

# Iuav Degree in Sustainable Architecture

Graduation Thesis for Academic Year 2009/2010

## Supervisors

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## Topic

Professional training school in Congo

## L'homme Est LA

The title of the dissertation draws its name, and meaning, from the place where the project is being carried out, the city of Lomela which, according to a popular legend, makes reference to an exclamation made by the Belgian colonisers when they caught sight of the first village on the river: *l'homme est là!* We are in the province of eastern Kasai, in the Democratic Republic of Congo, the largest state in Africa that is rich with natural resources (the Congo river feeds three dams that provide hydroelectric power to all the states lying on the shores of the Mediterranean; there are diamond, gold, copper, coltan, uranium and cobalt mines to name a few) and is home to a large variety of ecosystems (equatorial forest, tropical savannah, mountainous plateaus and coastal swamps). But on the other hand Congo is very poor in terms of infrastructures (only 10% of the country is served by road, railroad or aeroplane infrastructures), 75% of the population is living on less than \$2 a day, and less than 40% of these people have access to drinkable water.

Our student, whose personal history includes a project sponsored by the NGO 'Architettura senza frontiere', made a long trek to Lomela to provide us with observations that turned out to be extremely valuable in the drafting of the architecture project. The subject of the dissertation derives from a request by NGO 'Développement Intégral du Paysan' (the local counterparty) to build a training centre (sewing classes, carpentry) and some accommodation for teachers. Her adventure soon switched from exploration to training, and can be seen through the emotional and sharp pictures she took and filed away to create a knowledge base for the project. From the identification of types to their variations and subsequent strategy of arrangement we can infer the direct and close relationship with the places, traditions and practices of the people addressed by the project. Her research was expanded and put into focus, once back in Venice, with the support of the laboratory teacher and thanks to the precious advice offered by professor Lan-

er. Her starting point was given by material and techniques: by making them her own she was able to better interpret housing and collective types which, in a country such as Africa, do not necessarily translate into enclosed volumes. Her choice of the butabau technique for the load bearing structure (perimeter walls with wood poles joined by horizontal slats of bamboo which create a hollow space filled out with balls of compacted earth and later covered with earth mortar, in turn protected by wide coverings), is dictated on the one hand by tradition and on the other by the principle of self-construction. This technique characterises temporary housing (S, M and L for teachers and XL for the caretaker and his family) fitted with a rainwater collection system that channels excess tank capacity towards water wells used for agriculture and towards water sterilisation systems.

The classrooms, whose only crude earth walls protect the storage rooms that hold materials and equipment, can be changed around thanks to the bamboo framework that can be placed and removed at will and which is protected against the sun and rain thanks to filters made out of vegetable fibres. The coverings offer a new interpretation of the traditional truss by taking advantage of Leonardo's rule for bridges (the covered opening measures up to 6 metres and allows for an external drop of another 80 centimetres to protect the walls made out of crude earth and comprises the supporting structure for the eaves and the pivoting bamboo walls. Each structural element was conceived according to the principle of tolerance in order to adjust to local conditions: not standardised industrial materials, but 'unique' items drawn from the nearby forest.

After having tackled the school and accommodations, she moved on to the study of socialisation types: simple shelters, open air classrooms, market points, mess hall: the circular base dictated its rules and the largest variation was achieved with the help of a technique imported from neighbouring countries: twin roof, polygonal covering with supports exclusively along the perimeter, which remains upright thanks to a system of beams that inter-

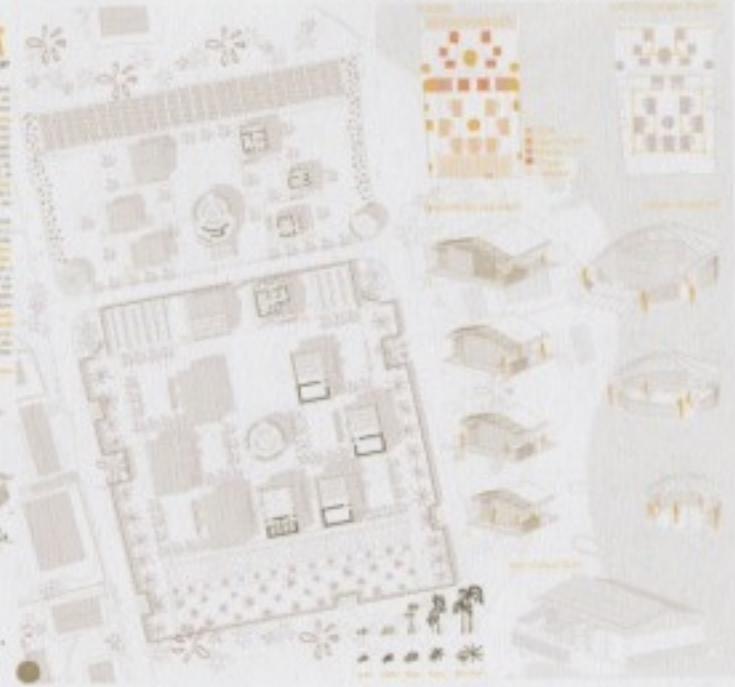


sect and support each other. This construction model entailed a hole in the middle of the covering that is left open to keep sight of the sky and the elements that populate it, a tangible manifestation of the presence of their ancestors, according to the indigenous animist religious traditions. The compositional strategy is simple but in harmony with local habits, classes on one side and teacher accommodations on the other with the common mess hall, a system of gardens following the wings, all of which is shielded by a semi-transparent bamboo lattice-work that delimits a boundary without preventing the view of activities of a small community made independent by detailed and efficient imported systems.

The examination board praised her project for being so gracefully inter and multi-disciplinary and for its attention, observation and interpretation of the *genius loci*, which provides its true interpretation.

# L'homme Est LA

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