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SECOND SCHOOL OF ARCHITECTURE
Master of Science in Architecture
Honors theses

Necessity and potentiality of reuse in an Indian slum
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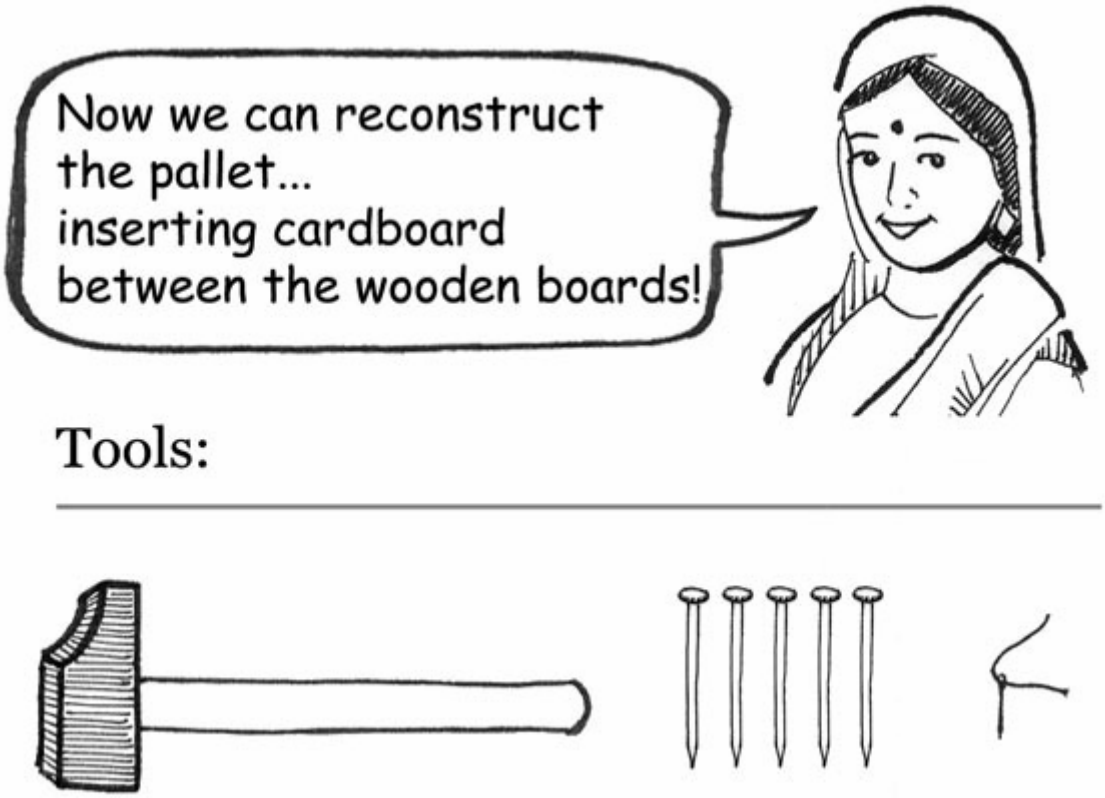
A slum – *baraccopoli* or *bidonville*, *favelas* or *chawls* – is the poorest urban settlement and it's characteristic of developing countries' most populous cities: where more opportunities are warranted, there easily rises an illegal settlement. Slum dwellers are despised by their own fellow citizens, extorted by local mafias and, often, even by police force; they're forgotten by politicians and exploited for the most degrading and ponderous jobs. Their poor houses are always built in unhealthy areas.

Sandar Bridge Settlement, Ahmedabad (India)

Ahmedabad, commercial capital of Gujarat (state of North-West of India, on the border with Pakistan), has 5 slums: one of them, the Sardar Bridge Settlement, has no public services (water supply, sewage system, etc.), such as most of the slums in developing countries.
Inhabitants can find temporary work in the near vegetable market; otherwise, they survive with other occasional jobs. Women and children ransack garbage to resell what they find.
Rubbish, their only wealth, has got **potentialities**, but – even if they're recognized – they're not exploited: everything is sold to the *local seller*, one of intermediaries with recycling industries. Sometimes cleverness and **necessity** help to find a second use for an object created for another purpose. However, without any exchange of ideas there are no architectural improvements.
A 1:1 scale model verified which possibilities of reuse could be experimented in Sardar Bridge Settlement – as in every **Indian slum** and, therefore, in almost any other slum of the world.

The 1:1 scale model, built at LATEC – Politecnico di Torino

An air space (in void spaces under the ground floor, to insulate it from natural humidity of the soil), could be made through tires filled with stones: butyl rubber ensures isolation, because it's waterproof, impossible to recycle and can endure a century. The floor – covered with reused pieces of broken tiles – would lie upon tires and an iron plate obtained by an oil bin, which would reinforce the overhanging concrete paving.
A row of glass bottles – instead of a row of bricks – could provide light inside the house, whose ventilation would be guaranteed by bricks, which are shifted in the fishbone pattern – two overlapped bricks and empty space. If ashes of rice would be mixed with cement, it's possible to replace about 30% of cement and to reduce about 30-50% its cost.
Roof framing could be created using wooden pallets and cardboard: a "sandwich" of these materials, polypropylene's sheets (stitching some cement bags together, to waterproof the cardboard) and Tetra-Pak (whose thin aluminium layer can guarantee protection from cooking fires' sparkles). Tiles – about 15 cm long – can be cut from tires, and then painted white.
It's possible to create a gutter along the edge of the roof to carry off rainwater during monsoon season, nailing two boards and covering them with aluminium sheets taken from cans. A drain pipe, through which it's possible to drain water from the roof and collect it, can be created inserting the top of one bottle into the base of another. To attach it to the wall, a simple structure can be created: a tin would press and keep the bottles and it would be fastened to the wall with a wooden beam.
These solutions require adequate dissemination to slum dwellers: that's why three characters – a Muslim child, a Sikh woman and a Hindu man – explain through a leaflet how to perform these various proposals.



A detail from the leaflet: Gurmeet shows how and through which tools a roof can be created

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