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Crawl Space or Underground Air Duct ? Which one is better ? In this article we introduce a way to remove moisture from walls and floors, without the use of electricity. Further we discuss the import question what is the best to remove moisture?

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Moisture in constructions and crawl space :

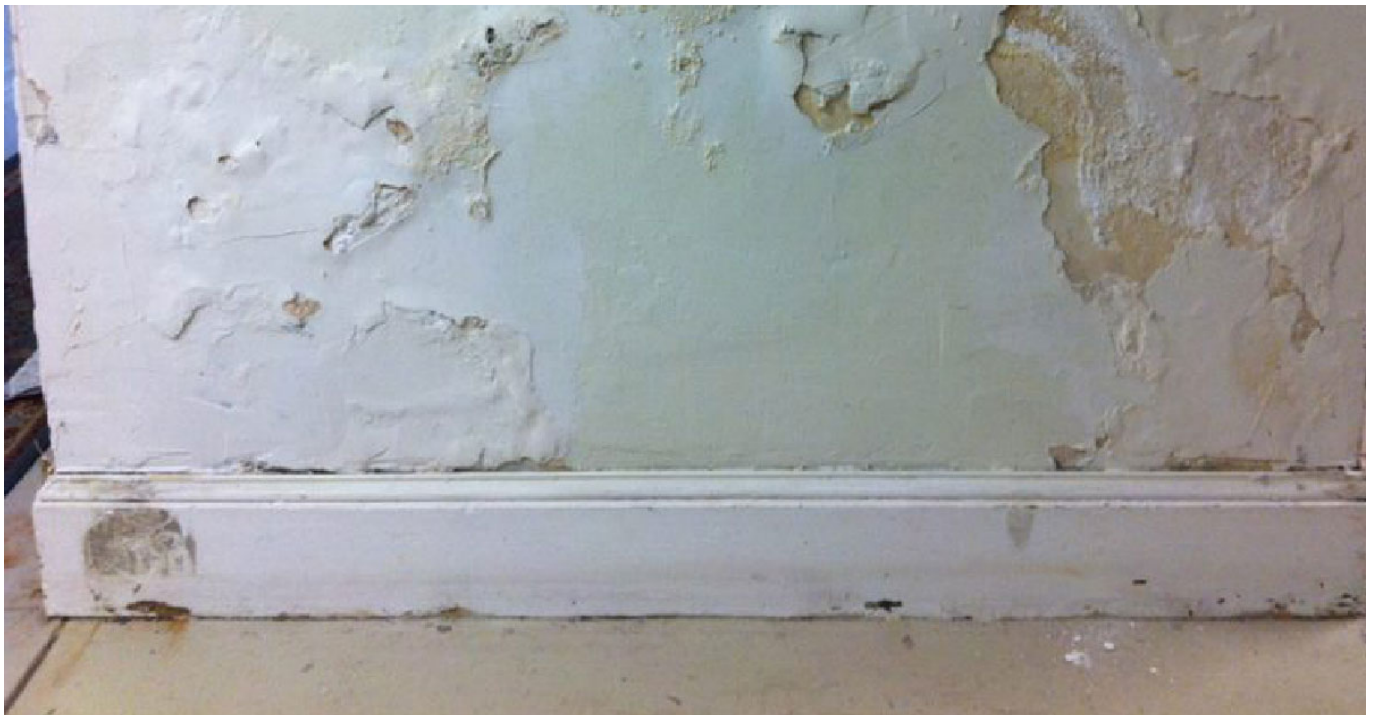
From ancient times, humans began to build houses. They were building a house to achieve more peace and comfort as well as to be safe from animal attacks. Early humans built their houses near rivers because they needed water and their lives depended on water. However, the most important issue in the construction of these houses was the proximity or distance to the water . also how to prevent the attack of animals and people.

They did not Know the air duct and crawl space.

Being close to water causes the soil to be damp. They build houses and shelters on wet soil .

Thus the wall that is built on this wet soil is like a wick that is placed in oil , for instance .

And this wick always directs the oil up from the tank.



From the past, it has been tried to build the walls of the building in such a way as to prevent water and moisture from penetrating into the building,

because moisture causes irreparable damage to the building.

These walls direct moisture from the ground upwards, causing the walls to always be wet,

and this moisture on the wall eventually turns into mold and mildew.

Early humans had no way to prevent this, and the walls continued to raise humidity. They were unaware of the insulation materials. Because they did not know crawl space and air duct.

As a result

The moisture of these walls and floors were covered with stone so that the moisture would not be seen. But this method was not sustainable and the smell of damp was still in those houses. These humid areas are a good place for fungi, mice and insects to live. These endanger human health. Humidity causes bad smells in the building .

But , stone can not be like crawl space .

Moisture and humidity on the floor of the building may occur due to 3 issues mostly :

- Firstly , If the problem is moisture and humidity from leaking and bursting water pipes.
- Secondly maybe problem is the humidity of the building from rainwater.
- Thirdly If the problem is the humidity of the building from the humidity of the ground.

Crawl space

Crawl spaces were built to provide a buffer between the house and its inhabitants and the damp, wet earth below. This seemed to make sense for many decades, especially since they were also a convenient place to put utility cables and ductwork used to circulate conditioned air throughout the house.

Crawl space Problems

Today, however, we understand that a crawl space, instead of serving as a buffer, actually collects water and serves as a repository for humid air. This humid environment introduces a number of hazards, including mold and mildew growth, musty odors, and moist sills and framing that can lead to both structural damage and pest infestations.

However , Air duct is the best way .

Remove moisture from the wall and floor : (with air duct)

Today, with the advancement of science and technology, architects have tried to use the best techniques and materials to build a house so that they can build strong and beautiful houses, but over time, even the best houses undergo changes that need to be addressed and Repair of various parts. In addition the location of the house is also very important.

A house that is always exposed to direct sunlight or is built in a completely humid area. If the walls can not

conduct heat, moisture and water vapor, the walls are falling apart. The air duct , helps us the walls of a building must have sufficient resistance to weather conditions.

The way of transferring water from the ground to the wall and to the floor of the house must be cut off. This path must be blocked by waterproofing materials. But the problem is that these walls and floors have been built and we do not want to demolish and rebuild this whole building.

There are many old and historic buildings around the world that are being damaged by moisture. And we want these buildings to be preserved so that they can be preserved for future generations.



So is there a way to keep these places ? Yes there is.

If a new building is to be built, we place layers of waterproof material on the floor or behind the walls to keep moisture out of the wall.

But we have a way that has been used for de-humidification in some areas for centuries.

The air duct is small, like the narrow paths that the **cat way** .

But it is not , crawl space .

Crawl space alternatives : The cat way (Air duct) :

The cat way is an old technique that directs moisture from under the building to the outside of the building. Today , we have coordinated this old technique with the new technology and better results have been obtained. But what is this technique and how does it work? This technique, called cat way, is based on the laws

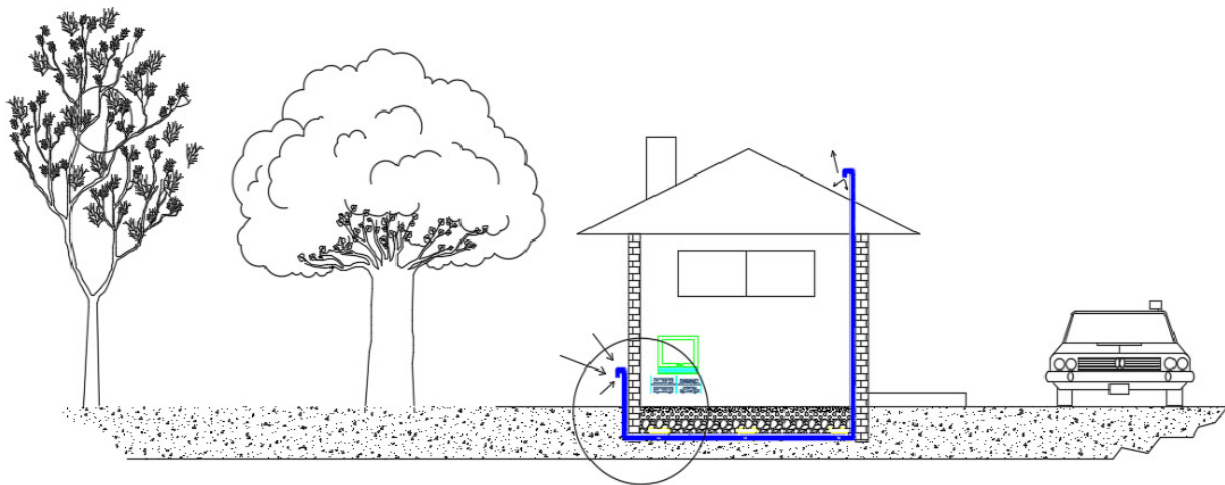
of physics. If there is a fluid in an environment that also has a difference in temperature and a difference in altitude, that fluid will start to move. So , cat way is the same as Air duct and it is better than crawl space .

Take humidity seriously

So if we can circulate the air below the floor of the building and around the roots of the walls . Then the moist air will come out of the floor and the walls and floor will start to dry. It is a fact that , crawl space is not suitable anymore.

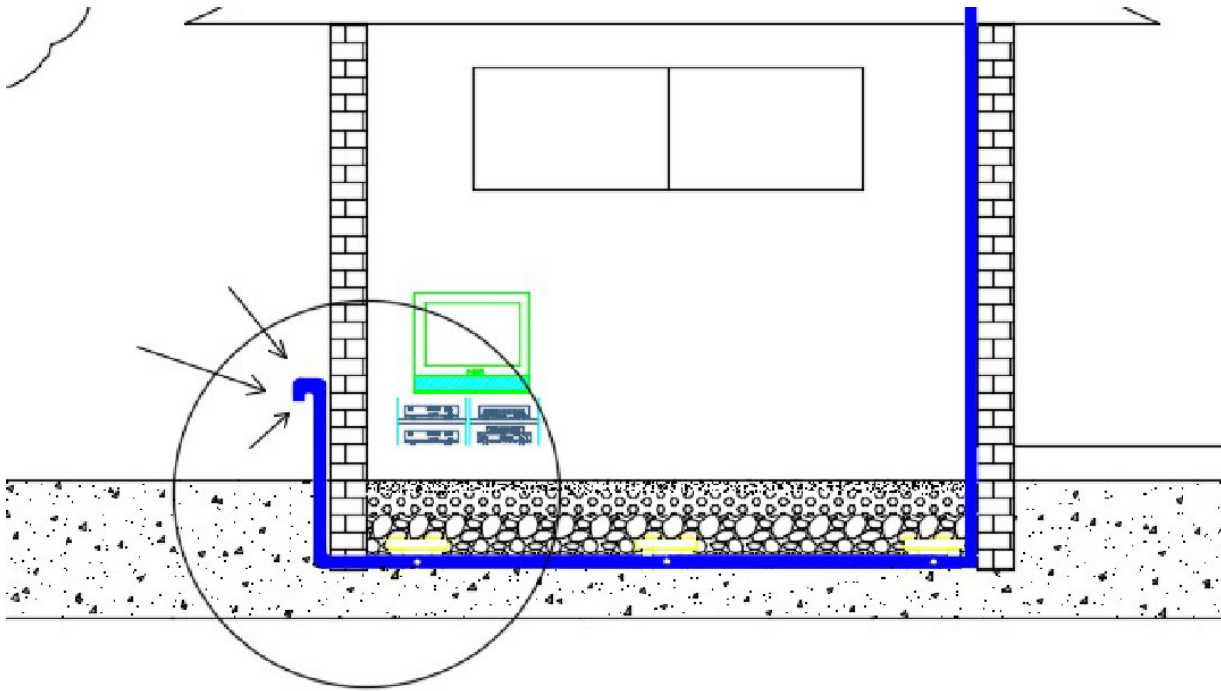
Implementation of air duct

Workers dig the wet soil to the required depth and take it out. We make bricks along the wall at the same depth (about 40 cm) so that a cat can move through those tunnels. Technicians build a network of this channel, which is made of bricks and without mortar, and at a depth of about 40 cm. These channels are all connected. We fill in this network and with stones , diameter of 2 to 7 cm. The underground air duct , moves the air .



The rocks do not allow moisture to reach the surface directly from the floor. From both places of this network, we put a PVC pipe. The height of these pipes is not the same. One end of the pipe is inside the tunnel and the other end is in the open.

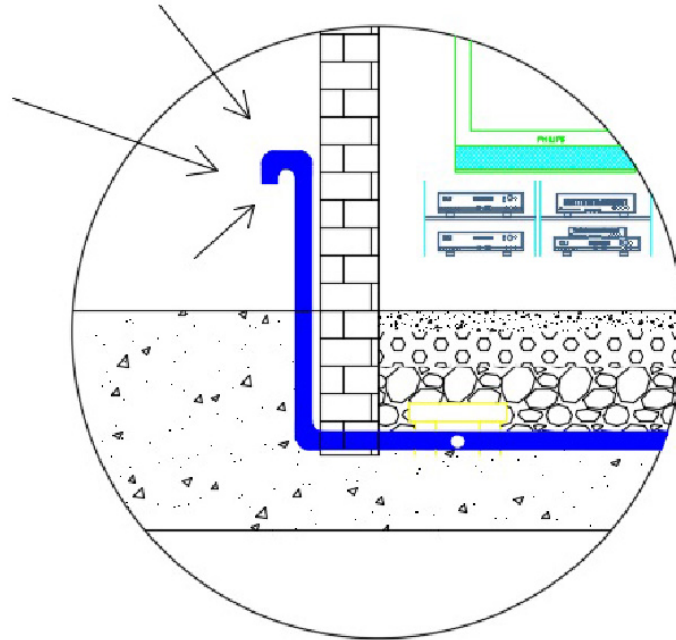
Read more :(no crawl space)



The difference in height and the temperature between inside and outside will cause the air to move continuously.

Fresh air enters from one tube and moves inside the tubes, and moist air leaves the other tube. This constant movement of air prevents moisture from reaching the walls.

So without the use of electricity and suction or blowers, we were able to circulate the air. This is the law of physics that we used as green.



The vacuum created in the floor causes the suction and entry of dry and fresh air from outside . So we can get moisture from the floor and walls without consuming energy.

However In this way, in old buildings will be dehumidified and the neighborhoods will still be beautiful.



About the author

Mohammad Reza Beizae is a civil engineer at the Cademix Institute of Technology (Austria).

He has a bachelor's degree in civil engineering. Beizae engineer has multidisciplinary skills in project management, supervising concrete, steel, wood and machine workshops.

So he uses several engineering software such as : AutoCAD, Revit, Solid and Photoshop in her projects.

And he has been a designer and executor of industrial projects and reconstruction of old buildings for more than 8 years. He is designer Air Duct . Researcher fellow crawl space . As a result also he has worked in large companies and the strength, beauty and timing , However of the project are very important to him.

He has also written the following several articles:

- 1- [Repair a Concrete Floor](#)
- 2- [Interior Designer And Professional Executer](#)
- 3- [Septic Tanks - Repair and Maintenance](#)
- 4- [Making concrete with wastes](#)

I am ready to cooperate in your projects.

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Crawl space, Air duct ,The way cat, way cat, Moisture, Humid, Humidity, Rain, Rainy, Reduction of moisture, remove moisture, remove humid, Wall, floor, smell, Bad smell, building, smell in WC, smell. in building, wet, wet, soil, wet ground, ground, solution, energy, pipe, mortar, Low of physic, implementation, Advantage, Disadvantage, AutoCAD, Revit, Solid, Photoshop, Rebuilding, interior design

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Detailed Description about Crawl Space (https://en.wikipedia.org/wiki/Crawl_space)

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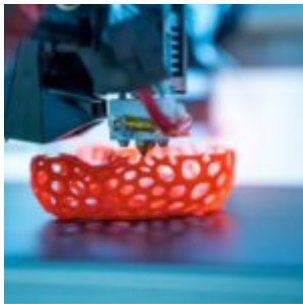
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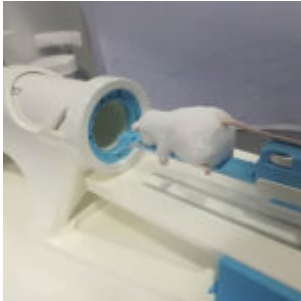
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