

The scheme developed by Buro Happold and Moriyama & Teshima has a two-fold purpose

1. to reduce the problem of flooding and,
2. to try to revitalise the Wadi.

To achieve the flood control a wide channel has been designed to cope with a 1 in 20 year storm thereby containing the water in times of flood. In conjunction with this, the current network of un-coordinated roads, utilities and dry weather flow channels is to be reorganised. This will include the undergrounding of overhead power lines, the diversion of underground utilities into dedicated corridors beside the reconstructed road system, designed to a standard that will withstand flooding.

To clean up the water entering the Wadi a series of features has been introduced. This is a natural cleaning process. There are no chemicals added to the system to help clean up the water.

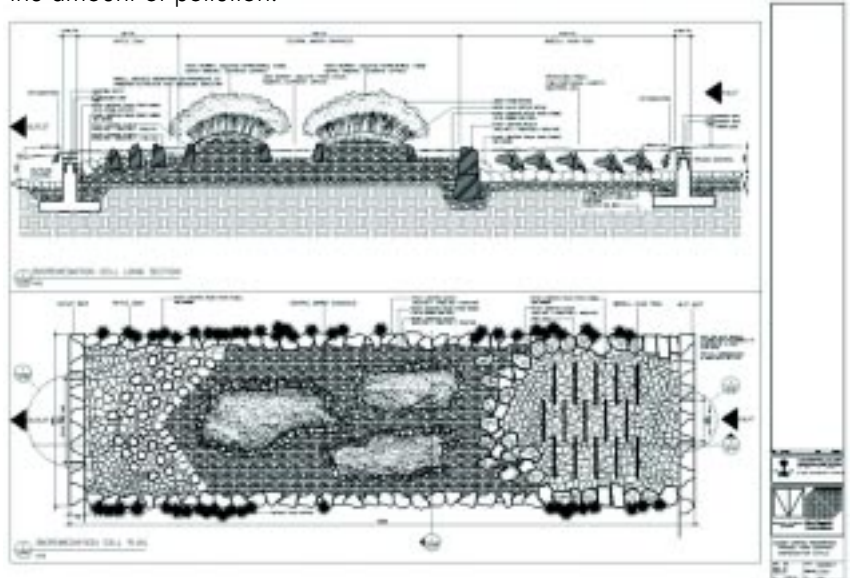
Oxygen is a prime factor in cleaning up the Wadi water as it will kill off the coliform bacteria present in the water and allow micro organisms to grow, further adding to the natural cleaning of the water. Various methods are used to achieve this

1. A series of weirs to oxygenate the water and pools with Artificial Periphyton Benthic Substrate Devices (APBS) units (that look like upside down mops) but which have a very large surface area and allow the various organisms that will feed on the pollution to grow.
2. In conjunction with these weirs, pools will be created where fish will feed on the various life forms in the water and rocks.
3. A stone lined channel to allow micro organisms to grow which will act as a part of a food chain for various other predators.

The major part of the water cleaning process is the bio-remediation plant (see below)

The water enters the system on the far right of the picture and works it way down through a series of cells (see below) to the final area where a fountain is again adding more oxygen to the system.

There are four compartments to the bio-remediation system. The cells are configured in a herring-bone arrangement. The first compartment has 22 cells and the number of cells gets progressively larger until it reaches the final cell arrangement where there are 58 cells. For the system to work efficiently the cells are designed to have the same amount of water flowing at the same time and to keep the water in the cells as long as possible. This is in order for the various parts of the cell to act on the water to reduce the amount of pollution.



The water reaches each cell over a weir; again introducing more oxygen to the water. It then passes through the APBS units and to help oxygenation at this point, air is introduced to the water by a series of pipes. It then passes into an area where there is plant life and shade which allows fish to breed and feed. It then passes through a riffle zone, which creates turbulence in the water, thereby allowing more oxygen into the system. The water outfalls over

