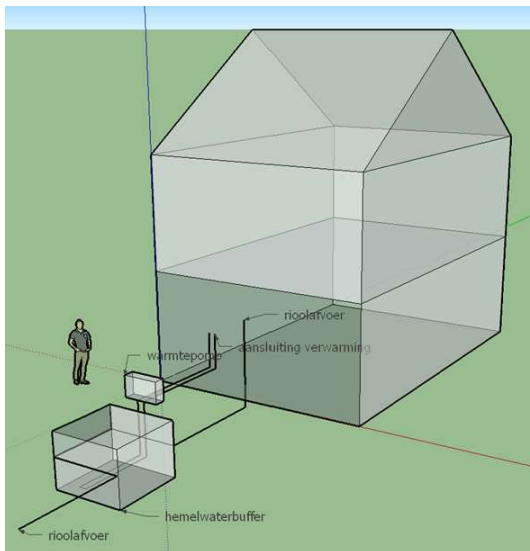


## D-IA WASTE WATER HEAT PUMP

### Introduction

Rainwater collection is increasingly required by municipalities in the Netherlands. Rainwater can be reused for household use. A rainwater buffer for a home will be approximately 4 m<sup>3</sup>. Waste water from a home is also an energy source that is hardly used and can be stored in the rainwater buffer. An outside air heat pump has a low efficiency in a cold winter period. This efficiency can be increased by using the rainwater buffer as a heat source. The concept of the D-IA waste water heat pump is to use waste water heat and water buffer to substantially increase the efficiency of the heat pump.



### Problem description

- A dynamic energy model must be updated with freezing conditions for the water of the rainwaterbuffer.
- A case study should be optimised for the volume of the rainwaterbuffer, the rainwater area (roof) and the heat loss of the building.

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