The design of a modular, amphibious structure for a flood and typhoon-prone municipality; Hagonoy, the Philippines

technical drawings

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prefabrication

timber frame with steel connections

timber frame with steel connections
prefabrication

timber structure to keep barrels in place

timber cover to keep barrels in place
connection x direction

1:20
view situation 1

1:20
view situation 2

stainless steel connector, t = 8 mm

new module

placed module
connection x direction

1:20 view, situation 3

1:20 view, situation 4

steel connector, t = 8 mm
connection y direction

1:50, plan, situation 1

1:50, plan, situation 2

1:50, horizontal section, situation 2
connection y direction

1:20 section, situation 1

new module, filled with water

placed module

1:20 section, situation 2

new module

placed module
connection x, y direction

1:20 plan, situation 1

1:20 plan, situation 2

1:20 horizontal section, situation 2
integrated piping system
connection with building

connection with building, integrated in module connection

integrated piping system
removable barrels

1:50 situation

interior

1:20 situation 1

interior

1:20 situation 2

remove deck

remove deck
removable barrels

1:20 situation 3

1:20 situation 4

1:20 situation 5

1:20 situation 6
removable barrels

1:50 situation, plan

1:20 situation 1

remove deck

1:20 situation 2

remove second deck
removable barrels

1:20 situation 3

remove deck

removable barrels

1:20 situation 4

1:20 situation 6

shift barrel

1:20 situation 5

1:20 situation 3

remove deck
replacable barrels
mooring piles

1:150 plan, single module

1:150 plan, 2x2 modules

mooring piles
connection mooring piles

bamboo mooring pile, d=300 mm, t=15 mm
connection mooring piles
connection mooring piles

1:20 view

hinged connection

water level

1:20 view

water level
water system

vent

rainwater

composting toilet

piping for urine

composting toilet

fresh water storage

1:20, section

gutter

empty space, for displacement barrel

stool collector

filter/pump system, composting toilet

helophyte filter

filtered water
connections between modules

hinged connection, translation is possible

1:20 section