

Essay on miniature dam with a built-in water tank

[Health & Medicine](#), [Alcoholism](#)



Problem Statement

Humans need to innovate a way how to conserve water because sooner or later it will run out.

Sustainability Issue

Water is a very valuable resource. There are generally two types of water that one can see in this planet—fresh and salt water [1]. It has been long known that water is a necessity and thus essential for survival. It quenches our thirst. Humans need water to live and animals do as well.

Without clean drinking water, many will suffer from water-borne diseases such as amoebiasis, dysenteries, and other bacterial and viral infections.

People, since the ancient times, have actually discovered that living beings are only capable of drinking fresh water and that 75% of this planet is actually covered with water. However, the problem is 95% of the cumulative body of water in this planet is salt water while only 5% is fresh water [2]—plus the fact that most fresh waters are stored in places usually inaccessible to humans such as the huge polar ice caps of the north and south poles [3]. The world's ballooning population will only mean that more and more people consume the limited amount of fresh water every day and if the current trend in the world's water conservation and management system continues, water aquifers and other major sources of fresh water would have been depleted by or even before the end of the 21st century [4].

Because of the notion that water is already scarce in the beginning or could at least be in the future, people have invented different ways how to conserve water. Numerous water production and conservation systems such

as dams, water treatment facilities, and desalination plants have been constructed.

However, this issue will always lead to water conservation. It is the only key to water sustainability [5] and thankfully, certain mechanisms enable humans to recycle water over and over again, and there are a lot of natural, artificial, and combined ways to achieve that. This project will focus on the sustainability issue in relation to water scarcity and the introduction of the basic features of a proposed engineering project that can directly address the aforementioned issue.

Miniature Dam with a Built-in Water Tank—a Practical Engineering Solution

There are a lot of ways how to approach this sustainability issue and an engineering approach will never be a bad idea. In this kind of problem, a miniature dam could be most helpful because the number of population can actually be considered one of the factors that may exacerbate the effects of water scarcity.

Therefore, why not enable a community or even individual household owners procure their own water collecting system? The engineering device we are trying to propose will certainly enable a community or even a lone household owner to store water in his backyard or basically anywhere he wants to store it.

This project features the use of a water collecting system that terminates in either an underground or elevated water storage tank. In a way, it works like a dam but it is not really a dam. It is similar to a dam in a way that a dam

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and this system collect water via the same process—collecting it from the rain. They differ in a way that a dam stores the water collected from the recent rainfalls in a usually huge lake while this miniature dam we have allows the water to flow in a piping system that terminates at an underground or an elevated water storage system.

The main components of this water conservation system are a structurally-modified roof, a piping system, and a water storage system which consists of one or more than a single water tank. Basically, this water conservation system works by collecting water from the rain via the modified roof. This roof is structurally modified in a way that its surface area will be considerably larger compared to when it is just a simple aesthetics-based roofing.

Theoretically, the larger surface area of the house's roof will enable it to catch more water as the rain falls. The roof from the water will then go through a piping system which leads to the water tanks where they will be stored until they are used for the household owner's everyday activities that involve water.

Conclusions and Recommendations

It is a simple engineering project that does not require a large amount of resources to acquire and install. It also, in a way, can be a good form of investment since it may potentially cut a significant percentage or even the entirety of a household's water bill. Additional researches and preferably, a feasibility or a pilot study should however be conducted first to verify the possible gains, advantages and disadvantages of the proposed system.

Works Cited

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