

## Water and Waste: Conservation and Recycling and Zero Waste

As with energy, the approach with water in Manchester, will be to utilize to the fullest local water flows. With aggressive water capture and recycling how much of Manchester's water demand can be met through rainwater capture? The triple mix of residential, commercial and industrial will allow optimization of grey water for non-potable purposes.

Calgary has already demonstrated success in reducing per capita water consumption. With universal use of water metering, improved architectural design and industrial process design the per capita consumption can be reduced even further.

Research is ongoing for Green roof applications and design suitable to Calgary's dry climate. In Manchester district green roofs will be a common feature. Chicago has been very successful in establishing green roofs throughout the city. Montreal's Lulu Farms has demonstrated the market viability of a substantial urban farming enterprise using green roofs.

University of British Columbia's Sustainability Building and the Bullit Building in Seattle have demonstrated the capacity to meet all water demand on-site through rainwater capture and recycling. Though Calgary is a much drier climate than the west coast, rainwater capture and recycling will significantly reduce the cost of water delivery infrastructure to Manchester.

The water strategy will also employ Low Impact Development to reduce runoff and hard infrastructure requirements.

The goal of Manchester district will be zero waste to landfill by diversion of solid waste to industrial processes (energy production and materials) or to recycling. Hammerby-Sjostad, Stockholm is one example of a district-wide system that supports solid waste collection and use. Organic waste will be eliminated through a comprehensive composting program. Heat energy, nutrients and water will be captured from the liquid waste stream and reused and recycled in the district. Vancouver's Olympic Village and Victoria's Docksideroo have pioneered such systems.

Urban agriculture will employ a combination of rooftop hydroponic production, community gardens and commercial urban farming to optimize the amount of food consumed in Manchester that will be grown locally.