

Rising Above the Challenges

The Hydraulic Home Lift

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I. **Title:** Rising Above the Challenges- The Hydraulic Home Lift

II. **Nature of Work :** Novel solution/ indigenous design to a problem/challenge

III. **Scientific Principle(S)/ Concept:**

Scientific principle:

A hydraulic lift is a device used to move objects by applying force created through pressure on a liquid within a cylinder, which in turn moves a piston upward.

The principle behind hydraulic lifts is based on Pascal's Law, which states that any change in pressure applied to an incompressible liquid in a confined space is transmitted uniformly throughout the liquid in all directions.

IV. **Rationale:** India is highly vulnerable to floods. Floods are a recurrent phenomenon, which cause huge loss of lives and damage to livelihood systems, property, infrastructure and public utilities. They cause frayed electrical wiring, electrocution, cracks in foundations, damaged rooftops etc.

To flood-proof houses, though we can add a lot of protective exterior systems, interior barriers, and drainage solutions but the best way to minimize flooding is lifting a house to higher ground. The hydraulic house lift helps to reposition the home enough to minimize the risk of flood water getting into the structure.

Lifting a house in a flood zone above the flood level provides added protection from storms. It minimizes the amount of water trying to penetrate the structure, and that ultimately can make the home safer.

If a house is lifted above the ground in a flood zone, it decreases the amount of water entering the house during floods. So, the concept involves repositioning of home to reduce the damage caused by flood water.

A house lift can be done anytime but the house needs some structural changes. The reduction in damages to the property with the help of home lift is worth the investment.

Raising the house above the ground level has its own advantages. One of the impacts of flooding is the mould growth which can be prevented by this technique. Another advantage of the house lift is that the value of the property increases as it becomes a safer house in a flood zone.

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Reference

Hydraulic Lift: What is it, How it Works, Types, Application (iqsdirectory.com)

Pascal's Law - an overview | Science Direct Topics



Abhisri Gupta and Jayati Damodar Thanki
with their project “The Hydraulic Home Lift”