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## ABSTRACT

The control works pay attention to people property and life safety, and protecting ecological environment in this research. After investigation, we design the watershed management project about preventing river-walls erosion, slope land failure, and protecting the safety of surrounding ecological spheres, villages and roads. The management must be considered what kind of methods are in concern of ecology and prevention object. First, we collect and integrate the characteristics of river hydrology, channel bed materials, and surrounding ecological environment factors after discussing and analysis, design multi-iron net with pre-reinforced concrete box construction assemble on riverbank in cross section. After filling soil, the river bank will become flexible without concrete to provide natural ecology succession. Besides, we use local plants for vegetation materials to amplify the effect of green landscape. Based on safety and biological habitat, we use empty reinforced concrete box fill with stream's pebble, combine with H steel type, became an infiltrate band work in vertical session to create porous channel to help biology and prevent from vertical erosion. Yang-Chiao demonstrates River the project idea of plan design by the eco-technology. After renovates completes to the ecological environment result discussion good and bad points, impels river stream the ecological engineering control in order to help the male department to renovate the case reference for watershed management and disaster prevention.

**Key words:** Ecological engineering control, Empty reinforced concrete box, Watershed management and disaster prevention

## 一、前言

臺灣是一個多山的島嶼其平原面積約佔四分之一，山坡地及高山林地約佔全島面積的四分之三，因此地勢可謂相當陡峻，致使多數的溪流呈現源短流急之特性，東海岸的野溪則尤其甚之。此外於東海岸地區降雨多集中於颱風季，且以暴雨型態出現。又因臺灣東部位處太平洋地震帶上，加以坡地地質構脆弱，因此不僅地滑、崩塌與土石流等山地災害頻傳，更造成嚴重的生命財產損失，而且大量崩塌土體使得水道淤積，而形成野溪岸邊嚴重沖蝕與溢洪改道之情形發生，嚴重危害下游的社區部落安全。