

Enhancing Campus Resilience THROUGH Sustainable Water Planning

Mission: Design, fund, and construct a large-scale rainwater capture system for campus irrigation reuse, providing UCLA with sustainably sourced water, generating savings, and setting a precedent for the community at large to follow.



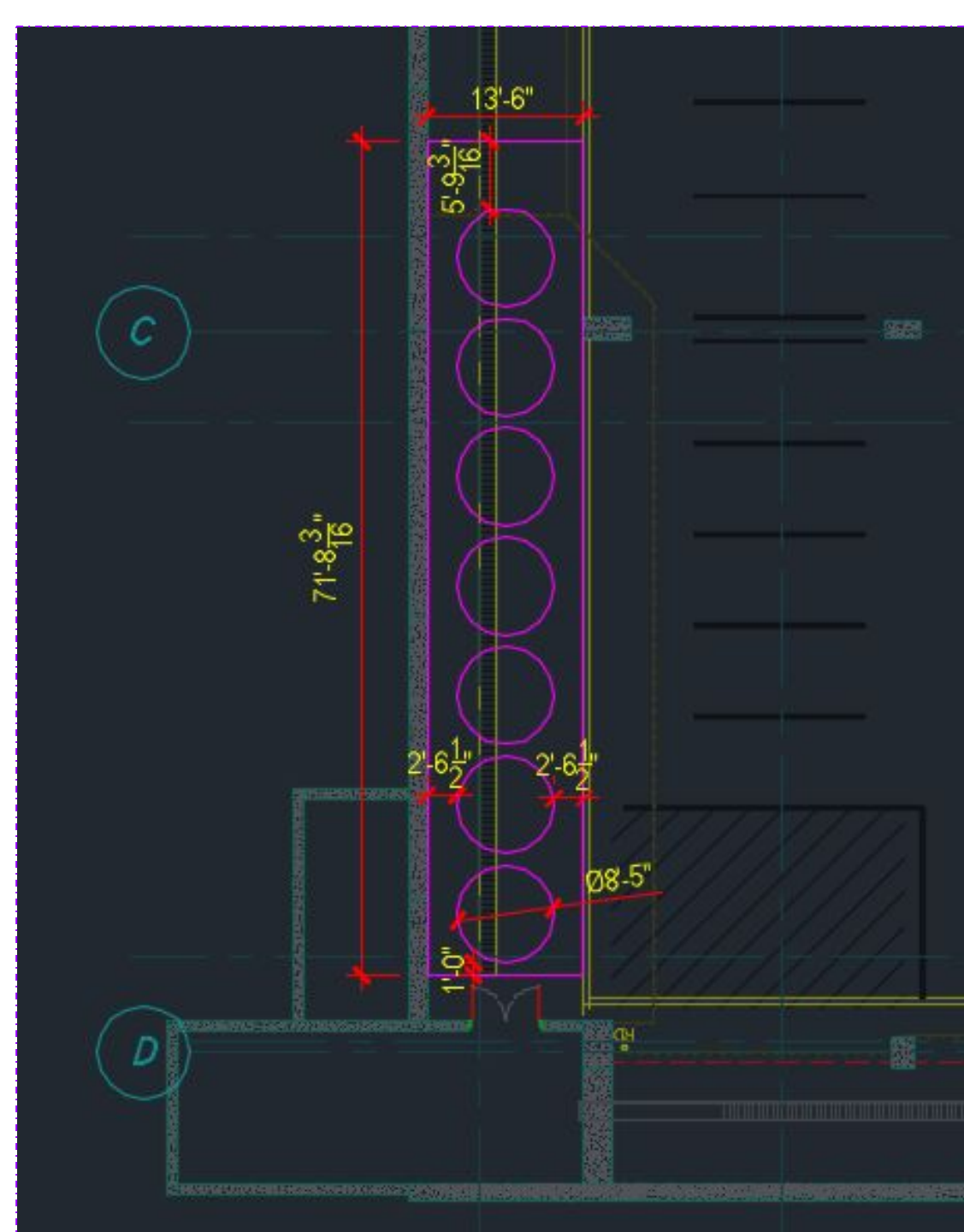
Design

- **Goal:** Save water by capturing rainwater in on-site storage tanks and reusing it for campus irrigation.
- **Location:** Parking Structure 9 Level 1
- **System:** 7 - 4,100 gallon tanks
- **Tank Size:** Diameter - 8 feet; Height - 10 feet
- **Total Estimated Budget:** \$133,589

Item	Cost	Request
Temporary Facilities: Pedestrian mitigations, construction supervision, general clean-up	\$3,500	\$3,500
Rotoplas 4,100 Gallon Above Ground 1.2 SG Vertical Water Tank, 102" dia x 130" height, 714 lbs, 22" lid with 4" vent, BLACK (seven in quantity)	\$14,426.69	\$14,426.69
Estimated Shipping Charge, Subject to Change at Time of Purchase. Tank Freight *One truck load	\$2,100.00	\$2,100.00
RainFlo MHP75A Automatic Pump, 115V/60Hz 4-stage 3/4 HP centrifugal surface pump, stainless steel 304 water end and RainFlo PC115 Controller, 1" FPT Suction inlet and 1" FPT outlet.	\$390.96	\$390.96
GRAF Stainless Steel Floating Extractor- 1.25" Coarse screen with Non return Valve and 7" Suction Hose	\$161.96	\$161.96
Graf Optimax filter external Pedestrian. High efficiency, self-cleaning, below ground rainwater filtration system.	\$539.96	\$539.96
Hydrodynamic Separator	\$12,256.25	\$12,256.25
6" Fernco Rubber Pipe Coupling with Hose clamps (two in quantity)	\$35.62	\$35.62
4" Fernco Rubber Pipe Coupling with Hose clamps	\$7.88	\$7.88
4" Multi Tite Gasket (two in quantity)	\$11.82	\$11.82
1" MNPT to 1" hose barb, polypropylene (two in quantity)	\$6.21	\$6.21
Stainless Steel Hose Clamp, SAE Size 20, .5" x .75" to 1.75" (three in quantity)	\$7.97	\$7.97
Tigerflex 1" Suction Hose (seven in quantity)	\$43.79	\$43.79
Accessories Shipping Costs	\$100	\$100
Valves, Flanges, and Fittings	\$5,000	\$5,000
Site Signage	\$1,000	\$0
Removal of chain link fence and tarp	\$1,500	\$0
Labor - tank, pump, and piping installation	\$60,000	\$60,000
Labor - set-up program controls	\$5,000	\$5,000
Soft Costs (Architects, Engineers, Plan Check, Inspections, and Project Management)	\$10,000	\$10,000
Electrical - power to pumps, controls, power outlet, control wiring	\$10,000	\$5,000
Contingency	\$7,500	\$7,500
Total:	\$133,589	\$126,089



Location: Parking Structure 9 Level 1 Bike Storage.

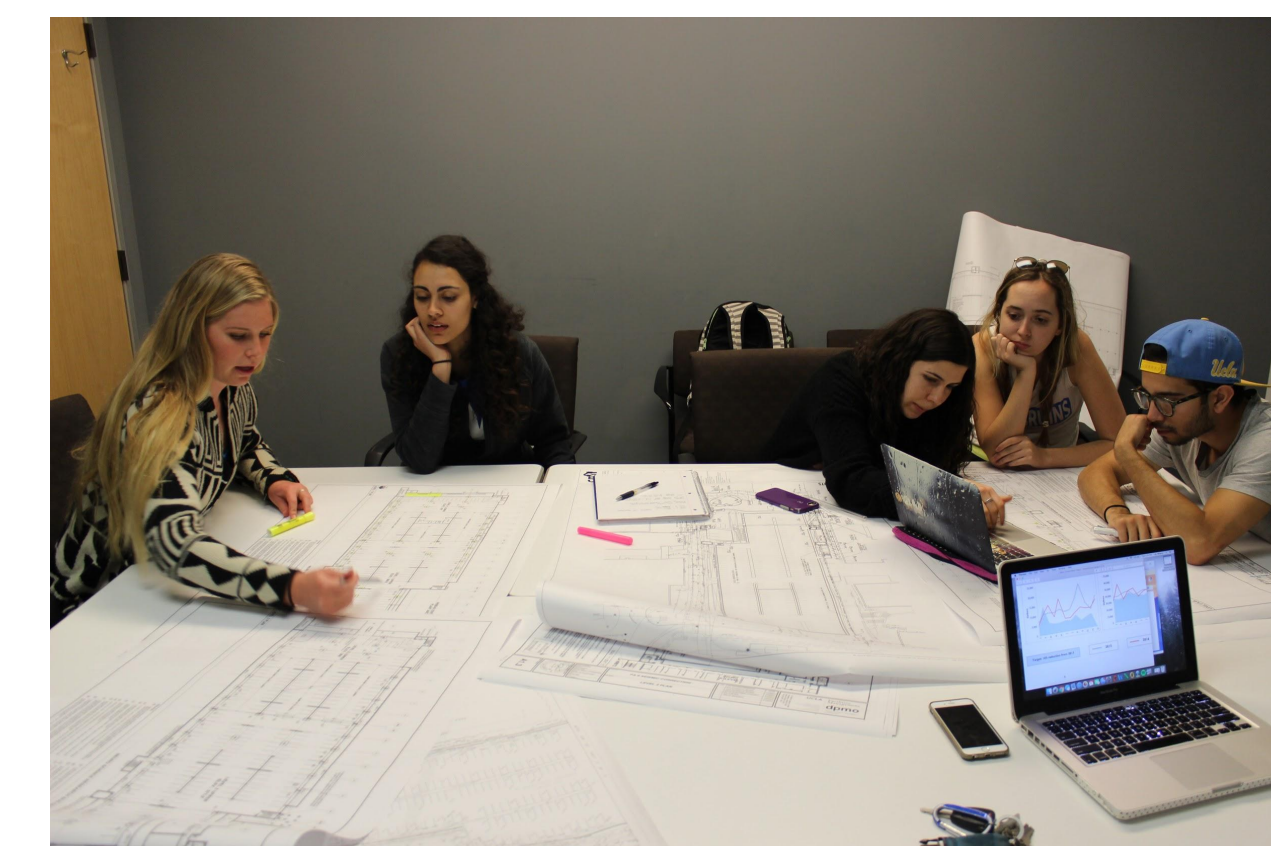


Screenshot of AutoCAD drawings of system design.

Finalized budget for 7 tank system requested from The Green Initiative Fund.

Impact

- **Water Savings:** 240,000 gallons per year
- **Cost Savings:** \$70,000 over 25-year lifespan of system
- **Education and Outreach:**
 - Signage on-site and near parking structure encouraging further water conservation projects and student involvement
 - Outline project process to aid in future water conservation projects



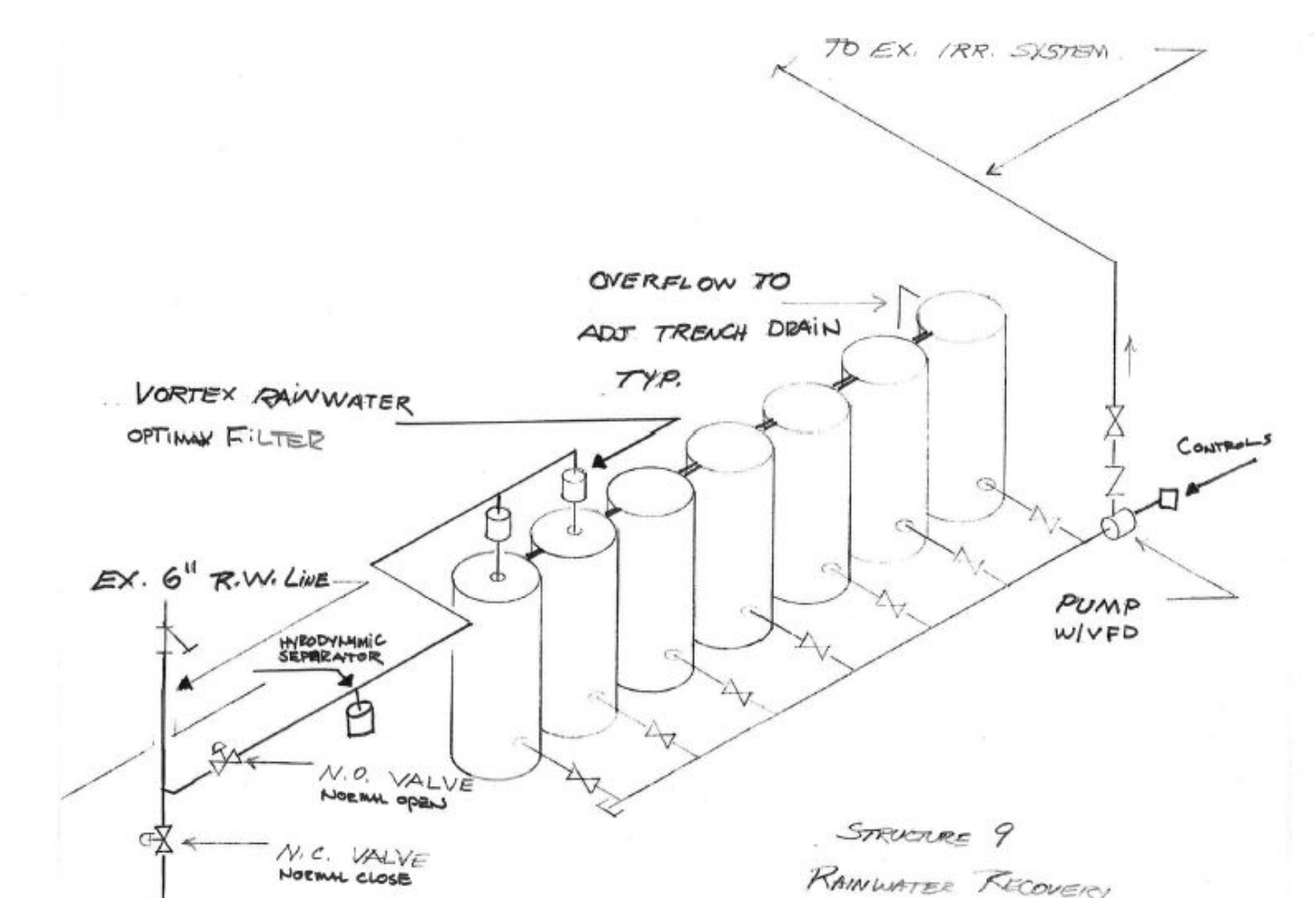
The team discussing plans for the cistern design and location.



The team with stakeholder Nurit Katz after their Midterm Presentation.

Progress

- **Funding:** Received \$86,856.95 from UCLA's The Green Initiative Fund for system design and implementation
- **Next Steps:** Finalize design and begin construction
- **Partners:** Facilities Management, Transportation Services, Environmental Health and Safety, Capital Programs
- **Estimated system completion date:** October 2017
- **Future Plans:**
 - Grand Opening
 - Art Student Outreach
 - Signage & Publicity



Final hand drawn system design by Thomas Lukas, Assistant Director of Facilities Management.