

Facing Work on the Surface of a Sabo Dam of Hanakawa-torrent by Neo-Natural River Reconstruction Method

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【Outline】

Hanakawa is a small torrent located at the eastern part of Ichiki-Kushikino city which is famous for Fukiage sand dune, one of the three largest sand dunes in Japan, on the west bank of Satsuma peninsula. The torrent takes its rise from the holy mountain Kanmiru and is a tributary of Gotanda river.

The project area is also famous for an old folktale of Chinese-Buddhist monk Zyofuku who had come from China in an attempt to acquire some elixir vitae by direction of Shi Huangdi. The area is very much rich in historical heritage.



【Hanakawa-torrent in past times and present】

Hanakawa-torrent was once very much affluent and the combination of riffles and pools created good habitat for a variety of living creatures such as frogs, crab, freshwater shrimp and fish. Running water was so clean that a lot of fireflies used to fly about and a variety of water creatures were flourishing.

Torrential rainfall brought by the typhoon 19th had hit the area in 1971 and its destructive power caused drastic changes to occur.

A number of slope failures took place in the water source of Mt. Kanmuri and massive muddy flows descended rampaging lower reaches. A lot of bridges were washed-out and vast areas of paddy fields were covered with thick mud and debris.

The structures and facilities had been rehabilitated and structural measures such as sabo/check dams and revetment works had been added to prevent similar disasters. Although the preventive measures have been effectively functioning, quite contradictory, the landscape of Hanakawa river grew extremely monotonous because water creatures totally disappeared.

【Reconstruction of indigenous natural and cultural environment】

The catchment area of Hanakawa torrent is very much rich in cultural heritage such as Buddhism mandirs, ancient tombstones and Kanmuridake shrine. The Mayor's office has been strengthening the cultural ties based on the old folktale of the Buddhism monk Zyofuku with the other Mayor's offices in China. In the framework of the cultural exchange program with China, the Mayor's office has been constructing the Mt. Kanmuri Park which carries Chinese atmosphere in the area.

The annual Mt. Kanmuri festival held in the park attracted a lot of tourists from all over the region.

In line with the Mayor's policy, the Sabo Division of the Public Works Department, Kagoshima Prefectural Government, has launched a special project aimed at reconstructing natural and indigenous environment in the park.

A special committee consisted of academic experts, administrators and representatives of local communities and an advisory committee consisted of planners, designers and engineers specializing in garden building were organized prior to the implementation of the project.



Extremely monotonous landscape by revetment works



Restored landscape by channel works



Newly-established sabo dam which was seen from "Sennin Iwa"

【Finishing employing the Artificial Rock-Face Method】

In order to create a natural environment and cultural fragrance of the Kanmuridake area and to tie-up engineering products with natural environment, all the surfaces of engineering structures were finished employing the artificial rock-face method.

The artificial rock-face method is good for designing the pattern of the faces of engineering structures and provides successfully the project sites with natural atmosphere. Furthermore, the products are timeproof. The mold forms for the artificial rock-face are manufactured by copying natural rock-faces. As a result, the pattern and the color of the artificial rock-faces are indistinguishable from real rock-faces.



State of building artificial rock panel



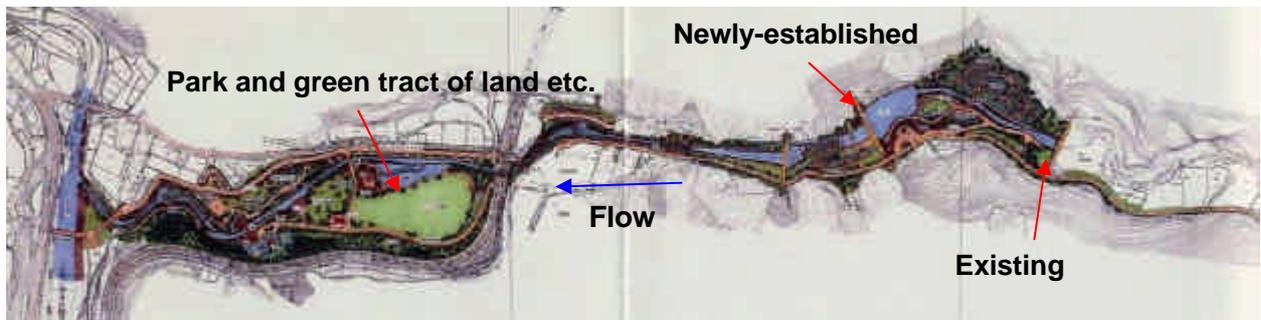
State of molding by the reinforcing rod among the panels



Sabo dam before facing work



Facing work by artificial rock



【Conclusion】

The master plan and implementation program were prepared and authorized in the fiscal years 1995 and 1996 respectively, while the Hanakawa torrent reconstruction project financed by the Sabo Program was launched in the fiscal year 1997 under the aegis of the Ministry of Land and Transport.

Sabo/check dams, consolidation dams and channel works were built in a one kilometer-long project area adding financial support from both Volcanic Sabo Program and Sabo Environmental Rehabilitation Program. The project, including a Chinese-style hut, locha, pond and toilet were completed in 2004.

The project area was called Mt. Kanmuri-Hanakawa Sabo Park and officially opened soon after the completion of the construction works. The park is being managed by Ichiki-Kunshikino municipal office and attracts a lot of tourists and holidaymakers.

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