



# CALIFORNIA STATE SCIENCE FAIR

## 2015 PROJECT SUMMARY

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| <b>Name(s)</b><br><b>Trinity Mobley; Danya Novak</b>   | <b>Project Number</b><br><b>J1015</b> |
| <b>Project Title</b><br><b>Water-Wise: Rainwater Catchment and Its Possibilities</b>   |                                       |
| <div><div><b>Objectives/Goals</b><br/>Our objective was to find the most efficient roof material and design for rainwater catchment for storage and later use. We also looked in to whether a hydro turbine could be applied to a roof to collect energy for use in redistribution pumping later.</div><div><b>Methods/Materials</b><br/>We tested three variables; the roof design, the roof material, and a hydro turbine, to find the most efficient combination to use in a rainwater catchment system. On the first two tests, we poured 300 ml. of water over the same area of roof on four roof prototypes, based on common roof patterns and materials. For the hydro turbine test, we continued to try new ways of pouring water to get an attached light bulb to turn on.</div><div><b>Results</b><br/>For the roof design results, we concluded that the shed roof with a return was the most efficient. The roof material results for the different types of roofing were the same, the type of material did not affect the amount of water collected in our study. The result for the hydro turbine was inconclusive.</div><div><b>Conclusions/Discussion</b><br/>From the two parts of the hypothesis the roof design and material results proved that there was a "most efficient" roof design, and that the materials were all capable of shedding the same amount of water. By knowing this variant, you now have information which can be applied to your roof design specifications. We concluded that the hydro turbine we had did not work in our circumstance.</div></div> |                                       |
| <b>Summary Statement</b><br>Rainwater catchment is a viable means to collect and utilize water from your roof.   |                                       |
| <b>Help Received</b><br>Fred Ballerini, Roger Manley: Garden Solutions Landscaping, Catherine Stedman: CalAm, Denise Wood answered questions. Craig Novak: Sage Building Solutions Inc. answered questions, helped build prototypes, and supplied the majority of materials.   |                                       |