**IPRO 344 - Residential Rainwater Harvesting**

### Pentair’s “Walking on Water” - Integrated Residential Paving / Collection System

#### Objectives:
Our IPRO objective is to design and market a rainwater collection system that is efficient, user-friendly, and aesthetically pleasing, to the highest standards of the market.

#### Methodology:
- Research current practices and systems
- Develop the appropriate solutions to the problem
- Develop the conceptual ideas

1. Visit and present conceptual ideas to Pentair, Inc.
2. Develop networking strategies and prototypes
3. Develop marketing plan
4. Present Pentair for further insight into product specifications

#### Research:

- **Background:** The global water availability is on the rise. Over 20% of the world’s population does not have access to safe drinking water.
- **Problem:** More than 2.2 million people die each year from diseases that could be treated with clean water. The world’s population is expected to increase from 6.1 billion to 9 billion by 2050, placing a strain on existing water resources.

#### Search Criteria:

1. Pentair’s “Walking on Water” - Integrated Residential Paving / Collection System
2. IPRO 344 - Residential Rainwater Harvesting

#### Technical Data:

- **Dimensions:**
  - Height: 2'-0"
  - Depth: 0'-0 3/4"
  - Total Volume: (2 Cubic Feet)
- **Cistern:**
  - 1 Cubic Foot Per 15 Gal.

#### Calculations:

- **Calculations to Estimate Water:**
  - 15,000 ft³ / 15 gal = 1,000 modules
- **Calculations to Estimate Cistern:**
  - 15,000 ft³ / 15 gal = 1,000 modules

#### Methodology:

#### Market:

1. Develop a product
2. Discuss the appropriate solutions to the problem
3. Develop the conceptual ideas

#### Technical Specifications:

- **Prototype:**
  - **Cistern:**
    - 1 Cubic Foot Water
    - 7.5 gallons of water/module
  - **Pavement:**
    - 1 square foot of garden
    - 400 gal./15 gal. / module
  - **Dimensions:**
    - 2'-0" x 2'-0"

#### Product Marketing:

- **Benefits:**
  - Cost savings
  - Environmental impact

#### Renderings:

- **Layout:**
  - Cistern Configuration / Paving System

#### Prototypes / Process Studies:

- **W.O.W. Module:**
  - 2 Cubic Feet Water
  - 15 gallons of water/module
- **Typical Residential Garden Hose:**
  - 9 gallons per minute (gpm)
- **Rainwater Collection System:**
  - Collected rainwater is typically held in a cistern, which your landlord or building owner implemented it in your building? Yes 71 72%

#### Installation Instructions:

1. **Configuration:**
   - Cap
   - Cistern
   - Pavers

   - Cap
   - Cistern
   - Pavers

2. **Installation:**
   - 1.) Dig a ditch to put cistern(s) in to the ground
   - 2.) Connect the adjustable access cap box to be flush
   - 3.) Dig a ditch to put cistern(s) in to the ground
   - 4.) Connect the adjustable access cap box to be flush

3. **Benefits:**
   - Cost savings
   - Environmental impact

#### Survey Results:

- **Correct Answer:**
  - 80% of participants stated they would choose water reuse for irrigation purposes.

#### Pentair Water Company:

Pentair delivers solutions that improve lives daily. Pentair provides water solutions and innovative products to meet the demands of today’s ever-changing global environment. Pentair is a market leader in the design, manufacture, and distribution of a broad range of products that treat, store, and deliver water. Pentair delivers solutions that improve lives daily.