



WHY RAINWATER HARVESTING? USING AN AGRICULTURAL CASE STUDY DESIGN & INSTALLATION

S.J. RITCHIE RESEARCH FARMS SUSTAINABILITY PROJECT

WHY RAINWATER HARVESTING?

WATER: FINITE RESOURCE

- Less than 3% of the world's water is fresh – the rest is seawater and undrinkable.

- Of this 3% over 2.5% is frozen, locked up in Antarctica, the Arctic and glaciers, and not available to man.

- Thus humanity must rely on this 0.5% for all of man's and ecosystem's fresh water needs.

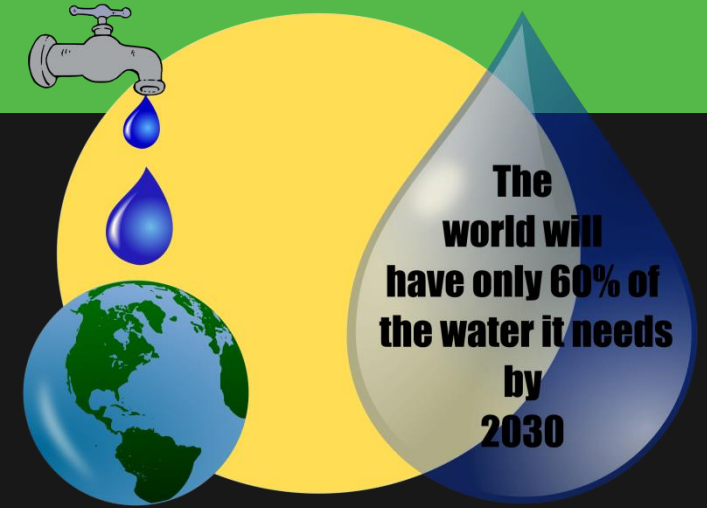


- Canada is home to 20 percent of the world's fresh water!

- We have to be a global leader in Water Sustainability and STOP!

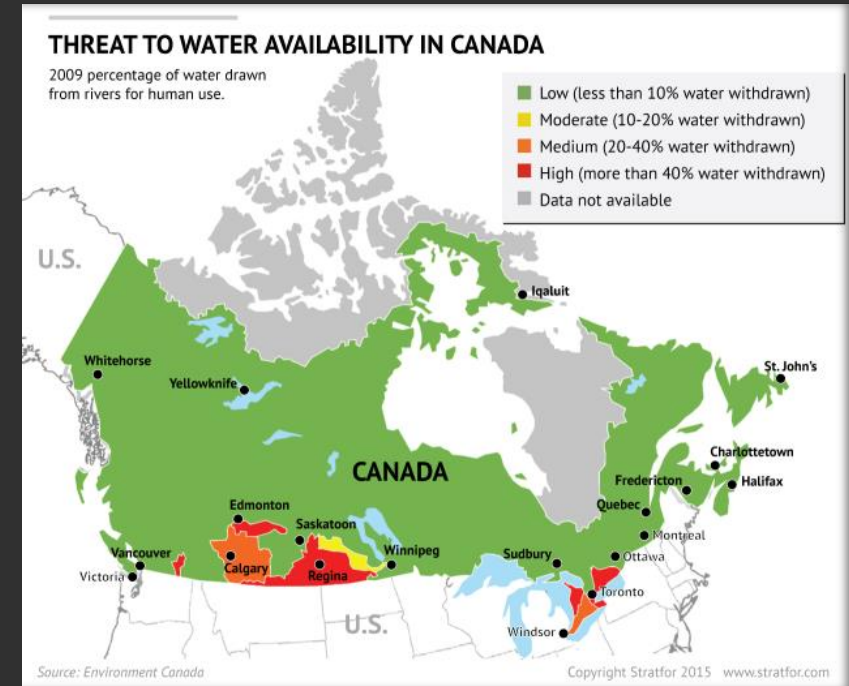
TAKING THAT “FINITE” RESOURCE FOR GRANTED!

- Water has been perceived to be so abundant over the human existence we have come to take its availability for granted
- Globally many suggest that by 2025 2/3 of the global population will live in areas where there is not enough water or the water has been compromised. By 2030 we will only have 60 percent of the worlds water needs!
- Water consumption is rising at double the rate of population growth
- Both Physical and Economic Scarcity of water is now prevalent around the world. For 1 billion people, safe water is SCARCE and that includes parts of Canada!



AGRICULTURE BOTH A VICTIM AND CAUSE

- For Agriculture purposes water has to be a certain quality both in the production and processing of livestock and crops. And they require a certain quantity of water.
- Water forms the basis of our existence and the main component of our nutritional security
- Agriculture is the largest user of fresh water but also a major source of water pollution
- A victim of climate change in which areas with advantages in farming begin to see decrease water supplies and increases in extreme weather events
- Agriculture has a large role to play in combating water scarcity



CAN RAINWATER HARVESTING BE
PART OF THE SOLUTION?

YES

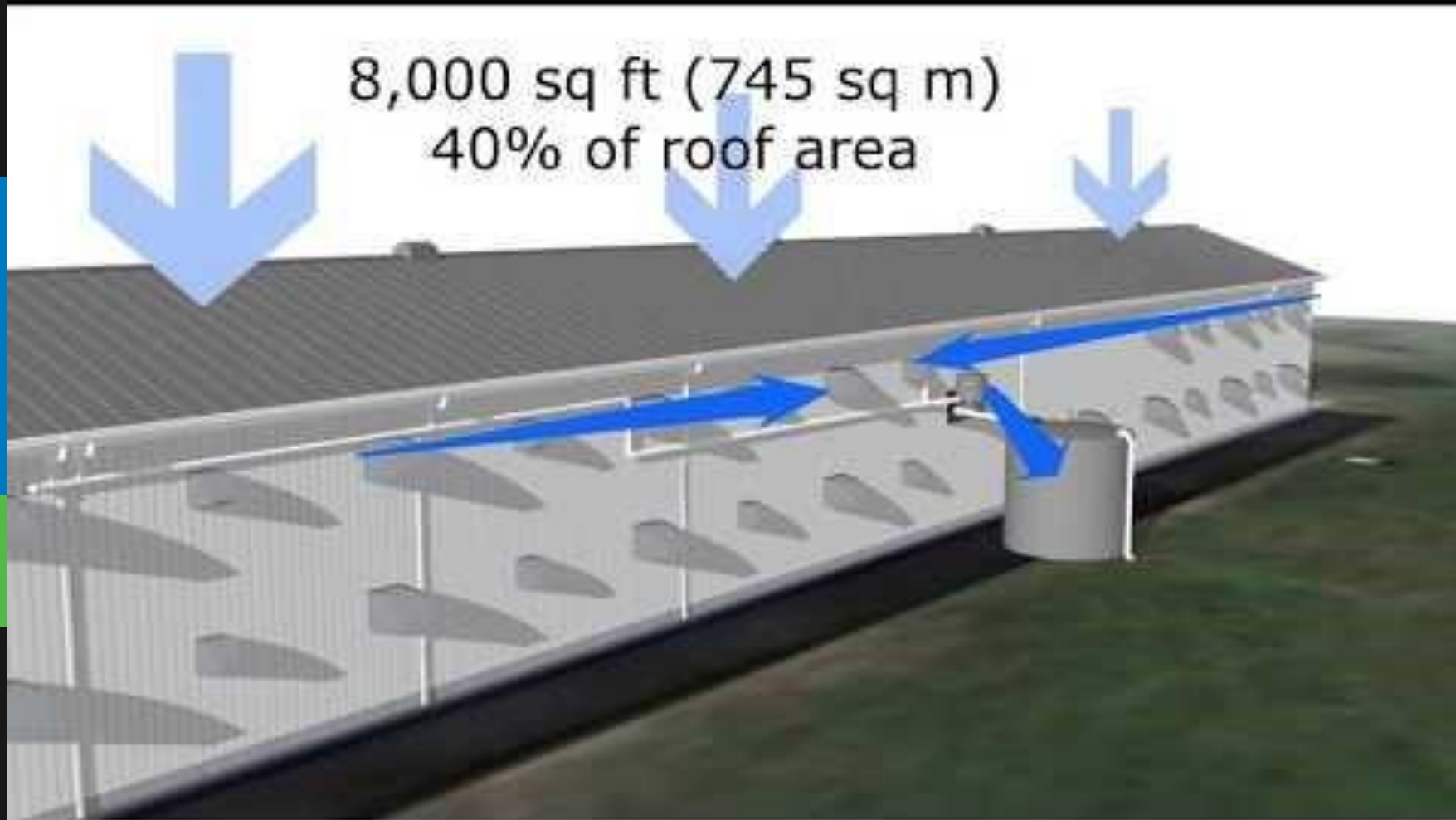
RAINWATER HARVESTING AND AGRICULTURAL BENEFITS



- Reduction of soil erosion as surface run-off is reduced
- Saving of Energy required to lift ground water
- Monetary Savings on water bills (particularly if using city water supplies)
- Diversion of water away from crop fields protecting crop plants from damage
- Reduction in Calcium Carbonate that effects absorption in roots and leaves
 - Prolonged Equipment and reduced maintenance costs
 - Potential decreases in bacterial development
- Source of drinking water for Livestock and preferable over chlorinated sources
- Used for domestic purposes on the farm such as cleaning machinery, fire prevention and cooling barns.
- Back up source of water
- Change **Perception** and increase the **Value** of your product

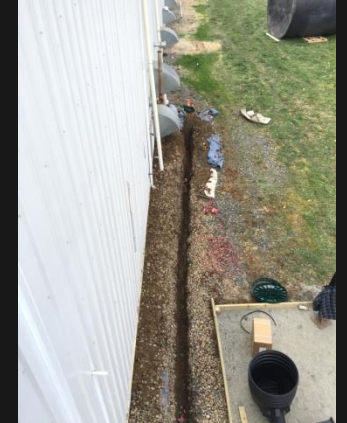


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KEY COMPONENTS

- Dark in Color Storage Tank and located on the North side of the building.
- Pre-filtration before tank
- Frost Free Piping 2 feet below ground insulated when above ground
- Properly Designed Conveyance System to handle water volume and maintain proper velocity for Pre-Filter



KEY COMPONENTS

- DAB E.Sybox Dual Pump System
- Multi-Stage Filtration System
- Automatic Cleaning Unit for Filter
- Hi-Low Float Switch Activating two Master Valves.
- Reduced Pressure Principle Backflow Protection



THE RESULT!



WATER DEMAND

SJRRF Water Consumption

	2017		2016	
Month (s)	Litres	Days	Liters	Days
Aug- Sept	388,678	62	440,800	62
Oct- Nov	372,028	60	405,420	61
Dec-Jan	368,901	50	511,322	61
Feb- Mar	461,073	67	388,925	60
April-May	515,624	65	414,686	61
Jun-Jul	425,550	61	375,980	61
Total	2,531,854		2,537,133	



WATER SUPPLY

Formula: 620 Gallons x Annual Inches of Rainfall x (Square footage / 1000)

620 Gallons x 60.5 in x 8000 / 1000 = 8

40 % of Roof
Surface

300,080 Gallons
Or
1, 362,363 Litres

100 % of Roof
Surface

750,080 Gallons
Or
3, 405,908 Litres

WATER DEMAND

SJRRF Water Consumption

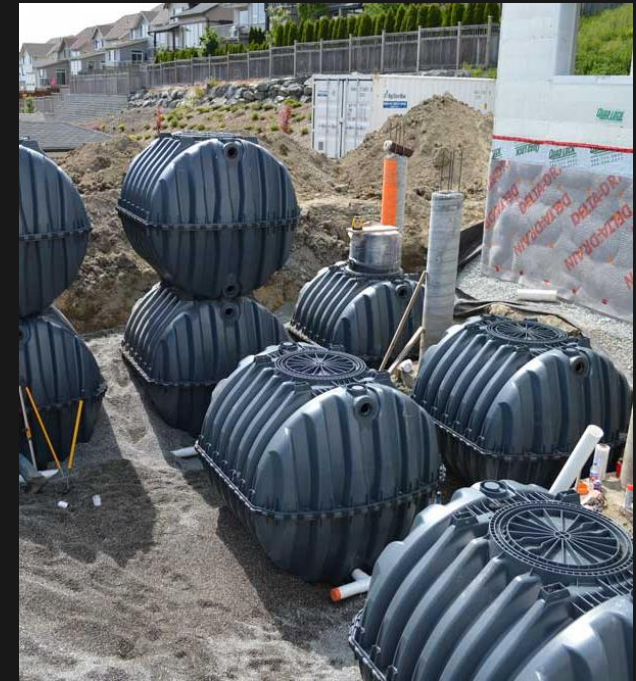
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UNIVERSITY SPRINKLERS

- Serving British Columbia since 1983
- Specializing in Irrigation, Landscape Lighting and Rainwater Harvesting
- Members of Irrigation Association of B.C., American Rainwater Catchment Systems Association, and the Canadian Association of Rainwater Management.
- Design Specialists on Staff for Residential, Commercial and Agricultural Irrigation, Rainwater and Lighting.
- Year Round Service Department with Trained Technicians



YOUR PRESENTERS



- David Pfortmueller is the Vice President of University Sprinklers with over 25 years of experience in the industry. David is a current certification board member and instructor of the Irrigation Association of B.C. He holds all certifications offered by the IIABC, as well as the distinctive EPA WaterSense Partner, for his dedication to water conservation techniques. He is the father of three daughters who keep him busy on the hockey rinks and dance studios of the Lower Mainland.



- Whalen Bishop is a Sales and Service Manager of University Sprinklers and is currently a board member of the Irrigation Association of B.C., the Canadian Association of Rainwater Management, and the Vice President of the Sardis Children's Centre in Chilliwack B.C. He is a Certified Rainwater Harvesting Professional with ARCSA, a Certified Irrigation Designer (Residential), a Certified Cross Connection Control Specialist and a Certified Irrigation Scheduler. Whalen has a wonderful wife and two fantastic children.