Rancho Cucamonga
Project Description

- Cucamonga Valley Water District in Rancho Cucamonga, CA – Frontier Project
- 0.7 acre development site
- Construction includes
  - 14,400 S.F. building
    - Office Space
    - Meeting Facilities
    - Public Demonstration Space
  - Courtyards
  - Walkways & Sidewalks
  - Landscaped Areas
Project Drivers

- Water District Goals
  - Sustainable Approach
  - Water Conservation
  - Public Demonstration Space
  - LEED Platinum

- Hydrologic Condition of Concern
  - Does not discharge directly to the MS4
  - Post-development volume must equal pre-development volume for 1-year, 2-year and 5 year frequency storms
A Sustainable Approach

- **Water Harvesting**
  - Meet Water District Goals of:
    - Water Conservation
    - Groundwater Recharge
  - Meet Irrigation Needs
  - Runoff Reductions
  - LEED Credits 6.1

- **Low Impact Development**
  - Runoff Reductions
  - Pollutant Removal
  - LEED Credits 6.1 & 6.2
LID & Water Harvesting Measures

- Green Roof
- Porous Pavement
- Decomposed Granite
- Bioretention/Rain Garden
- Cistern/Rain Tank (Water Harvesting)
- Underground Infiltration Device
Green Roof
Green Roof

• Specifications
  • Extensive (18 inches of soil media)
  • Partial roof coverage
  • Bitumen waterproof membrane
  • Plants: Aloe, Hesperaloe
  • Soil mix: 25% topsoil, 25% compost, 50% sand
  • Green roof area: 55% reduction in annual runoff

• Costs
  • $50,000 (1,614 sf: $30 per square foot)
Porous Concrete

- Porous Concrete selected due to: LEED Heat Island Effect Credit
- Runoff Coefficient 0.1
- Cost - $50,000 (1300 S.F. - $38 per square foot)
Decomposed Granite Walkways

- Runoff Coefficient – 0.5
- Depth of 1.5 inches
- Cost $30,000 (4235 sq ft. $7 per square foot)
Bioretention/RainGarden

- Specifications
  - 8 inches of soil media
  - Plants: Lamb’s Ears, Senecio, Echeveria, Blue Fescue
  - Soil mix: 50% sand, 20% compost, 30% soil
  - Under drain

- Costs
  - $12 per square foot
Cistern/ Rain Tank

- Xeres
- Capacity 1,600 gallons
- Irrigation needs
- Cost: $40,000
Underground Infiltration Device

Atlantis® Infiltration Tank
Atlantis® Infiltration Tank

- 100% Pollutant Removal
- 90% Void Space
  - Smaller footprint than aggregate trenches
- Capacity: 7,200 Cubic Feet (6,164 cf = 5 year event Pre/Post)
- Cost: $98,000
Lessons Learned

- Water District’s “sustainable” approach provided an opportunity for LID & water harvesting
- Advantages of LID & water harvesting must be presented early in the design process
- Early coordination in the site design process:
  - Project proponent
  - Planners
  - Architects
  - Engineers
  - Landscape Architects
- Coordination with architects & contractor throughout the construction process
- LID & Water Harvesting integrated to:
  - Meet water quality requirements
  - Meet hydromodification requirements
  - Assist in meeting irrigation needs and groundwater recharge
Questions?

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