The Benefits of Rainwater Harvesting

Each potential project has unique characteristics or decision drivers, but a list of some of the various benefits of rainwater harvesting which may influence the decision to incorporate or it into your designs and construction are as follows:

Qualitative Advantages:

1) Rainwater is one of the purest sources of water – distilled by nature.
2) Rainwater is naturally softened, clear, and odorless.
3) Because it does not contain dissolved minerals as does groundwater, it is ideal for bathing, washing hair, drinking, etc.
4) Because it does not contain dissolved minerals it is 'easy' on pipes, eliminating scaling or mineral deposits inside plumbing systems. This is particularly helpful where evaporative cooling systems are utilized.
5) Because it does not contain chlorine, or chlorine disinfectant residues and byproducts, it is ideal for drinking and watering plants and vegetation.
6) For people restricting sodium intake due to health concerns, rainwater does not contain the very high sodium levels commonly associated with utility treated water or home softeners. Plants and vegetation also like this factor!
7) Not only does rainwater not come into contact with soil and rocks where it can pick up dissolved minerals (arsenic, radon, copper), but similarly it is not subject to manmade pollutants (pesticides, gasoline byproducts) commonly discharged into streams and rivers which then contaminate our groundwater.
8) Quality is controlled by you, the collector, not by a remote or unresponsive centralized utility. With this self-sufficiency advantage comes responsibility for maintaining the system, but this requires minimal effort.

Note: Rainwater can be negatively influenced if it is collected in proximity to heavy industrialization, spraying of agricultural insecticides or large urban areas. Sources removed from these influences will be of highest quality.

Environmental Advantages:

1) Rainwater is a sustainable source of pure water.
2) Other more traditional water sources, i.e. groundwater, are conserved.
3) The considerable energy expended to extract, pump, purify and deliver water from traditional centralized or groundwater sources is conserved.
4) Local erosion, flooding and runoff, which can result from storm water falling on impervious cover such as pavement and roofs, are all reduced.
5) Damage to local environments is greatly reduced if storm water runoff, often laden with contaminates from roadways or soil, is captured as useful rainwater instead of becoming a source of additional pollution and contamination when expelled to local rivers or waterways.
6) When designed as an integral component of a structure (column, wall, pool, subfloor tank, etc.), water storage tanks can be an attractive architectural feature, while serving as an exceptional thermal mass to dissipate heat and

cool inhabited areas. This conserves electricity, and can help provide a more natural 'open air' living environment.

Economic Advantages:

1) Rainwater is free, and the systems to collect it are economical to install, especially so when incorporated into the original design and construction.
2) Water utility rates are escalating rapidly all around the world. In the USA water rates in 2003 increased on average by 4%, but 8 major cities had double digit increases, including Boston, Massachusetts (24.4%), New York (20.2%) and Los Angeles, California (12.3%).
3) Besides the problem of rapidly increasing rates, in many parts of the country, water utilities' record of delivering water reliably and of good quality has been repeatedly tarnished. Some of the worst water is supplied in our national capital of Washington D.C. where lead levels are excessive.
4) Because rainwater is soft, the amount of detergents used for laundry, not to mention the soaps used for everyday cleaning, can be significantly reduced. Soap scums and hardness deposits disappear.
5) The expense of and pollution from home water softeners can be avoided.
6) The repair and maintenance of water heaters and pipes will be greatly reduced as they will be free of mineral deposits.
7) Particularly for homes or businesses situated in more remote areas, at considerable distance from existing public or private water distribution systems, a local rainwater harvesting system could be economically advantageous. No more trucking of water!
8) If legal and political battles over increasingly scarce water sources can be avoided, or at least mitigated, then significant economic advantage has been gained for society as well as those immediately impacted.

Political Advantages:

1) The application of rain water harvesting may be more politically advantageous, not to mention more economical, when systems are installed at individual residences and businesses in the vicinity of disputed rivers and aquifers, such as is the case in Atlanta, Georgia and Tampa Bay, Florida.
2) Rainwater harvesting has the potential to permanently retire many local and regional disputes over competition for water. Examples are the 'water war' between Georgia, Alabama and Florida, where cost effective rain harvesting systems could feasibly meet a high percentage of over all demands.
3) By pioneering the introduction of rainfall harvesting, homeowners, architects and developers could win accolades from environmentalists, other local residents, and local and national governments. While counter-intuitive, possibly the only entities which may be opposed to such a solution could be the water utilities themselves!
4) The introduction of widespread rain water harvesting could reduce pressure to add new drinking water sources (dams, distribution pipes, treatment facilities) as well as storm run-off collection and treatment facilities. Thus huge capital intensive projects funded by consumers could be postponed or even entirely avoided - and the negative short and long term environmental impacts of these projects would not occur.