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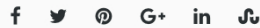
This parametric model gave Ecuador a new hospital in under a year

NOVEMBER 23, 2018

TEXT RAB MESSINA

PHOTOS BICUBIK

TAGS ECUADOR , HOSPITAL , INSTITUTION , MACHALA , PARAMETRIC DESIGN , PMMT



MACHALA, ECUADOR – In Ecuador, the capital of the El Oro Province is the place where some of the most delicious things in the world begin their journeys: Machala is mostly known for its sizable bananas, shrimp, coffee and cocoa exports. The coastal city has been a key element behind the province's economic growth in the past decade – in fact, it generates 60 percent of El Oro's total income.

But that also means its population has grown along with its economy: from 200,000 inhabitants in 2005, Machala's current residents have crossed the 300,000 line. The city's public services were overloaded by this rapid increase, and few felt the strain more than the area's old hospital. The Ecuadorian Social Health Institute needed a new space within deadline and within budget.

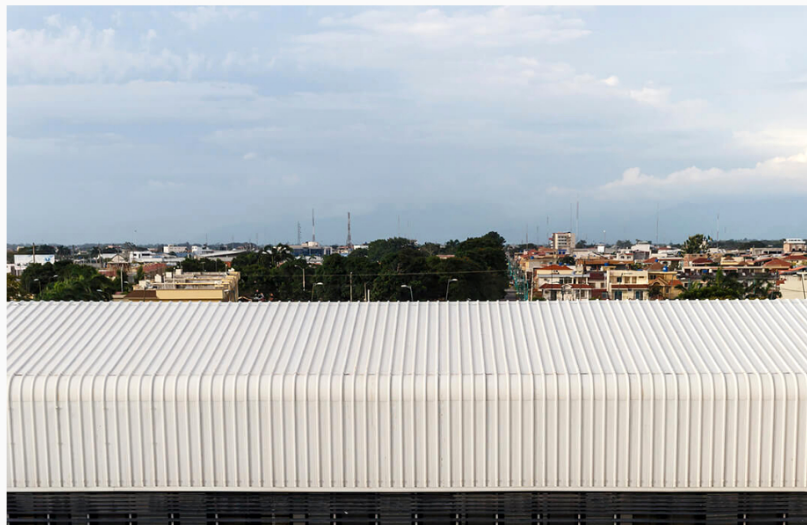
'Building only what you need means costs are optimised'



And that's where Barcelona-based architecture firm PMMT came in: their proposal for a fluid hospital, a novel typology in the field, checked every box and more. With a parametrised model, the team was able to come up with a proposal that could be designed, built and opened within a year – a fourth of the time usually required with regular projects. Furthermore, the hyperflexible structure came with a very important

advantage, an Aravenian solution of sorts: the client could choose to only build what they needed at the time and extend as necessary later on. 'The relationship between the built surface area and usable area is ideal: building only what you need means costs are optimised,' explained architect Patricio Martínez.

PMMT's fluid hospital typology involves a bespoke process: the team defined the particular parameters that, when combined, allowed for good functioning of the healthcare facility and allowed for flexible adaptations to future changes. Those calculations included the metrics of the layout and blocks, the modulation of the façade, strategies for extensions, vehicular access and the location of entrances. The resulting criteria guided them towards a series of open-plan spaces and a firm commitment to the segregation of functional units – it is a modular system that uses a single basic module of 7×7 metres.





But the architects also aimed to provide a landmark for the region. The resulting volumes, 12 blocks that feature an intricate interplay of roofs, are based on the repetitive idea broken down into the sequential insertion of courtyards and the separation of circuits. The buildings are open to the light, closed to east and west to protect the spaces from any hostile climatological conditions, but open to the north and south to allow for optimum ventilation.

'We are able to design structures with the same level of quality, regardless of the continent they're in'

After the success of this project, PMMT is taking its fluid hospital model to Bolivia and Angola. 'In places that lack a health centre, having a hospital up and running in the least amount of time possible means saving lives,' said architect Maximia Torruella. 'But make no mistake: the advantages of this model aren't only visible in [low-rent countries]: in fact, we're proud to be able to design structures with the same level of quality, regardless of the continent they're in.'

pmmtarq.com

Location [Av. Alejandro Castro Benites, Machala](#)

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