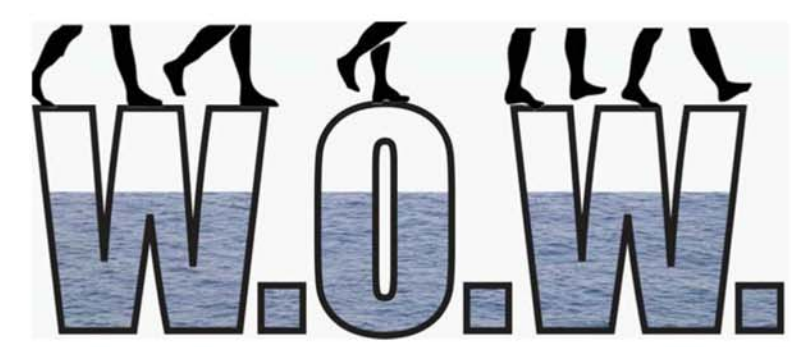


# IPRO 344 - Residential Rainwater Harvesting

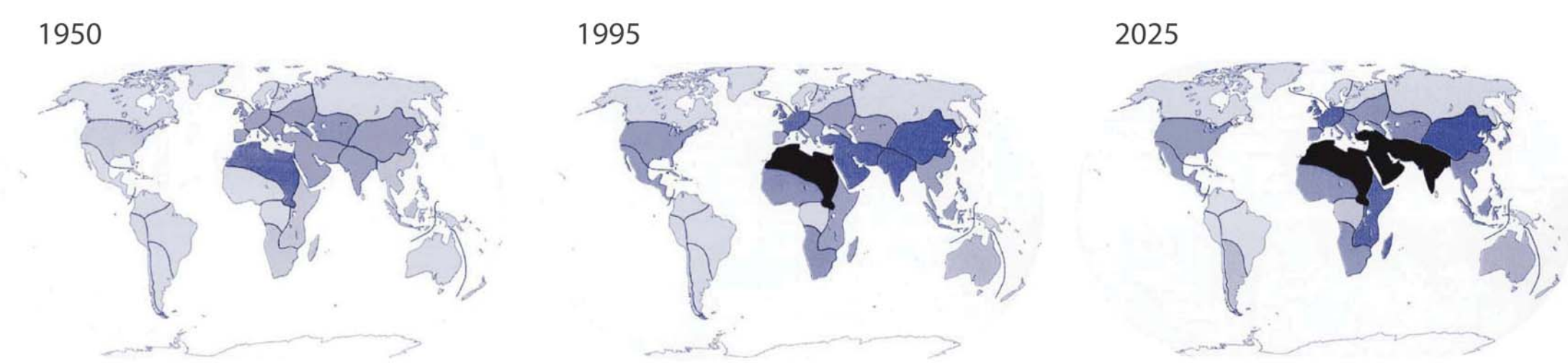


Pentair's "Walking on Water" - Integrated Residential Paving / Collection System

## Background:

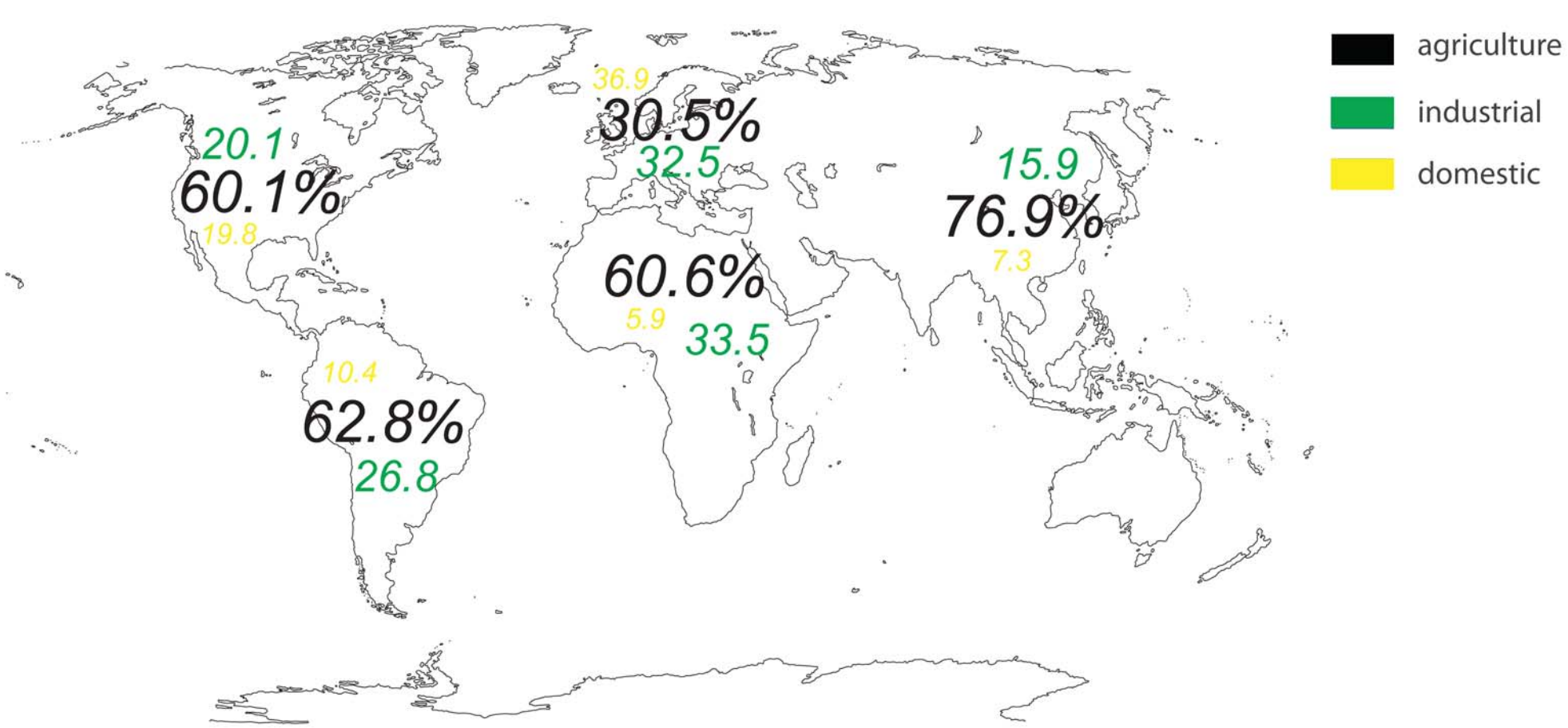
The global water availability is on the rise. Over 20% of the world's population does not have access to safe drinking water.

More than 2.2 million people die each year from diseases Related to contaminated drinking water.



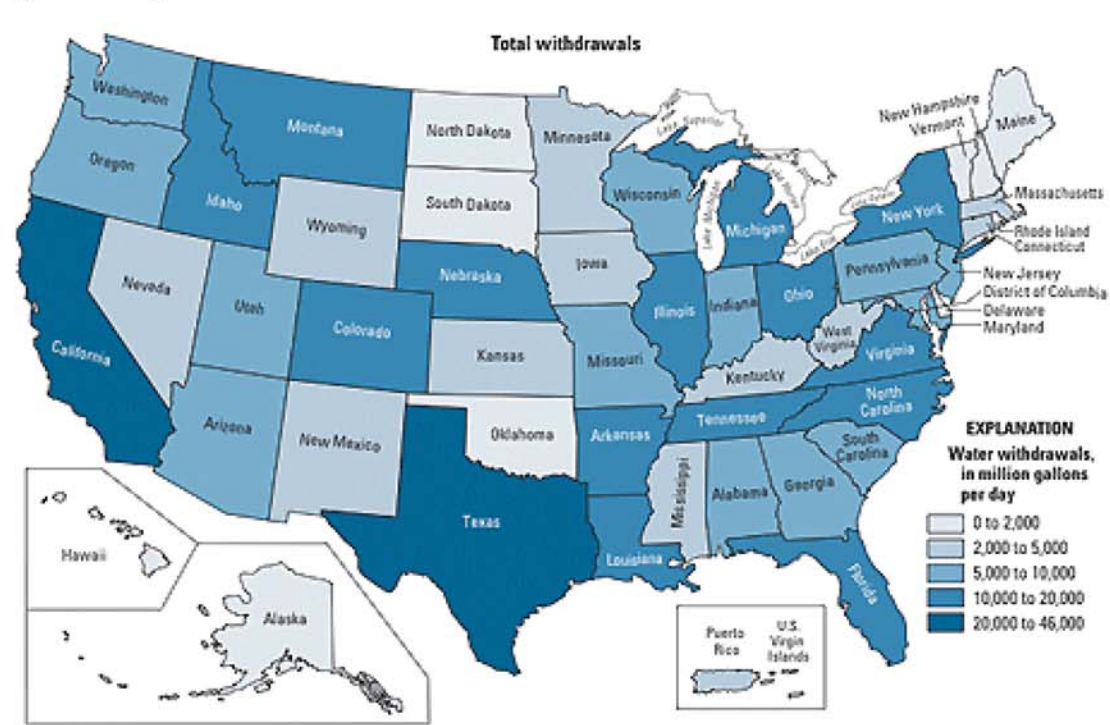
Global Water Availability

Over 450 million people today in 29 countries (mostly in Africa and the Middle East) are suffering from chronic water shortages. Which translates to roughly 1/5th of the world's population.



Illinois has one of the highest water withdrawal amounts in the country (9,000-13,500 million gallons of water per day).

1,000,000,000 gallons of Lake Michigan are consumed in Chicago everyday.



United States Water Consumption

## Problem:

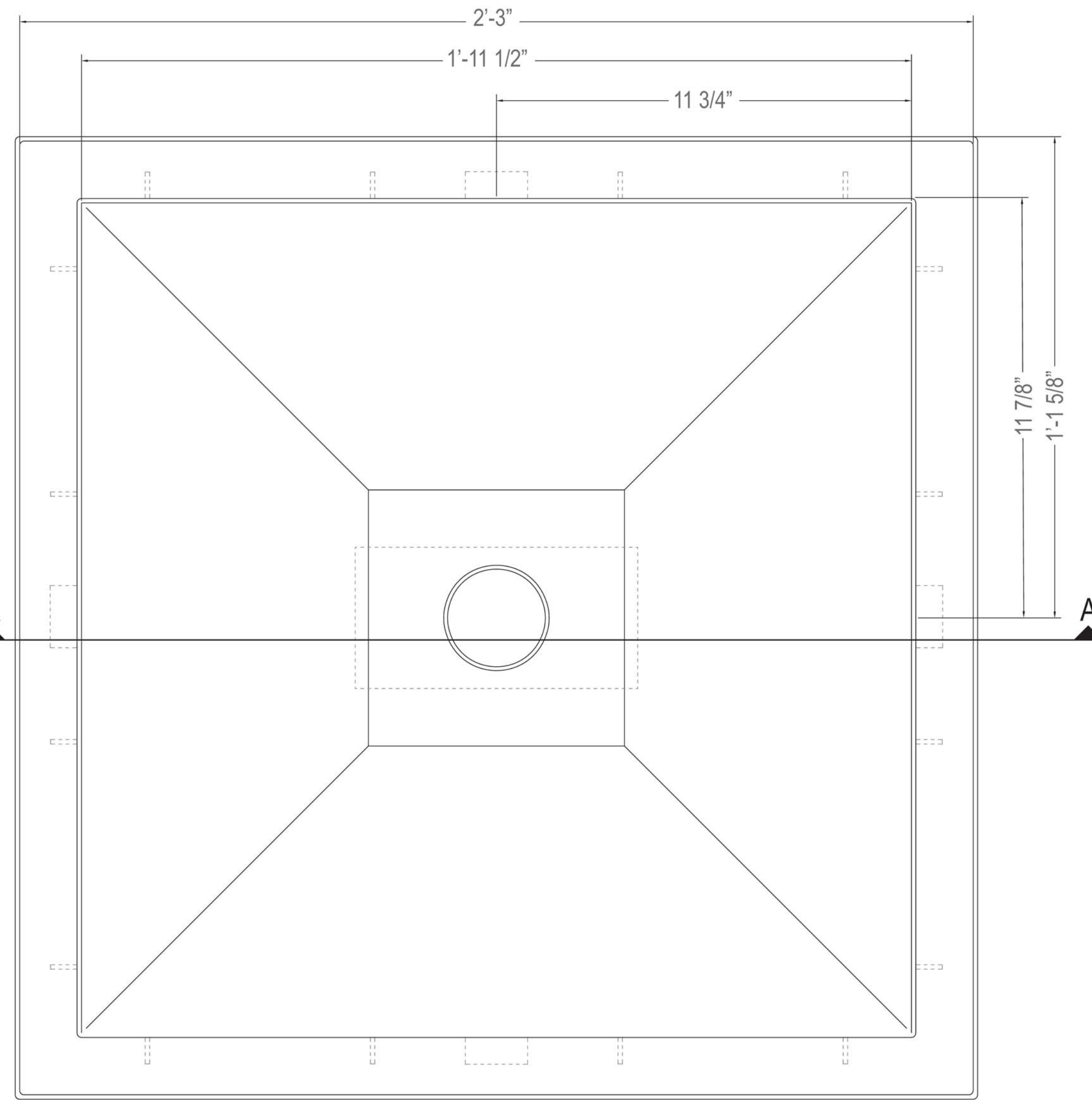
The intention of this IPRO team is to develop a product in which could become the catalyst to the implementation of rainwater harvesting systems to the urban and rural residents, on a mass scale in the United States.

The team is comprised of various disciplines. Many of which have previous knowledge and research into aspects of rainwater collection or similar areas of study.

The team is highly motivated to develop a product that will benefit Pentair Water and its goals, while creating a product that helps improve the quality of life.

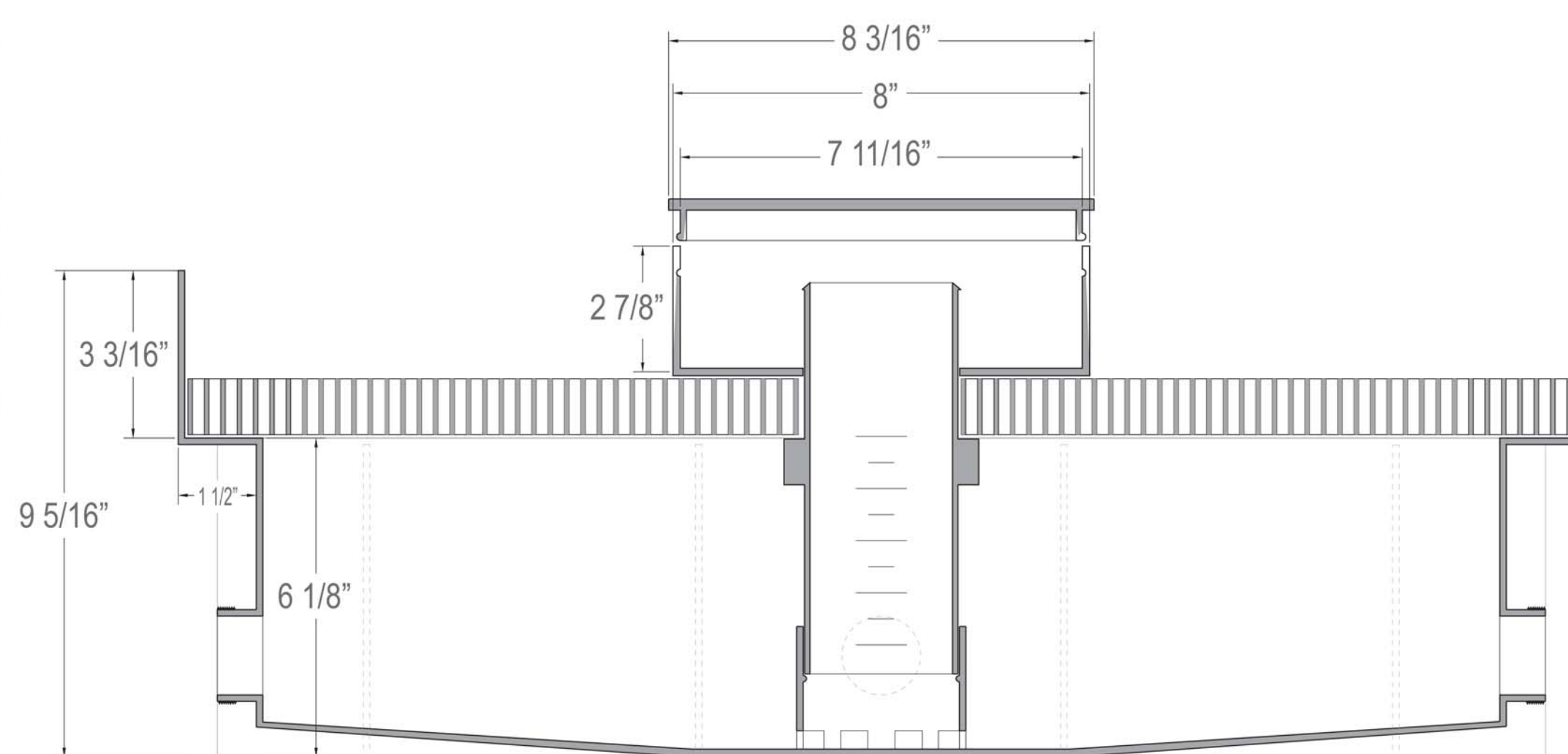
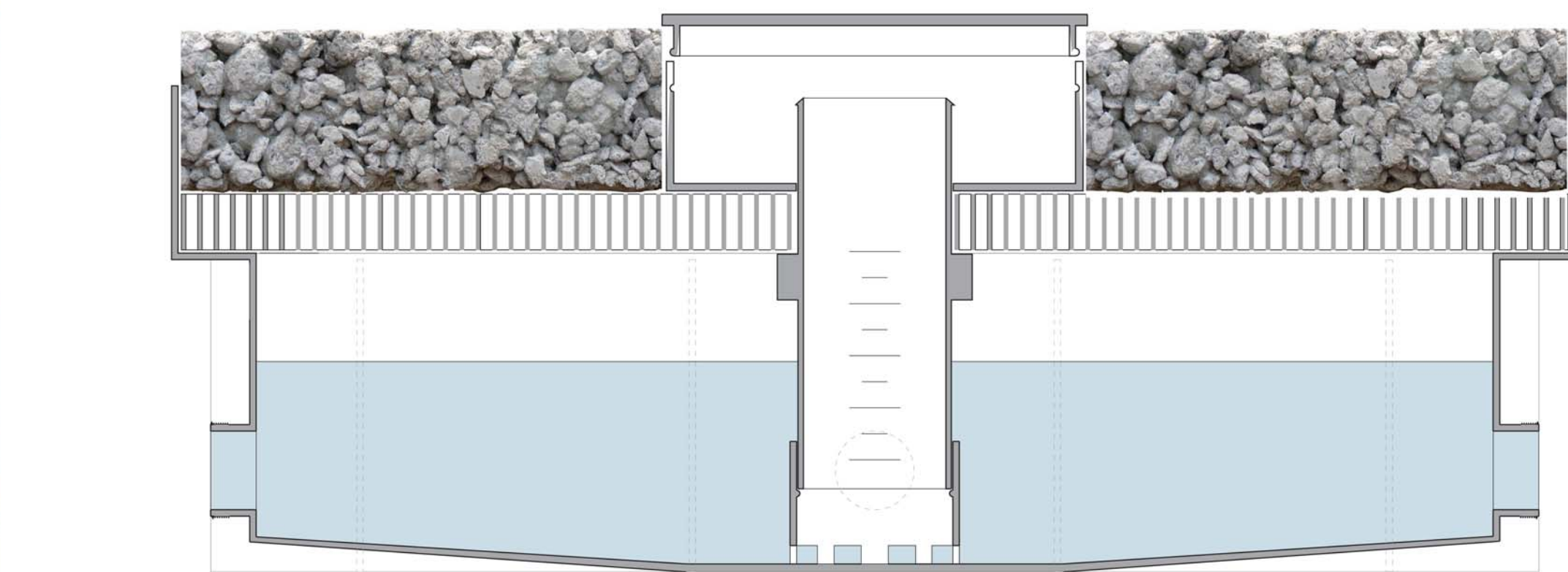
Ideas > Product > Marketability

## Product Design:

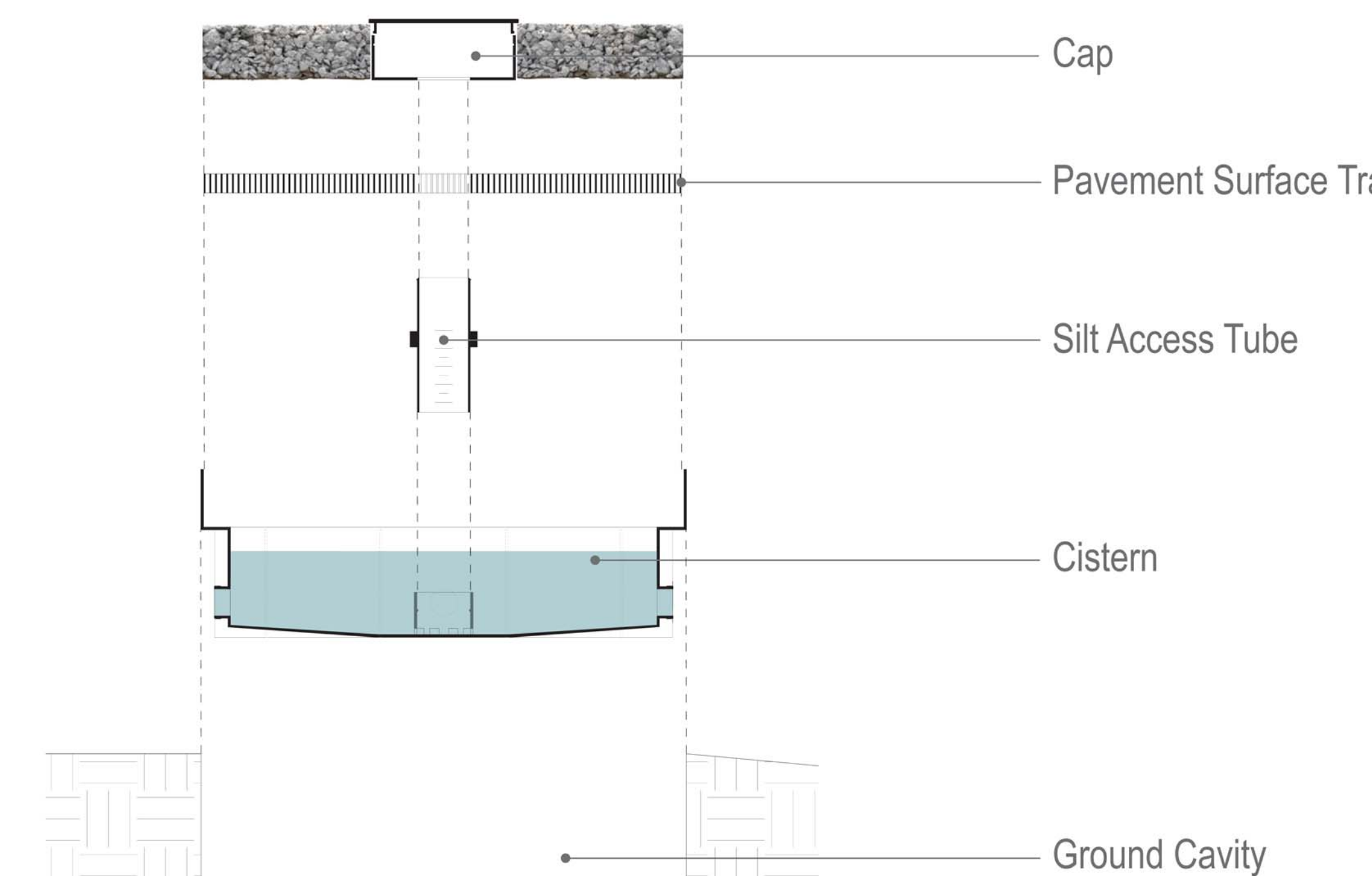


Cistern Plan

## Prototypes / Process Studies:



Section A



Exploded Sectional Diagram of System Components

## Objectives:

Our IPRO objective is to design and market a rain water collection system that is efficient, user friendly and aesthetically pleasing, to that of the current products on the market.

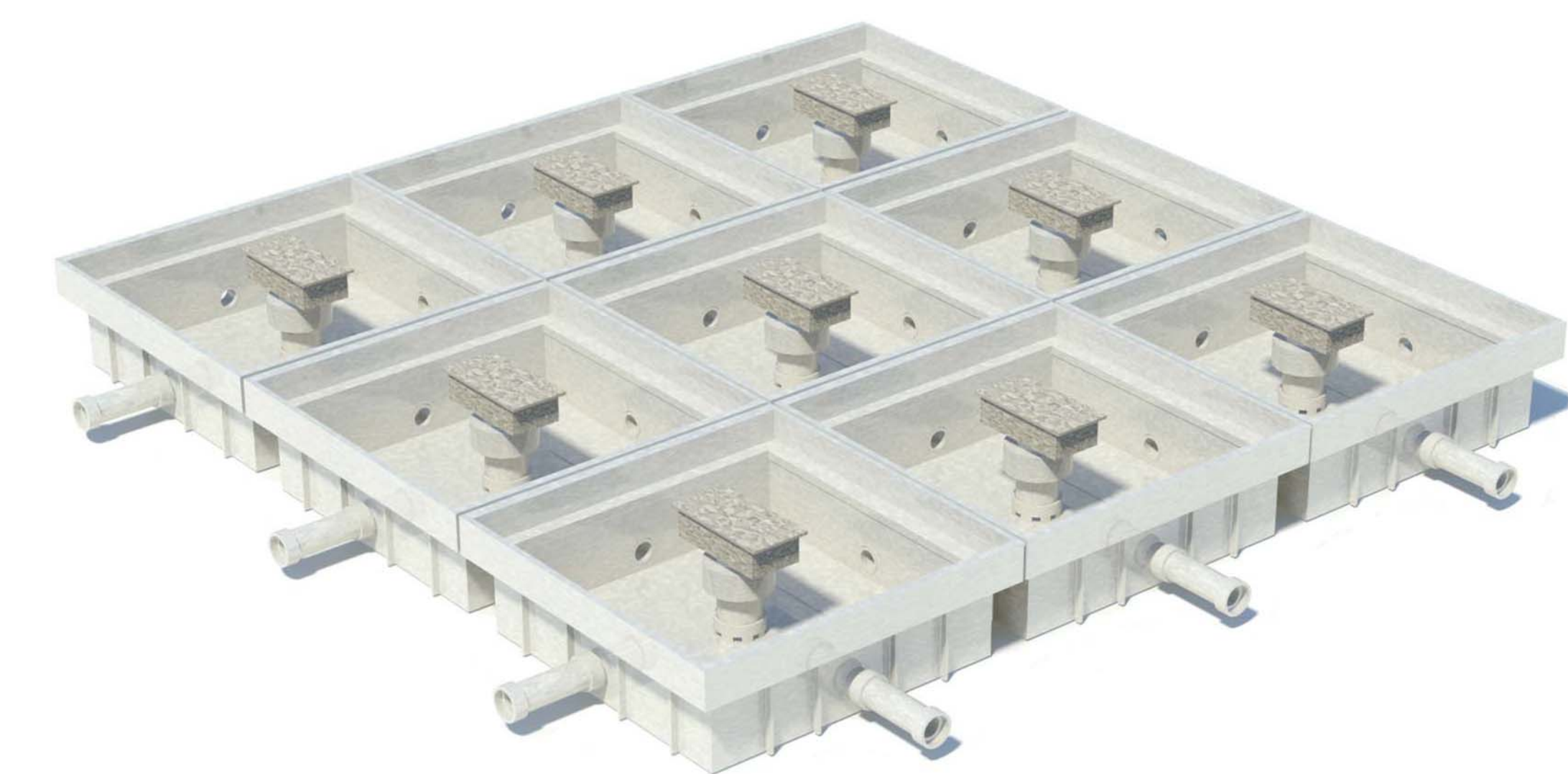
## Methodology:

- Research current practices and systems
- Discuss the appropriate solutions to the problem
- Develop the conceptual ideas
- Visit and present conceptual ideas to Pentair, Inc.
- Develop a product
- Develop working drawings and prototypes
- Develop a marketing plan
- Visit Pentair for further insight into product specifications

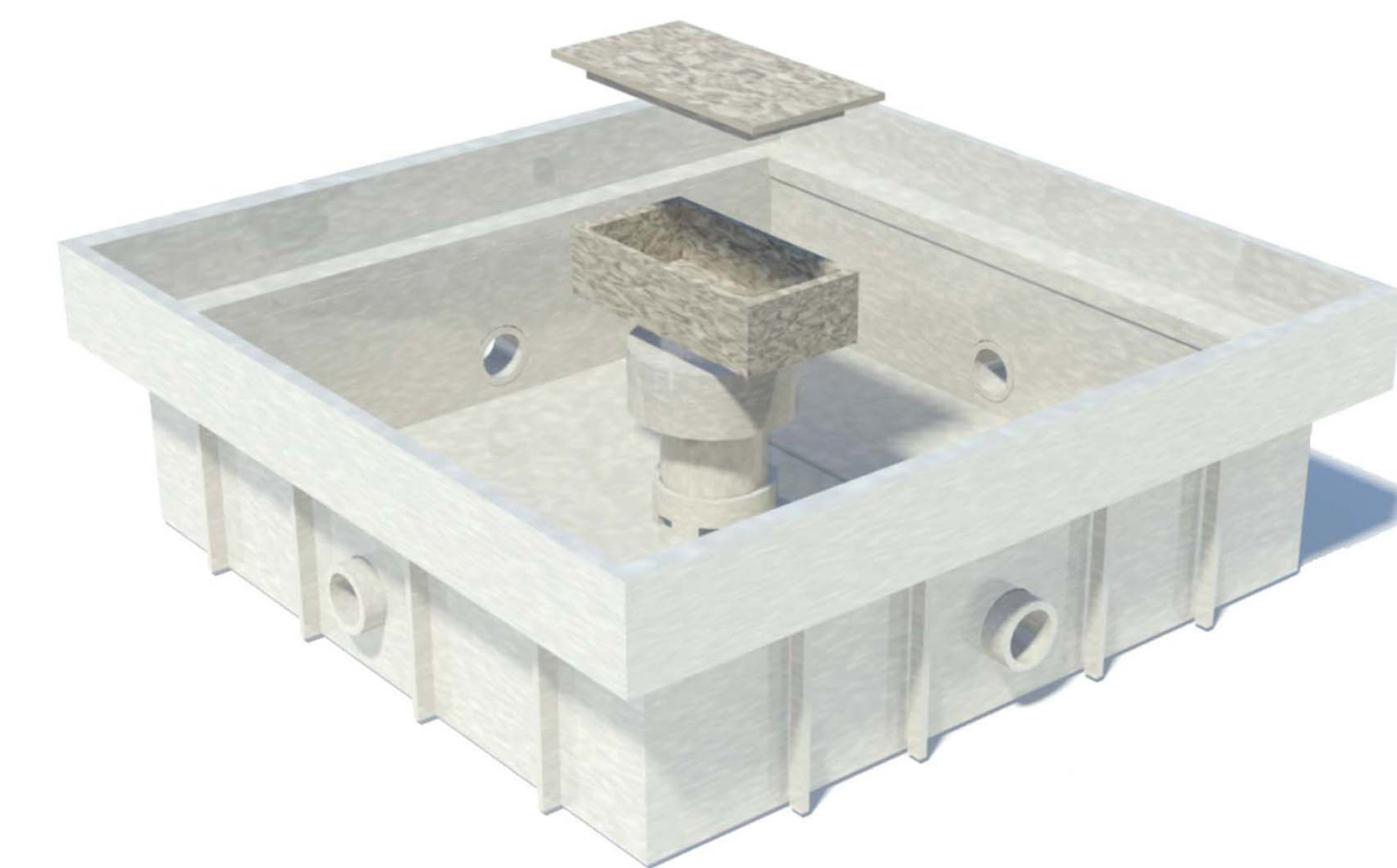
## Research:



## Renderings:



Module / Cistern Configuration (9 modules)



Pentair Cistern Module (with removable cap)