

# Building with Nature Indonesia - optimisation of the permeable structures

## M.Sc. Graduation project

### Outline:

At the north coast of Java, east of Semarang, a Building with Nature project aims to restore the mangrove forest and to revitalize the aquaculture ponds.

Within the project, low tech permeable structures of bamboo and brushwood have been built. The structures reduce wave energy behind them and enhance sediment accretion in the sheltered area. When the bed level is high enough mangrove seeds start colonising the soil.

The purpose of the present graduation topic is the optimization of the structures for the Building with Nature project. Different configurations will be analysed systematically in the flume. Several lay-outs will be tested, such as vertical rows of piles, like in the Wadden sea, horizontal beams and combinations of the two. This thesis can result in equations to calculate the wave damping by the dams, and eventually a design tool. The starting date of the M.Sc. thesis is February 2018.

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