

Gaining Gold Medal in National Students Scientific Week by Offering Absorption Pores Pipe

Wednesday, 25 August 2010 WIB, By: Marwati


Starting from the intention to overcome floods in dense areas, three UGM students developed the concept of absorption pores pipe development. The innovation compiled the function of absorption well, bio pores hole, and absorption composter pipe.

The concept developed by Wasrif, Taufan Kurniawan and Friski Cahya N (students of Civil Engineering Department UGM) besides gives new solution for controlling flood in dense areas, also brought them to gain the gold medal in the 23th National Students Scientific Week in Bali last July. The proposed work entitled *Innovation of Absorption Pores Pipe to Solve Flood at Dense Urban Area*.

“We combined the function of absorption well, bio pore hole and absorption composter pipe. Absorption pores pipe is very possible to be applied in dense areas,” Wasrif said at UGM Fortkagama Room, Monday (23/8).

The absorption pipe was made of PVC pipe with diameter 1-3 cm. The bottom adopted the concept of absorption well by using gravels as foundation. Furthermore, the body was given pore holes using principle of composter pipe covered by palm fibers. Then the tip adopts the function of bio pores by using compost.

Wasrif said that the idea to develop the pipe was started due to the weakness of bio pore and composter absorption wells. The absorption well is very difficult to be applied in dense areas because it needs large space. “Therefore, the principle of absorption well that can be used is that it is around 3-7 m deep and the use of gravel as foundation,” he explained.



Meanwhile, bio pore has strength of high absorption power. However, high absorption power without strong structure of absorption hole will cause the land vulnerable to collapse. “The bio pore actually has characteristic to fertilize soil. It makes the surrounding soil unstable because it does not have strong land structure. Therefore we only took the principle of compost making that can absorb water strongly. While on composter pipe, we only took bio pore holes,” he said.

The combination of three previous solutions can be possibly applied in the populated areas. It also can save more water than absorption well with ratio 15:1 and it does not have the risk of collapsing the surrounding areas.

Taufan added that the absorption pore pipe costing 150 thousands rupiah is also completed with network that connects one pipe to the other. The network will increase water absorption into the ground. The pipe is also completed with filter in the top to solve sedimentation.

The absorption pore pipe is also believed to overcome drought by improving water absorption level into the ground.

The idea of absorption pore pipe will be applied immediately in areas of UGM Civil Engineering to observe its effectiveness. They hoped the concept would be taken by the government as the solution of overcoming flood in dense areas. “We hope the absorption pore pipe can be applied among the community,” Taufan hoped.

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