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CREATING SUSTAINABLE COMMUNITIES

Water Efficient Technology – Course Outline

Develop Water Efficient Technology Measures

Unit Description

This unit specifies the competency required to develop skills and knowledge in alternative water sources for urban application.

Although their collection and application can be relatively simple, alternative water sources can involve complex mechanical, physical and biological processes that need to be accounted for in developing any type of alternative water system. Failure to account for such processes can create health and safety risks or result in mechanical failures to equipment.

A thorough understanding of the proper collection, conveyance, storage and use of any alternative water source is paramount in its safe and efficient application.

Work associated with this unit is undertaken within the plumbing and services sector in accordance with relevant US Standards.

It is a prerequisite that all participants seeking accreditation of the Course in GreenPlumbers Environmental Solutions are required to be licensed as and/or employed by a plumbing contractor, or a governmental employee classified as a plumber prior to commencing this unit.

Section 1 - Identifying Alternative Water Sources for Urban Re-use

- 1.1 Select different sources of water fit for different purposes
- 1.2 Identify potential hazards associated with alternative water sources

Section 2 - Rainwater Harvesting



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- 2.1 Describe the effective installation and use of rainwater
- 2.2 Describe the harvesting of rainwater
- 2.3 Calculate rainwater quantities and potential harvesting
- 2.4 Identify the factors, which determine appropriate use of rainwater tanks
- 2.5 Identify possible urban rainwater applications
- 2.6 Determine the problems of rainwater quality with all harvesting applications
- 2.7 Select a range of rainwater utilization

Section 3 – Graywater

- 3.1 Specify suitable sources of graywater for urban reuse
- 3.2 Outline the potential benefits associated with graywater
- 3.3 Outline the potential risks associated with graywater
- 3.4 Identify the system components and best management practices associated with graywater
- 3.5 Identify major plumbing code provisions
- 3.6 Outline the use of graywater for toilet & urinal flushing
- 3.7 Outline the use of graywater for landscape irrigation
- 3.8 Discuss the availability of graywater products

Section 4 - HVAC Condensate Recovery

- 4.1 Describe the process of HVAC Condensate Recovery
- 4.2 Identify the variables and calculate HVAC Condensate recovery potential
- 4.3 Identify possible urban HVAC Condensation Applications



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4.4 Determine the Benefits and Risks Associated with HVAC Condensate Recovery

4.5 Tank Sizing

Section 5 – Cooling Tower Efficiencies & Blowdown Recovery

5.1 Define Key Terms

5.2 Identify Treatment Methods for Enhancing Cooling Tower Efficiencies

5.3 Identify Methods for Evaluating Non-Conventional Approaches to Water Treatment

5.4 Identify Possible Opportunities for Reuse of Cooling Tower Water

Section 6 – On-Site Urban Waste Water Treatment Systems

6.1 Identify Components of a Conventional Onsite Wastewater Treatment System

6.2 Identify Key Indicators in Selecting an Onsite System

6.3 Identify Alternative Onsite Systems

6.4 Identify Aspects of Site Planning, Permitting and Compliance

Section 7 – Municipal Recycled Water

7.1 Define Municipal Recycled Water

7.2 Identify Uses for Municipal Recycled Water

Section 8 – Selecting Water Treatment Products

8.1 Identify Treatment Products & Applicability to Different Water Sources

8.2 Factors to Consider in Selecting Water Treatment Products

8.3 Identify Decision making Processes