feet below the ground. You run a real risk of the container splitting if ice forms in the top layer, this would lead to serious issues with undermining the foundations if close to a house or could become a source / cause of rising damp.



ed_sturdy says:

Oct 9, 2008. 8:12 AM [REPLY](#)

I think that should be 80 pence / 1000 liters. (Not taking into account standing and sewerage charges)



netbuddy says:

Oct 9, 2008. 11:24 PM [REPLY](#)

Says it in here that the average price is 0.008p a liter.
<http://www.arenanetwork.org/Water/Default.aspx>

This is one of many sites that quote costs, they vary from £50 to £90 a metric ton.



netbuddy says:

Oct 9, 2008. 7:10 AM [REPLY](#)

Nice Idea.

One thing I have to ask is this... You stated "Ran 15mm pipe to the garden tap, which now runs pure rainwater !"

Did the pipe your using now have mains piped water going to it before or was this an addition that you made?



ed_sturdy says:

Garden tap was previously on mains. I capped the old pipework and ran new pipework from the pump. It's a auto pump which is nice as it's turns on with a pressure drop when you open the tap.

Oct 9, 2008. 8:13 AM [REPLY](#)



netbuddy says:

If that is the case, you should check that your water company is not now over charging you for the now non-existent extra supply that was in your garden / garage.

Oct 9, 2008. 11:16 PM [REPLY](#)



icebird says:

Good idea. Might want to contact your local EPA to make sure they're OK with it. They tend to get nervous when they discover buried tanks of unknown origin, which could discourage a potential buyer of your home.

Oct 9, 2008. 6:44 AM [REPLY](#)



pbhj says:

So the IBC was £50 and the pump was £50, where do I get free mesh, free concrete, free shelving brackets, free holesaw, free wall-deep masonry bits, free plumbing supplies etc.?

Oct 8, 2008. 5:12 PM [REPLY](#)

Wickes, UK: Couple of sacks of concrete will be about £7. Bottle gully £16 (areco.co.uk). Manhole cover £15. Shelving bracket and uprights £6. Holesaws £10. That's £54 more already. I'm guessing £200 at least.

Also the cheapest IBC I found online was £200.

werkzeuge-online (ebay shop, note spelling) does have a "garden water pump" like yours but for £40 (inc del.) but this one doesn't have the tank part, just the pump.

So I'm looking at £340.

I think a couple of rain barrels, fenceposts, few bits of pipe work and some gravity will do for me ... YMMV



ed_sturdy says:

Have a look on ebay

Ebay UK > Search IBC > Buy It Now Only

Returns about 70 of the beasts between 18 and 50 quid.

Thanks for the comments.

Oct 9, 2008. 4:59 AM [REPLY](#)



GeekGod says:

Nice project. Might want to put in a suggestion about making sure to test the system before pouring the concrete though :)

Oct 8, 2008. 3:26 PM [REPLY](#)



dallesasses says:

What is an IBC? I understand that it is a tank for water but, what does the abbreviation mean?

Oct 8, 2008. 2:13 PM [REPLY](#)



bowdie says:

It stands for Intermediate Bulk Container

http://en.wikipedia.org/wiki/Intermediate_Bulk_Container

hth

Oct 8, 2008. 2:58 PM [REPLY](#)



killerjackalope says:

Nice job on the conversion, one addition I would have made is attaching an overflow to the tap on the bottom and putting a tap on it, in case you ever wanted to expand the system for something.

Oct 8, 2008. 12:14 PM [REPLY](#)

We have a few of those in the work yard at all times, unless he's stopped doing the stuff it's a possibility that anyone looking to pick the containers up can have them dirt cheap, it's only a possibility though...



beado4ever says:

Very good. I've been interested in this sort of thing since we moved to a house on a water meter!

I had 3 plastic dustbins doing the job this year.

I'm going to give this one a go for next year tho.

Thanks

Oct 8, 2008. 11:52 AM [REPLY](#)