

Hop River

Hop River was ecologically restored by Bioengineering Group, MA on a portion of about 400 meters both on the left and on the right banks. Banks have been stabilized by vegetation and coconut rolls situated on three lines as in (fig.1).



Fig.1 Development of the Hop River's left bank

Sandy banks of this river cannot give it a stable fixation if they are stabilized only at the base area, therefore scattered planting of trees as was done in the previous project are needed. What has been achieved until now regarding this project was done correctly, although nobody really knew about the sandy composition of these banks. Therefore, the banks were destroyed and they covered a large part of the coconut rolls arranged on three lines which required a different ecotechnical stabilization of Hop river water course(fig. 2).



Fig. 2 Development of the Hop River's right bank

Banks which were restored in the past must be restored ecotechnically once again using the bamboo structure pillars method. First, the bank should be drilled on several lines, then bars or rods of bamboo are to be fixed inside. A structure like a strong and flexible wooden and, in the same time, unpollutant framework (fig.3) must be formed. Bamboo rods can form a structure capable to take over the tangential and longitudinal efforts of the floods.

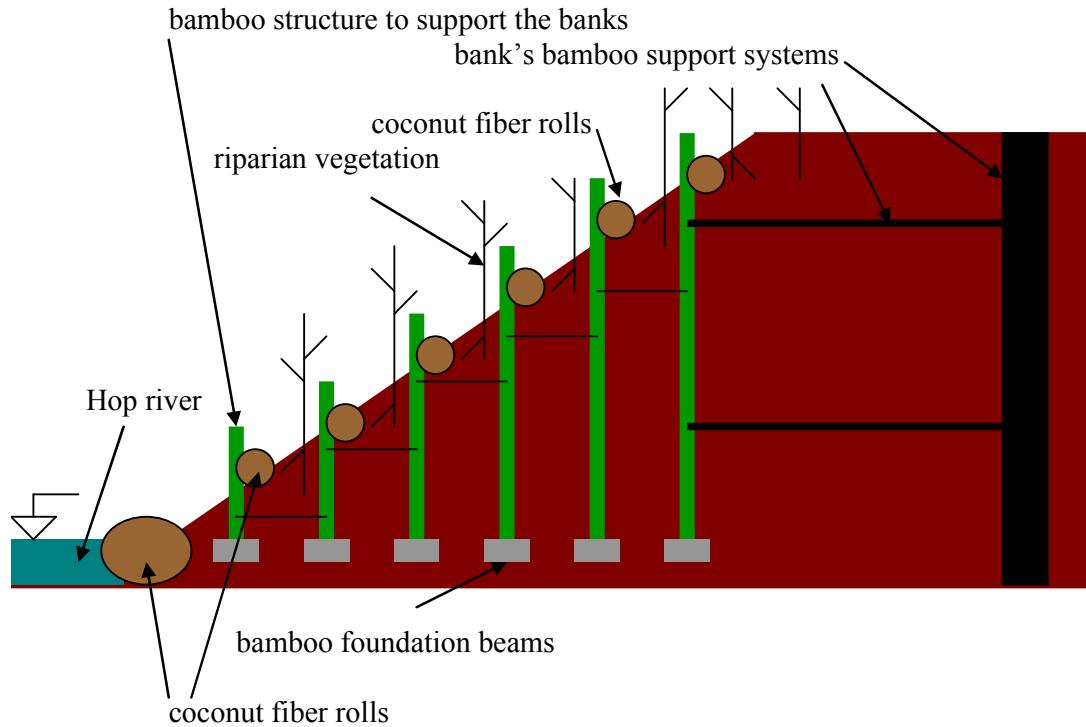


Fig.3 Ecotechnical development of Hop River's right bank - indicative schedule

Sectors of bamboo beams that come out of the ground support, on a side, the coconut fiber rolls and, on the other side, they support riparian vegetation planted in line on the entire length of the study sector (fig.3). Besides banks supporting, coconut fiber rolls stop fine particles of ground from sliding towards the Hop river water and redirect storm water to the edges of the studied sector exactly like drains.(fig.4).

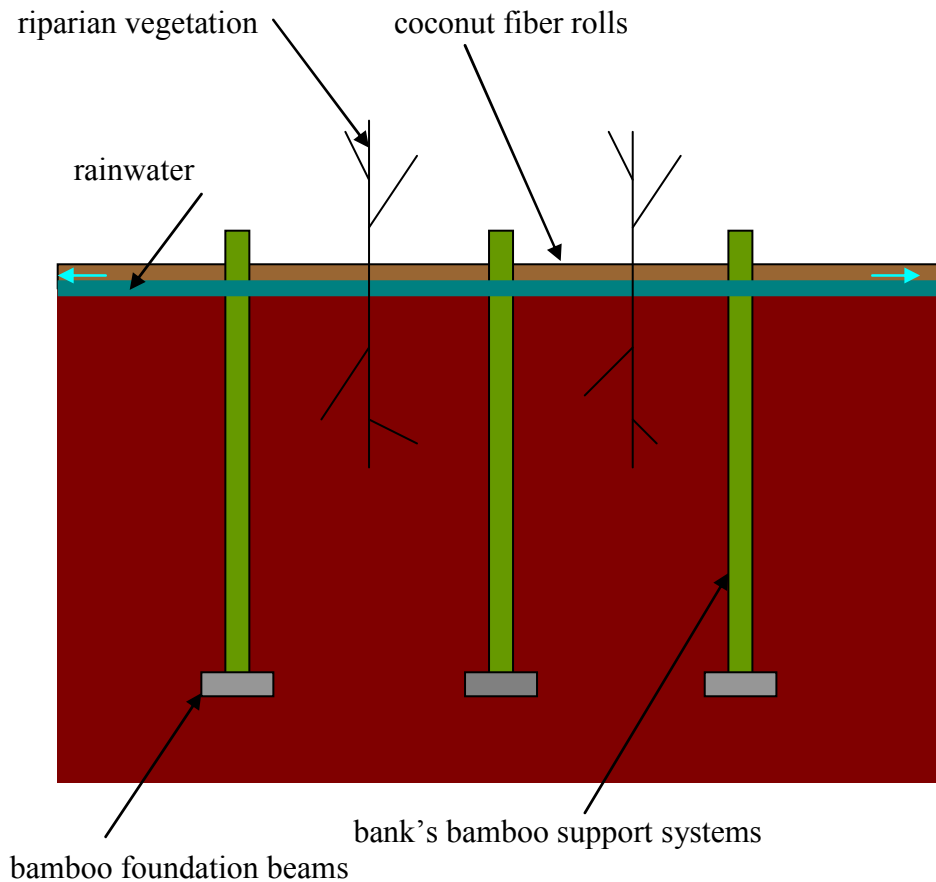


Fig. 4 Functional aspect of coconut fiber rolls – indicative schedule

Also, the coconut fiber rolls absorb and a large amount of polluted organic substances coming from the slopes resulting into a useful stopping of waterways pollution. Local riparian herbaceous and woody vegetation planted in order to sustain the banks (fig.4) has great possibilities of development and normal living due to the bamboo support system and coconut fiber rolls.

Normal development of riparian vegetation brings a greater stability to the banks and a larger variety for the aquatic ecosystem biodiversity of the Hop River; in fact, this is the company's aim. This represents a solution to locally restore the Hop River where there are many banks affected of land subsidence. There are many polluted, channeled rivers having their banks destroyed around the world including the most powerful country in the world USA, so we need to get involved, to restore the water courses more seriously and, therefore, this area must have a broadly support of the Governments of the countries and civil society.

Providence river

A totally concreting of this river has led to an acute pollution and destruction of the lotic biodiversity almost entirely(fig.1).



Fig. 1 Providence river

This river may be given an organic design but a deep ecological reconstruction leading to a functioning local ecosystem cannot be realised. Any development on this river is welcome for those who really want an ecological restoration of the watercourse.

For a portion of several hundred meters to the first bridge (fig.2) Providence River may be ecologically restored by building a white rectangular meander bed endowed with a herbaceous and woody riparian zone(fig.3).



Fig. 2 Providence river

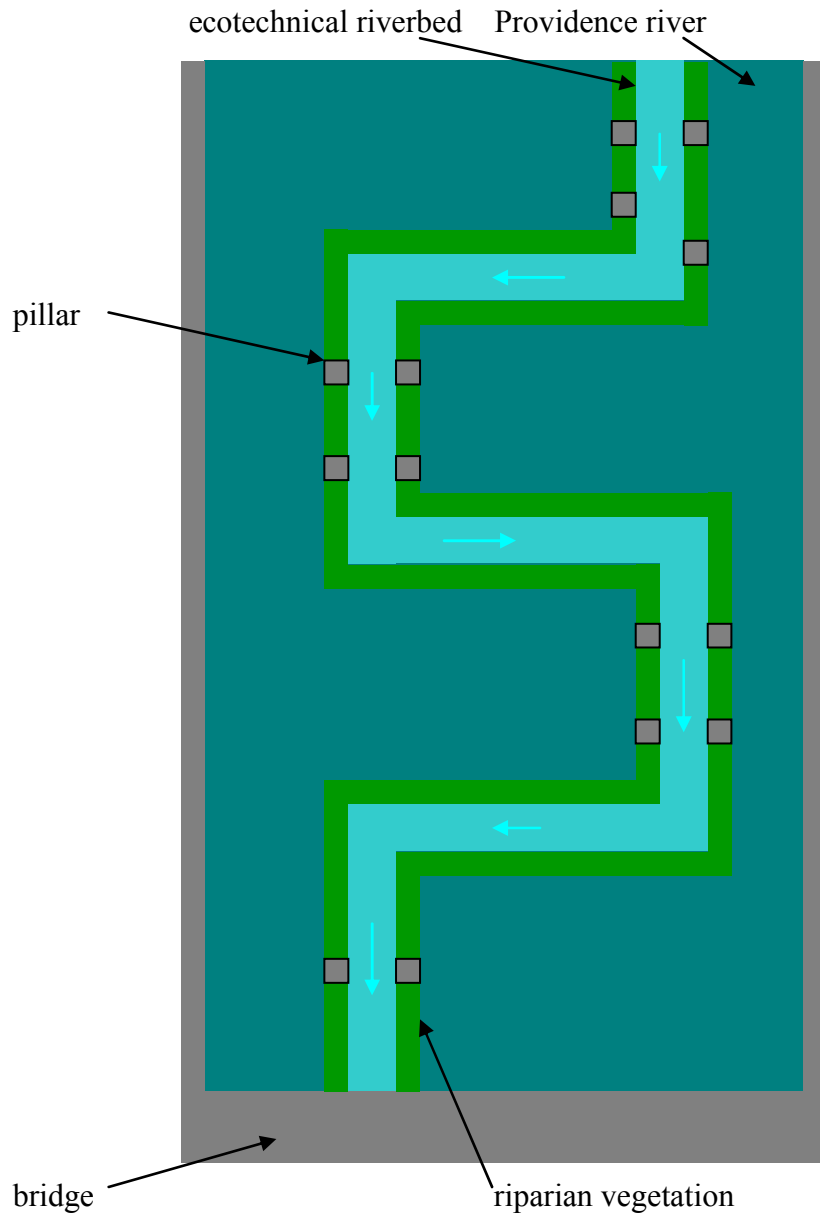


Fig. 3 Riverbed meander - indicative schedule

This rectangular bed should be made of treated bamboo for not being eroded by water. Water on this a river bed comes from Providence River by collecting water from upstream sector which is to be ecotechnically rebuilt (fig 4).

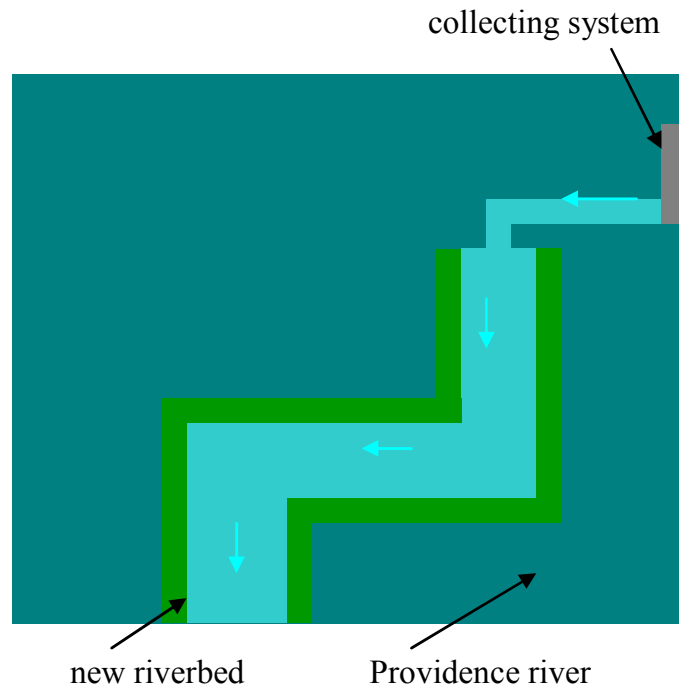


Fig.4 Collecting water - indicative schedule

Riverbed establishment will be made using pillars fixed into the riverbed. (fig.5).

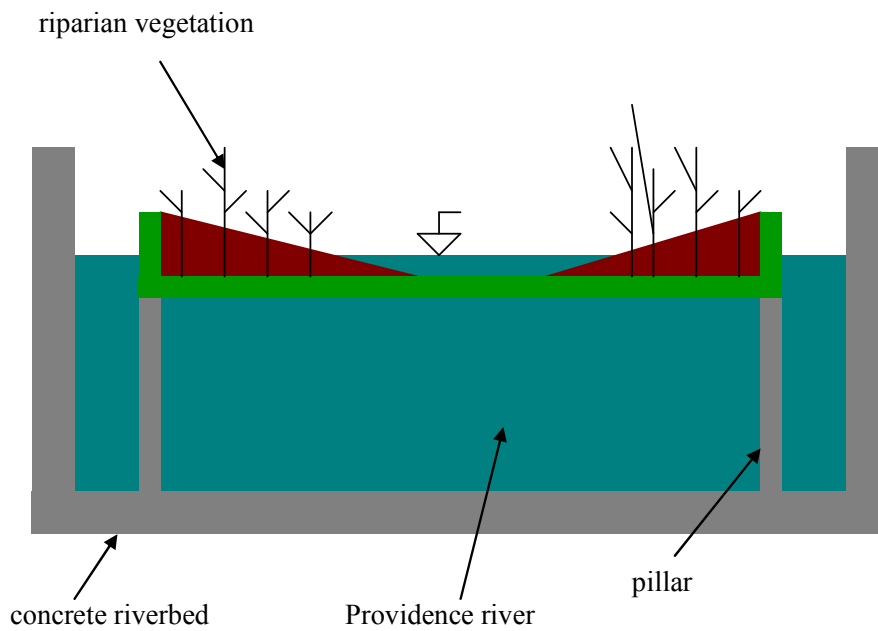


Fig. 5 The new riverbed - indicative schedule

