UT Dallas Bioengineering and Sciences Building Water Conservation Trifecta

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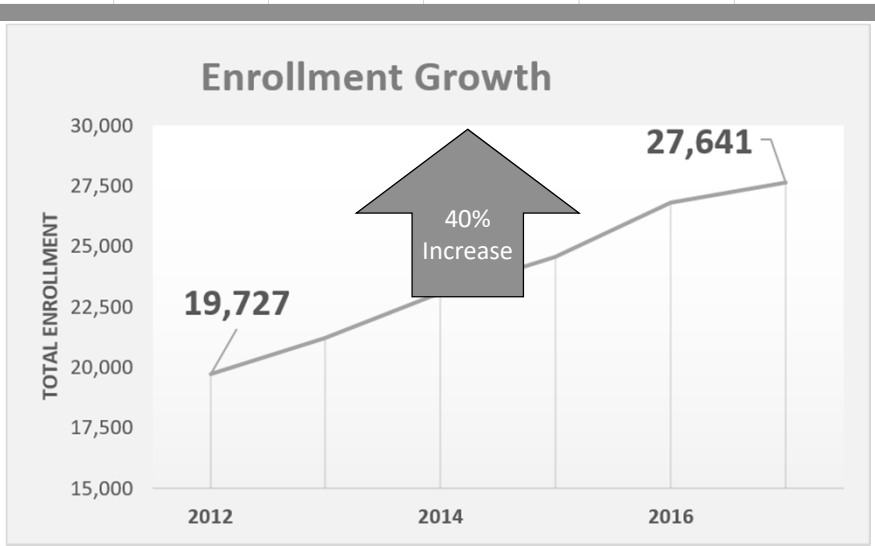
About UTD

- Founded in 1969
- Rooted in Research
- 8 schools
  141 programs
- 28,000 Students
- STEM Focused
- Young, Geeky, and Innovative!

5 Years of Growth



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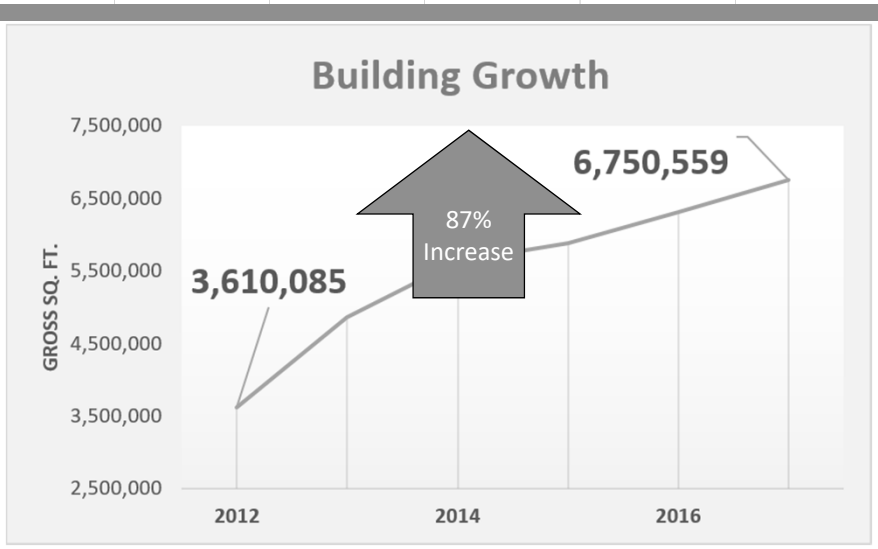

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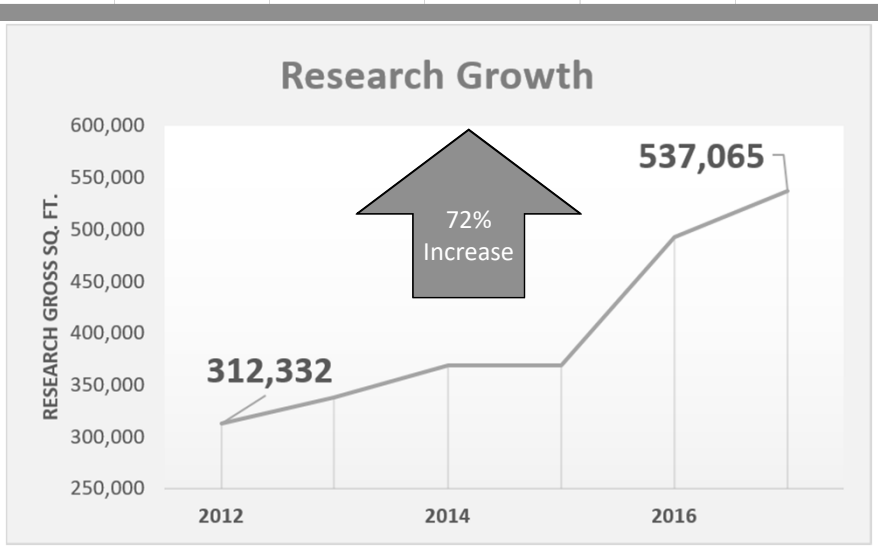

Bioengineering and Sciences Building (BSB) Project Overview

- **Size:** 222,651 gross square feet
- **Project Cost:** $109,000,000
- **Project Completed:** Fall 2015
- **Research Programs:** Chemistry, Bioengineering, Neuroscience, Biomedical Science

About Bioengineering and Sciences Building

- **72 Research Labs**
- 690 work stations
- 142 offices
- 12 conference rooms
- 8 Integrated collaboration areas
- Connections to sister facility (NSERL)

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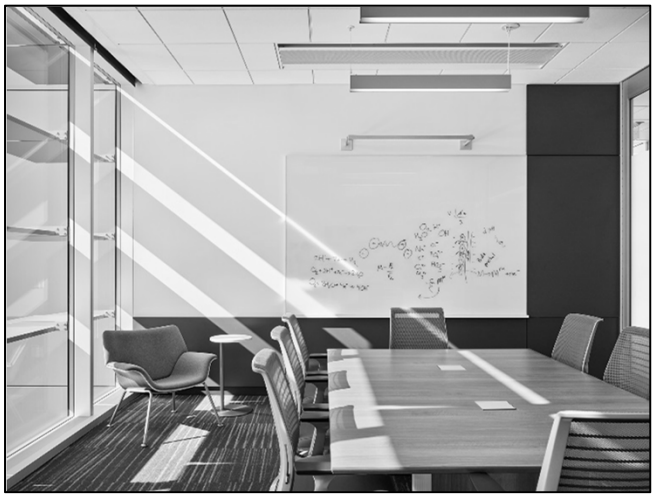

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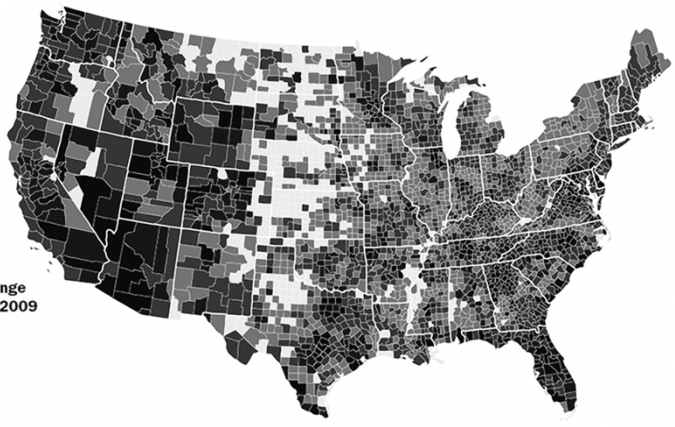
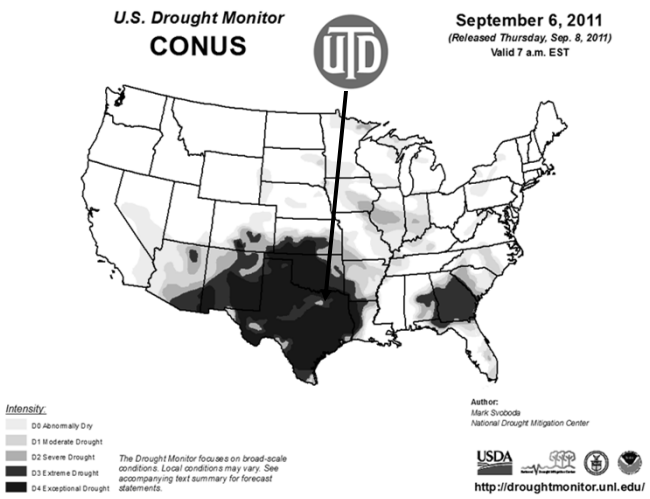
Project Analysis and Design

ZGF Architects LLP

The Need to Do More With Less Water



Regional Drought Calls for Innovation in Water Conservation



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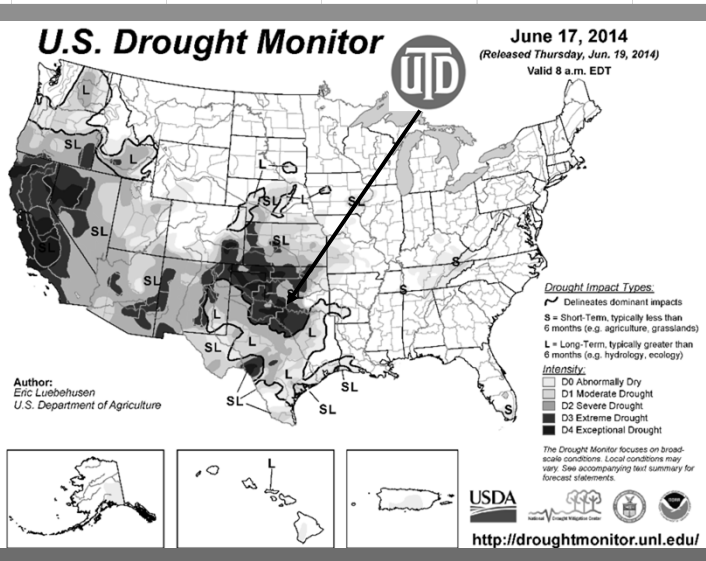

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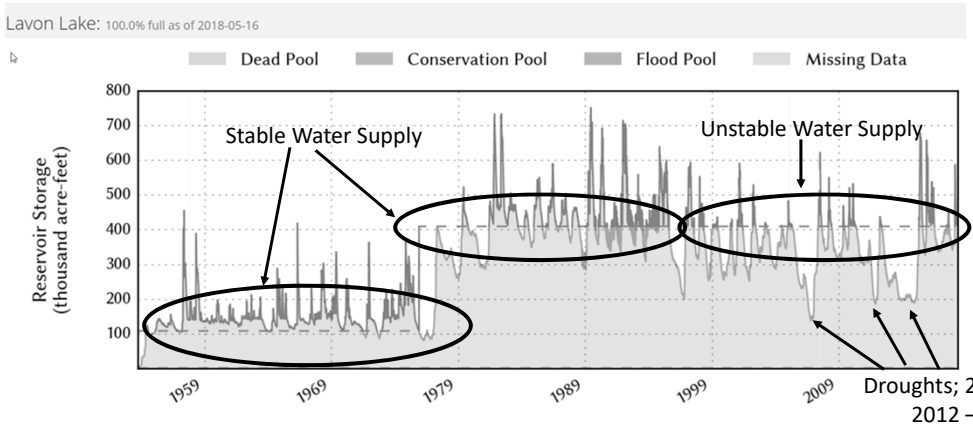
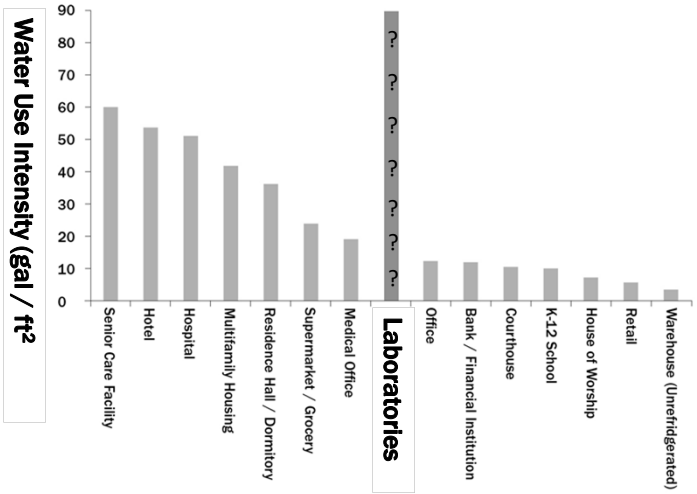


CS1

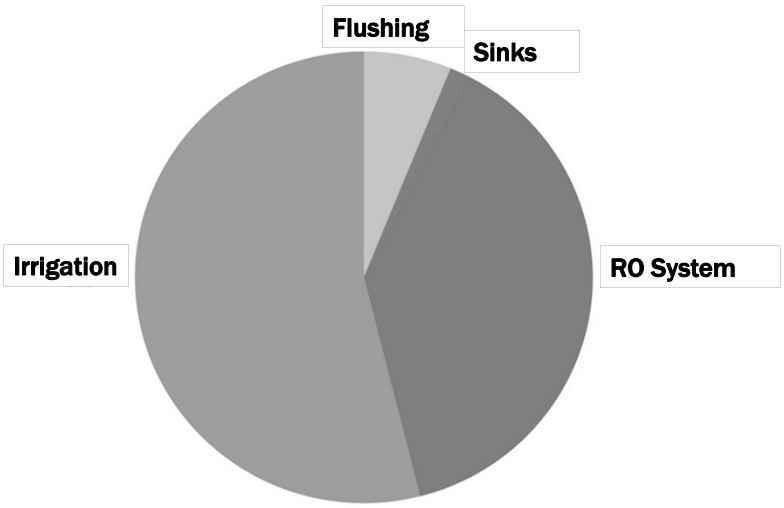
Laboratory Water Use



Slide 18

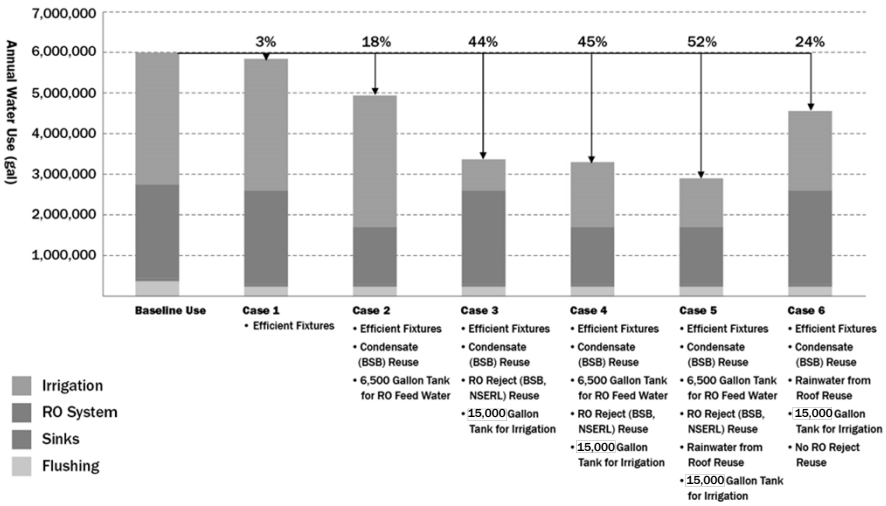
CS1 Castillo, Shara, 6/26/2018

Projected Water Use



Analysis by ZGF Architects LLP

Water Analysis



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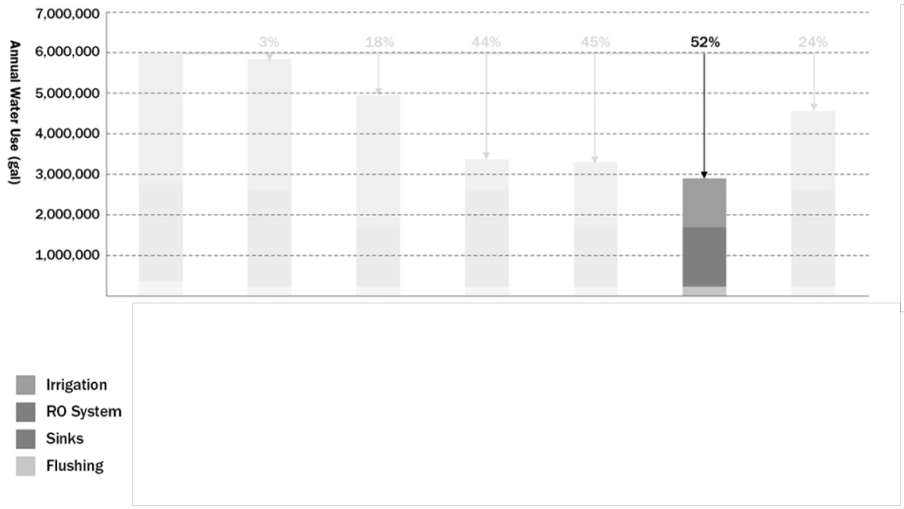

Case 5

- Efficient Fixtures
- Condensate (BSB) Reuse
- 6,500 Gallon Tank
- for RO Feed Water
- RO Reject (BSB,
- NSERL) Reuse
- Rainwater from Roof Reuse
- 15,000 Gallon Tank for Irrigation

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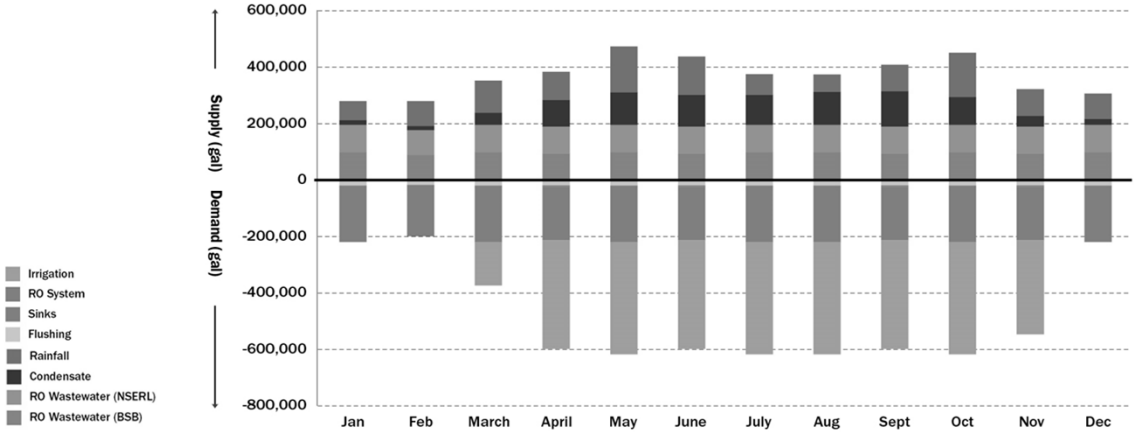
Water Analysis



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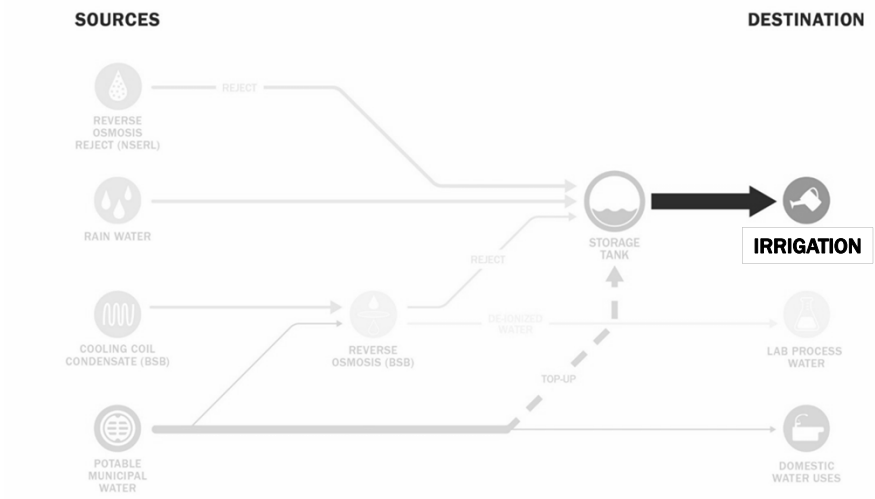
System Design



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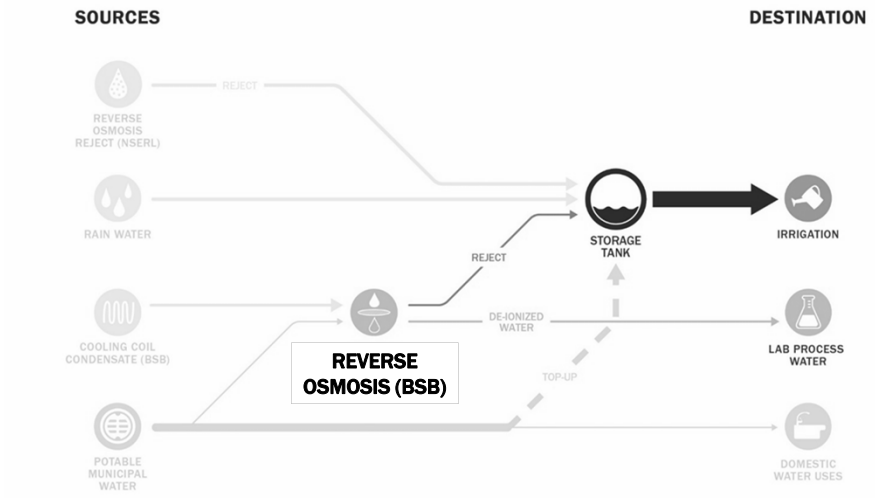

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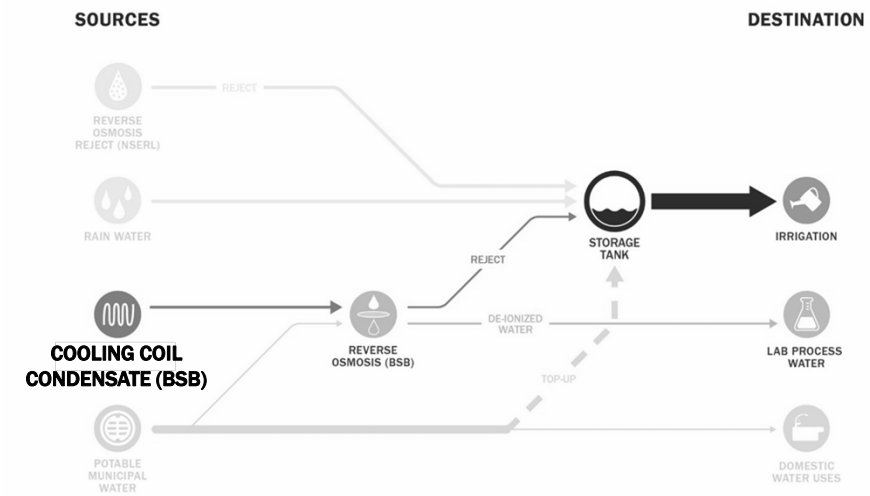

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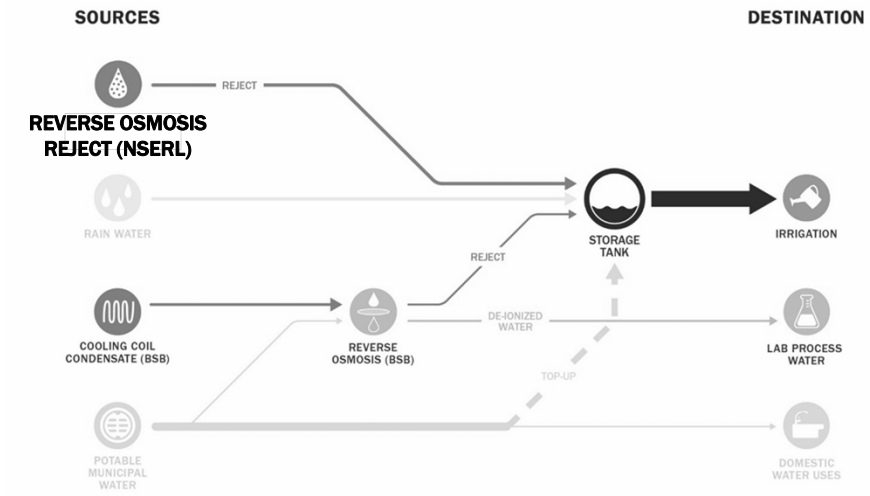

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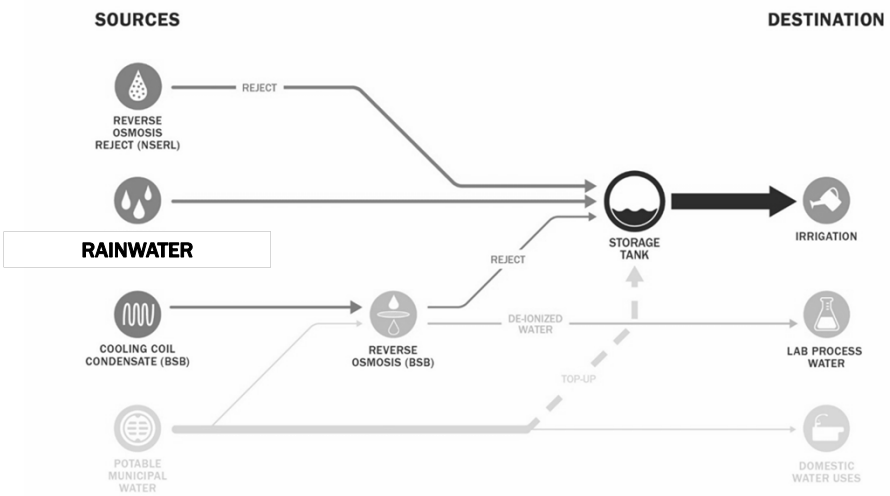

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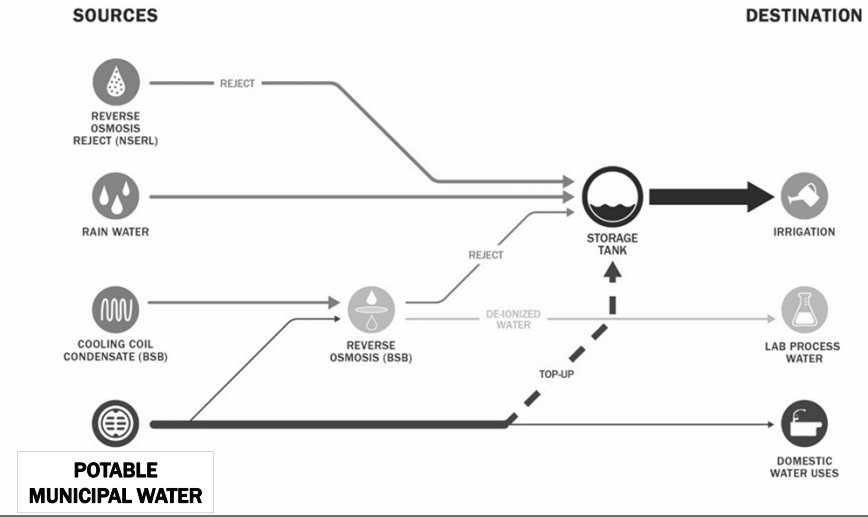
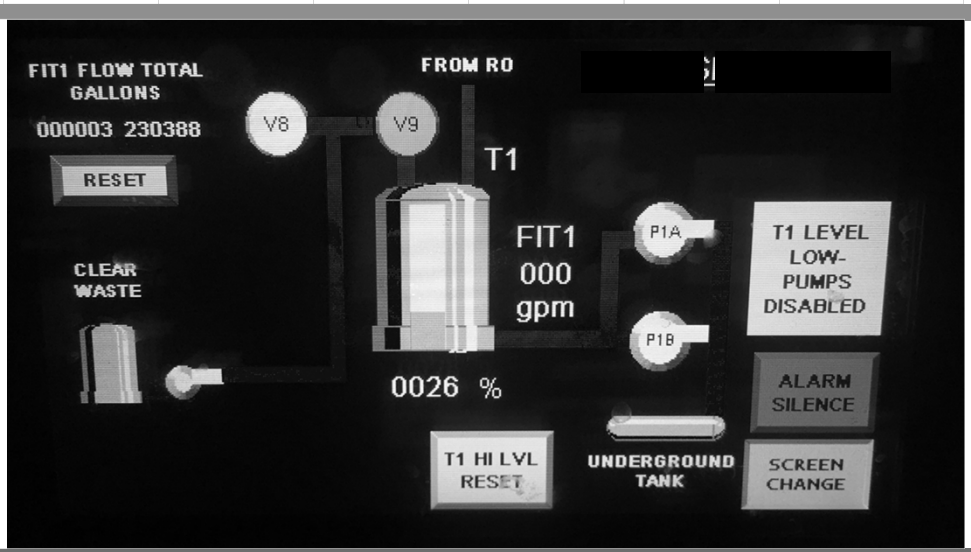


Construction, Operation, and Equipment

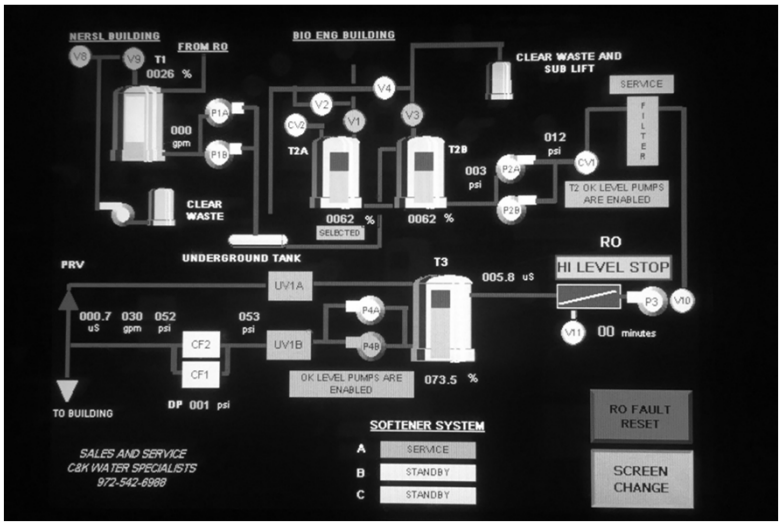
Kevin Masten
Director of Research Facilities Operations

NSERL RO Control Panel



BSB 15,000 Gallon Cistern

BSB Control Panel



BSB RO Controller, Membranes, and Storage

BSB Softener and Brine Tank

BSB Metering

Numbers and Outcomes

- 2.5 million gallons saved from RO capture
- Metering installation for other components in progress.
- Double value by capturing waste for reuse.
- Water costs have doubled over the last decade. Savings will magnify as cost of water rises.
- ROI will not justify project alone. Consider issues of regional importance and campus resiliency when planning.

A Solution That Makes Sense for UTD

Questions?