LOW-COST APARTMENTS INCORPORATING SMART MATERIALS / HAMBURG, GERMANY

Redesign as pavilion | 1:1 prototype of load-bearing infra-lightweight concrete wall

- the Smart Material House and its innovative material concept is transferred into the design of a single-story information pavilion, which will serve as a public contact point in the area of Wilhelmsburg and will be heavily frequented by visitors
- similar to the apartment building concept it is planned to use infra-lightweight concrete walls as “load-bearing thermal insulation”; the weight is reduced through the addition of recycled glass to a value of about 1,000 kilograms per cubic meter; floor decks are of glued-laminated timber panels
- the 30 solid wall panels, which are gently curved concavely, are multitasking elements and will function as supporting elements, perimeter walls, and as thermal insulation at once, so the bearing structure remains exposed both inside and outside, without any additional finishes or cold bridge problems
- in January 2012 an 1:1 prototype of one wall panel was built in a 14 days workshop
- realization is slated for the International Building Exhibition, Hamburg in 2013

1:1 MOCK UP

Volume: ca. 6 m³ infra-lightweight concrete
Weight: ca. 4,800 kg (dry condition)
Measures: 3.3 x 3.0 x 0.5 m

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2012 GLOBAL HOLCIM INNOVATION PRIZE