

The Basics of Water Reuse Systems

What construction codes apply?

What should I look for during review and inspection?

What does the Plumbing Code say?

- Prior editions of the Uniform Plumbing Code contained appendix chapters only
 - Graywater systems (untreated wastewater from bathing, wash basins, laundry) to serve underground irrigation in single family homes
 - Reclaimed water (wastewater treated by a public agency) to serve toilets and urinals in non-residential buildings
- Very limiting! Appendix chapters not adopted by Washington State

What does the Plumbing Code say?

- 2009 UPC moved the previous appendix chapters to a new Chapter 16
 - The State of Washington amended the chapter to separate rainwater harvesting from other water reuse systems.
- Chapter 3 does allow local jurisdiction review for approval of alternate methods and materials
 - While Chapter 16 provides more detail, various types of systems may require review for approval as an alternate method.
 - The basic concepts are the same.

What can we expect in the 2009 UPC?

- The UPC authors formed a Graywater and Water Reuse task group to propose modifications to Chapter 16
 - Now includes harvested rainwater for both residential and non-residential structures
 - Also includes provisions regarding manufactured graywater systems for recycling wastewater to serve toilets in residences
- Implementation statewide July 1, 2010

The Basics – What should be considered by the jurisdiction?

- Tracking!
 - Water purveyors need to know where such systems are being installed.
 - May require “*premise isolation*”
 - This does not waive point-of-use backflow protection of the water distribution system of the building
 - This issue is being reviewed by the Washington State Department of Health Drinking Water Section

The Basics – What should be considered by the jurisdiction?

- Review plans and diagrams
- Appropriate backflow protection
- Labeling of piping
 - Identify the contents of the nonpotable distribution system & the potable system
 - Identify drainage system also to avoid improper connection during remodel or maintenance

The Basics – What should be considered by the jurisdiction?

- Room identification
 - Also, fixture identification where necessary
- Filtering methods
 - Manufacturer's maintenance instructions
 - Engineered design
- Storage capacity and usage for graywater systems
 - Manufacturer's sizing criteria?
 - Engineering?

The Basics – What should be considered by the jurisdiction?

- Make sure that the rainwater harvesting collection process does not adversely affect the roof drainage
 - Overflow requirements?
- GPM flow rates for the nonpotable distribution system adequate to serve the intended fixtures?

Resources

- Washington State Building Code Council
 - <https://fortress.wa.gov/ga/apps/sbcc/default.aspx>
 - State adopted plumbing code – Chapter 16
- ICC International Green Construction Code
 - Published by the *International Code Council*
- IAPMO Green Plumbing & Mechanical Code
 - Published by the *International Association of Plumbing & Mechanical Officials*

QUESTIONS?

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<http://www.kingcounty.gov/healthservices/health/ehs/plumbing.aspx>