

Senior Design Project Description

Company Name	Bosch Rexroth	Date Submitted	11/8/17
Project Title	Water Recovery - Assisted Flushing System (BOSCH H2O)	Planned Starting Semester	Spring 2018

Personnel

Typical teams will have 4-6 students, with engineering disciplines assigned based on the anticipated Scope of the Project. 250 hours are expected per person.

Complete the following table if this information is known, otherwise the Senior Design Committee will develop based on the project scope:

Discipline	Number	Discipline	Number
Mechanical	5	Electrical	1
Computer		Systems	
Other ()			

Project Overview:

Develop a rain barrel assisted flushing system to reduce the amount of water being used to flush toilets/urinals in the facility. Collect rain water from the roof of the facility into rain barrels and then pump the water from the rain barrels back up into holding tanks above the restrooms, ideally using solar energy to operate any pumps, switches, and valves. The holding tanks would provide additional pressure and release water to assist the city water in flushing the toilets and/or urinals.

Project Requirements:

Develop a viable concept from pre-existing systems and/or new systems that would achieve the function desired. Develop a schematic of the how the system could work with the existing structure and plumbing of the Bosch Rexroth facility. Prototype as much as possible within the limit of the Project budget.

Expected Deliverables/Results:

- Concept presentation with details about the functional system.
- Schematic of the entire system from the roof rain water all the way to the sanitary sewer pipes.
- Full drawings and bill of material
- Cost estimate and breakdown and Bill of Material for complete system.



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- Savings estimate and breakdown of major elements.
- Pros, cons, limitations and potential risk of the system.
- Implementation of prototype of as much of the system that can be afforded with the budget.

Disposition of Deliverables at the End of the Project:

Display at the last expo and then turn over to Bosch Rexroth at the end of the project.

List here any specific skills, requirements, knowledge needed or suggested (If none please state none):

- Plumbing Systems
- Building Structure
- Solar Panels
- Electrical valves and systems
- Bosch-Rexroth parts must be used where possible