

CHEONGGYE-CHEON RESTORATION PROJECT AND HYDROLOGICAL CYCLE ANALYSIS

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This paper introduces the Cheonggye-cheon restoration project. The restoration project aims to revive the 600-year-old city of Seoul by recovering the historical heritage, guaranteeing safety from the deteriorated covering structures, creating the environment-friendly space, and revitalizing the neglected city centers.

When the Cheonggye-cheon restoration project is successfully completed, the capital will turn into a city friendly to both the environment and people. The project is also expected to set a new paradigm for urban management in the 21st century and contribute to renewing the image of Seoul. Once the historical site is restored, Seoul will regain its 600-year history as the capital city of Korea by turning itself into a city where the modern era is wonderfully amalgamated with tradition.

In order to analyze the hydrological cycle of the Cheonggye-cheon Watershed, we reviewed the current hydrological monitoring system, analyzed hydrometeorological data, and measured the region's streamflow on a regular basis to gather information on the flow into the upper watershed in the dry season. The annual water balance in the region was calculated using observed data such as precipitation, runoff, water supply and sewage, changes in groundwater storage. WEP, a distributed hydrological model, was also used. The results from the grid based distributed model provided more detailed information of the watershed. The spatial distributions of evapotranspiration and runoff can be analyzed from the model and utilized for the normalization plan of the urban water cycle.

Just as the ecosystem-restoration is important, the hydro-restoration for a sustainable water cycle is also essential in the river restoration because ecosystem can not be maintained without water. Consequently, the methods of assessing and improving a sustainable hydrological cycle will be important in urban river restoration.

