*Outside waiting area with weather-protection*

*The whole facility consists of two generous roofs with buildings underneath and a central Hui-tree that gives shade for waiting*

*Examination room*

# HEALTHCARE-CENTRE MONDIKOLOK (SOUTH SUDAN)

David Kraler & Christoph Lachberger

The Healthcare-Centre Mondikolok is situated in the region of Kajo-Keji, South Sudan and run and financed by the small Austrian NGO "Osttirol für Jalimo/Mondikolok". In a first building phase an outpatient-department was realized by David Kraler and Christoph Lachberger as part of their master thesis (Architecture) at Vienna University of Technology.

Besides providing the requested medical help, the healthcare-centre in Mondikolok gives an additional benefit to the local community: Through the framework of an architectural master-project it was possible to do an appropriate field research as well as being on site for the whole of the building-process. Therefore an innovative building system could be developed and implemented, that corresponds very well to local conditions: By combining technical innovation with traditional building techniques and the related local know-how, a durable building out of local material was realized.

Together with locals, who gave an important impact to the project's design throughout the whole process, a new low-cost and eco-friendly way of reaching today's demands in dwelling could be worked out.

Traditional compound

Traditional tukul and permanent house in Betty's compound

Tukul in traditional compound

Roofing a tukul with thatch

Interviewing dwellers on the field trip

In order to react to the local context in an appropriate way, an APD-study (anthropological pre-design study) was done before even starting the design-process: Basic knowledge about culture, available material, local building culture, lifestyle and climate was gathered directly on site by interviewing locals and doing building surveys.

Traditionally Kuku-people (the local tribe) live as peasants. Their settlement-structure is a diffuse grid of pathways, connecting unfenced compounds, that are usually inhabited by one family and consist of several so called tukuls: traditional houses that are mostly built by the dweller himself out of local material that is available in the bush or on the building site. But since timber parts wich are connected to earth can be destroyed by termites very fast, and as people are aiming for an assumed modern lifestyle, they have begun building so called „permanent houses" out of burnt bricks, cement, steel and corrugated iron-shields.

Besides major ecological disadvantages or uncomfortable indoor-climate, this building type also curtails the locals' independency through the economic burden of building with imported material and employing trained craftsmen.

Therefore a main aim of the project was to show an alternative way of modern constructing, that is strongly connected to still vivid local building traditions but at the same time fulfilling people's contemporary desires.

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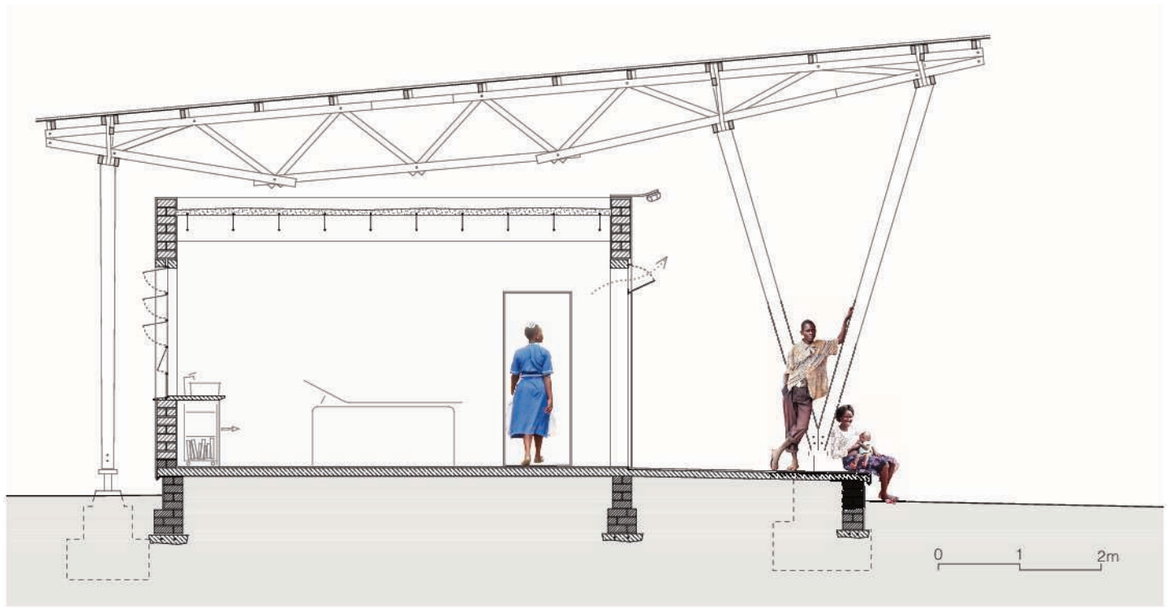
Mason, building up an Adobe-wall

Termite attack

Carpenter working on termite-shield




Section of the building system (Scale 1:75)

Free-standing roof construction out of local timber

In the pre-design field trip a severe termite-problem turned out to be the biggest reason for locals to build with imported and industrialized materials. Therefore the architectural goal of the project was to develop a building-system, that makes use of local material and techniques, but can stand termite-attacks without any poisoning or other harmful side-effects.

By concentrating on structural design-strategies like building barriers for those flightless insects (who live in the soil and eat timber), some traditional tukuls turned out to offer a starting-point: The wooden roof construction is resting on poles that are not connected to the mud-walls. Thus potential attack-points for the insects are reduced.

This principle of structural termite-control was enhanced in the development of the applied building system: The wooden roof construction from the Healthcare-Centre Mondikolok is separated strictly from the mud-buildings and the crucial points for termite-attacks were minimized by bundling several oblique columns to one base point. Furthermore those base points have been designed with so called „termite-shields" that hinder termites to climb up.

The mud buildings underneath provide treatment- and examination-rooms with a pleasant indoor-climate.

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Communicating the draft

Testing of prototype with local force

Collaboration with local welder

Site foreman and neighbour are looking for appropriate mud

Last coat of outside plastering in traditional technique

Local knowledge and skills in building with mud and timber have been seen as potentials for the construction work as well as a metal-workshop and a newly established weaving-workshop within a mission station in nearby Lomin:

The intense collaboration between Austrian volunteers, local peasants and craftsmen gave the possibility of sharing knowledge and establishing a participatory design-process – benefiting from the different fields of expertise of all participants. Thereby whole building parts could be developed in scale 1:1 directly on site. Especially the adobe-walls and mud-plastering of the walls – wich was done in a local technique by neighbouring women and led to very durable surfaces – could demonstrate the value of local knowledge and material very well.

This approach of working together and appreciating the know-how of all involved people has not only led to an architectural benefit. It was also possible to foster a transfer of knowledge that went both ways: Local community and individuals learning from Europeans, and Europeans gaining knowledge and experience from locals.

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