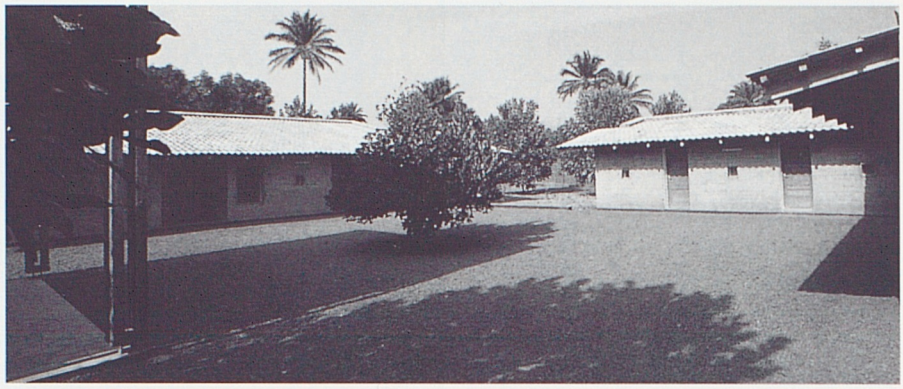
KAHERE EILA POULTRY FARMING SCHOOL

KOLIAGBE, GUINEA

This project has received an Award because it draws on traditional local planning relationships, with a courtyard dominated by a central tree articulating teaching and accommodation spaces. Local materials are combined with sophisticated structural elements, strengthening the resources available to local craftsmen. Distinguished by clarity of form and appropriateness of scale, the solution is a fine example of an elegantly humble yet modern architecture that successfully crosses the boundaries of local Guinean and Nordic traditions and, in the process, avoids mimicry.



It is rare that a piece of architecture can bridge distinct cultures and building methods while maintaining the local characteristics of its context. In those few instances where a harmony is achieved, the results can provide a rewarding range of benefits and outcomes. For a small agricultural school in Guinea, West Africa – the result of an unconventional chain of events and human contacts leading from Africa to Hungary to Finland and back to Africa – a humble yet elegant design has proved an unequivocal success.

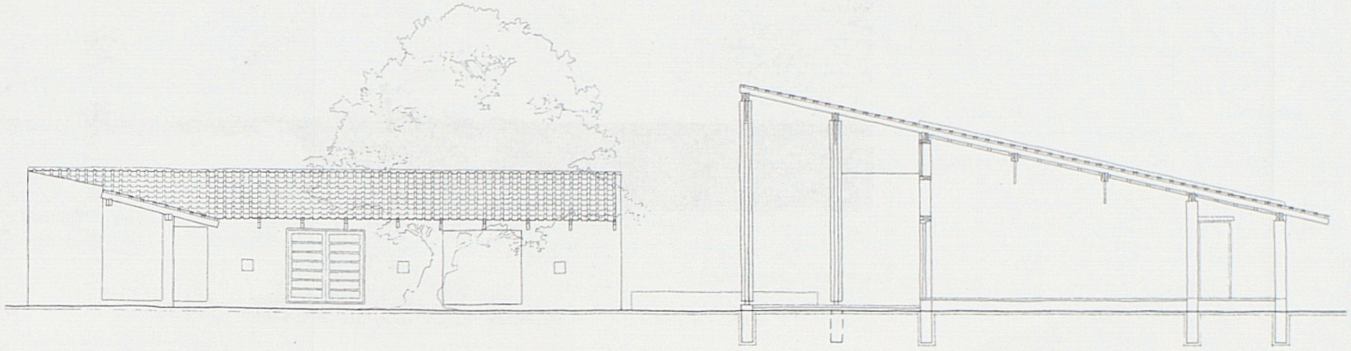
Built on a poultry farm in Koliagbe near Kindia, a town 120 kilometres inland from the coast of Guinea, the educational complex was made possible through the support given to local initiatives by Eila Kivekäs, the Finnish patron who funded the project. Its design, by Finnish architects Heikkinen-Komonen, combines the timber structures typical of Finland's native architecture with local materials, improved by simple technological advances.

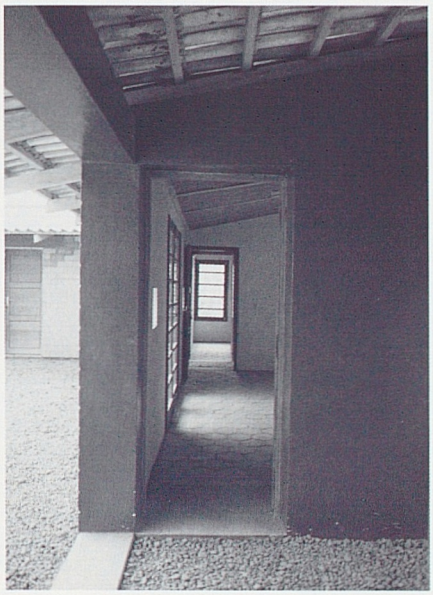
In the early 1980s Alpha Diallo, a Guinean agronomist, and his uncle, Bachir Diallo, a veterinarian, discussed the idea of creating a poultry farm to address the problem of the Guinean diet's lack of protein, a nutrient that is found in high levels in chickens. Both men earned scholarships to study in Europe, Bachir going to France and then Italy, Alpha to Hungary. There, Alpha developed an interest in the Finnish language, which is related to Hungarian, leading to his translation of the Finnish epic poem, *The Kalevala*, into Fulani, the language of his ethnic group. On a visit to Finland, Alpha met Eila Kivekäs. When Alpha died suddenly in Finland in 1984, Kivekäs arranged for his body to be returned to Guinea to be buried. Soon afterwards Bachir, by then in Canada, received a phone call from Mrs Kivekäs. She proposed that he return to Guinea – where a change of political regime had created favourable conditions for private initiatives – and create, with her support, the poultry improvement project that Alpha had discussed with her. The poultry farm was started in 1986, and in 1989 Kivekäs founded a development association called Indigo, based in Mali town, which went into partnership with the poultry farm.

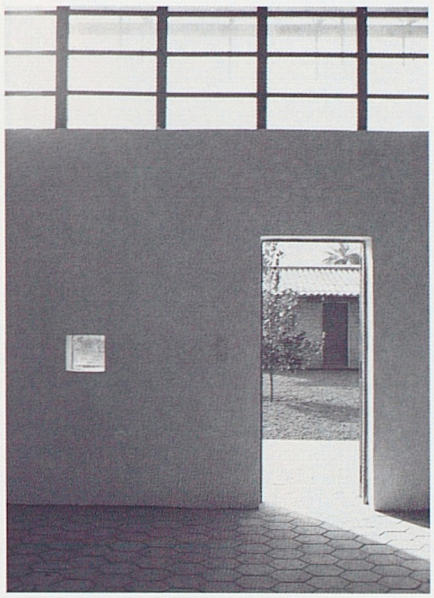
One of the primary aims of the poultry farm was education. Local farmers knew little about issues such as increasing production, improving the quality of the meat and preventing infestations, so the school began by instructing groups of between twenty and twenty-five people. Later, agricultural students and professionals started to visit the school. Once trainees, students and researchers began to come regularly, the poultry farm's facilities could no longer accommodate them. In 1997 Kivekäs proposed to Bachir, as director of the poultry farm, that amenities be provided near the main part of the farm.

Kivekäs' involvement with the project partly explains the thinking behind the programme. She was intent on creating an energy-saving, climatically comfortable building that would present a workable alternative to the fired-brick walls and tin roofs of local structures, while encouraging the involvement of local craftsmen and exploring the potential of local materials for good design. She had commissioned Heikkinen-Komonen to work in Guinea on earlier Indigo projects, where the production of local materials had been enhanced by soft technology,

Established in 1997 to help Guineans improve their diet, the school is arranged traditionally with accommodation grouped around a courtyard with a tree at its centre.







in combination with structural ideas drawn from Finnish traditions and translated to the local craft conditions.

In the areas around Kindia, the oldest form of dwelling, still commonly used, consists of a round construction, made of raw earth-blocks, with a conical, thatched roof. Three distinct types of building – larger structures used as sleeping-cum-common rooms, smaller structures for cooking, and covered areas without walls (known locally as *baré bundi*) for male socializing – are grouped around an open space, usually with a large tree in the centre, where all the household activities, such as preparation of food and washing of clothes, take place. Close to urban areas, however, most buildings are rectangular, with a hipped tin roof. In recent years, corrugated metal sheeting has rapidly become the preferred roofing material. Concrete blocks are fairly common for construction; but the most common material for walls remains earth-bricks fired in local kilns. Fired bricks are produced by using blocks of earth, excavated nearby, which are shaped with a wooden form. They are dried in the sun, then arranged in piles, which are sealed with mud and burned over a fire. Those that are not well baked are fired again. The quality of the finished material is poor and the amount of wood required is considerable.

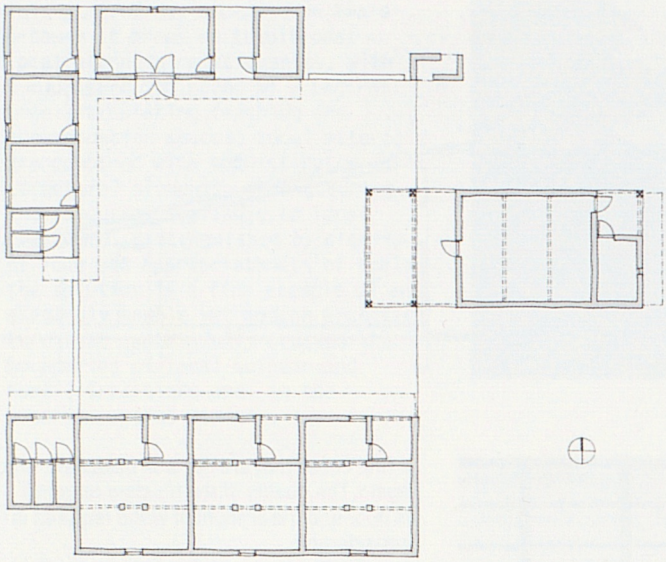
For the new complex, three essential areas were required: a classroom, student quarters for up to twelve people and teachers' quarters. These are organized around a courtyard, at the centre of which is a tree. The plan is based on a 1.2-metre grid, which governs the proportions of the buildings and their relation to each other, imparting a simple but formal elegance to the architecture. The grid is carried through to the window openings, which include fixed windows of 30 by 30 centimetres and openable 160-by-90-centimetre windows, arranged with a rhythm and symmetry that animates the elevations.

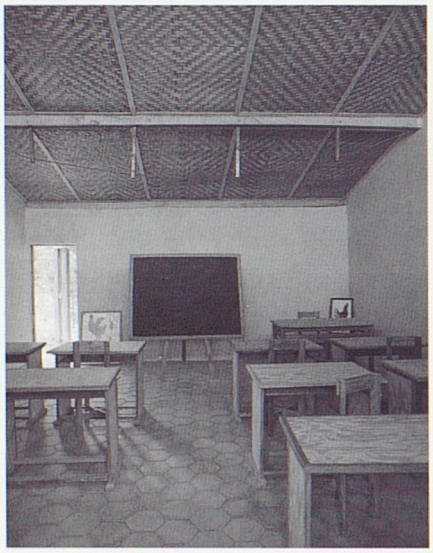
The Finnish architects introduced wood-frame technology – posts and rafters joggled and fastened by simple steel elements – in combination with weight-bearing walls made from a double layer of specially developed stabilized earth-blocks. As well as providing energy savings by dispensing with the need for firing, these blocks act as heat collectors, moderating room temperature, and their hard, smooth finish means that they do not need rendering. The wider span of the classroom is covered with the aid of simple metal trusses combined with the wooden beams. The tallest columns, those of the classroom porch, are made of four posts fastened by intermediate wooden blocks and steel bolts, an economical way of overcoming a shortage of long pieces of hardwood.

All primary materials were sourced locally. Wood, including hard acajou and softer samba for the structure and iroko

Top: Cross-section showing the classroom, with its tall entrance portico, facing the students' and teachers' residential blocks across the courtyard.

Centre left and right: The school ensures climatic comfort through low-technology energy-saving methods such as shaded areas and local materials such as stabilized earth-blocks.





for the doors, came from the Guinea forest. Earth for the blocks and floor tiles was excavated nearby and moulded on site, the blocks on a hand press, the tiles on wood forms specially made by the carpenter. Roof tiles of cement mixed with vegetable sisal were formed in metal moulds, then submerged in water tanks made for the purpose. The surface finishes take into account the textures offered by the native materials but areas of bright colour are also introduced: the main elevation of the classroom is painted deep blue, the entrance porches of the student quarters bright yellow, and parts of the teacher's residence are painted green.

The significance of introducing new building techniques is best illustrated by the example of the school's head mason, who trained in the stabilized earth-block technique during the construction of the farm school. He has gone on to use the blocks in private houses, small industrial installations and even a mosque, which has helped boost the area's production of the blocks.

The rational and simple vocabulary of the project combines with equally simple forms of building, resulting in a gentle impact on the environment. The school and its construction have fostered pride among the workers and farm staff, and created a positive atmosphere among the students. The disposition of buildings around a courtyard is comfortably adapted to the domestic character of the small community studying there, and gestures like the reversed pitch of the classroom roof and the large surfaces of bright colour animate a space that might otherwise be monotonous.

Top: The plan shows how the Finnish architects combined traditional materials with a rational grid based on a 1.2-metre module.

Centre: In the classroom, metal trusses are combined with traditional features, such as wooden beams and the woven mats of the ceiling.

Patron
Eila Kivekäs.

Client
Centre Avicole Kahere-Bachir Diallo, Director.

Architects
Heikkinen-Komonen Architects-
Mikko Heikkinen and Markku Komonen, Partners in Charge; Ville Venermo, Site Manager.

Consultants
Boubakar Barry, Civil Engineer.

Craftsmen
Abdulhaye Djiby Sow, Master Mason; Suleymane Saouré, Master Carpenter; Moustapha Souaré, Master Tile Maker.

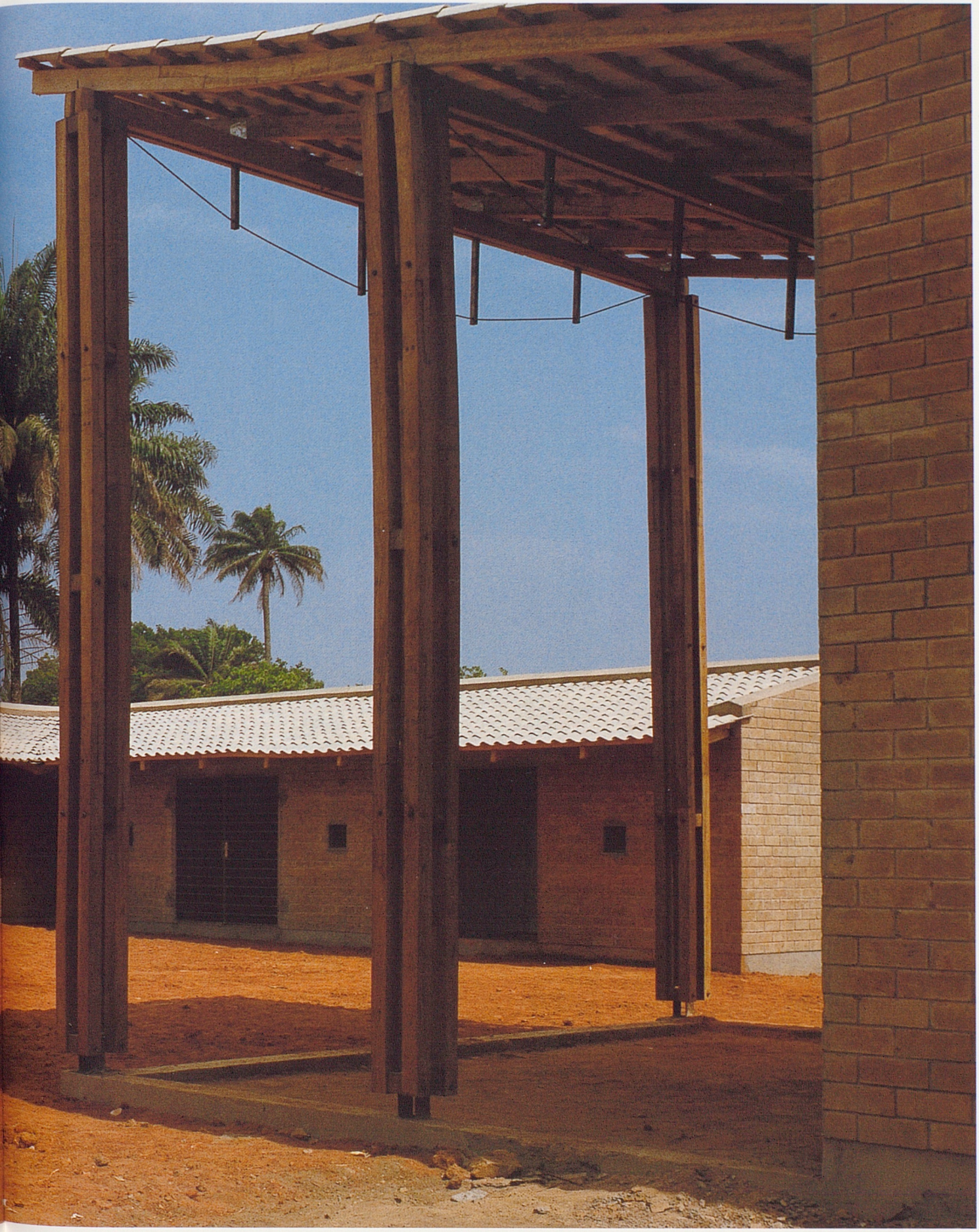
Commission	1997
Design	1997-98
Construction	1998-99
Occupancy	January 2000
Site Area	3,800m²
Built Area	340m²
Cost	GNF 153,373,000 (USD 104,000)

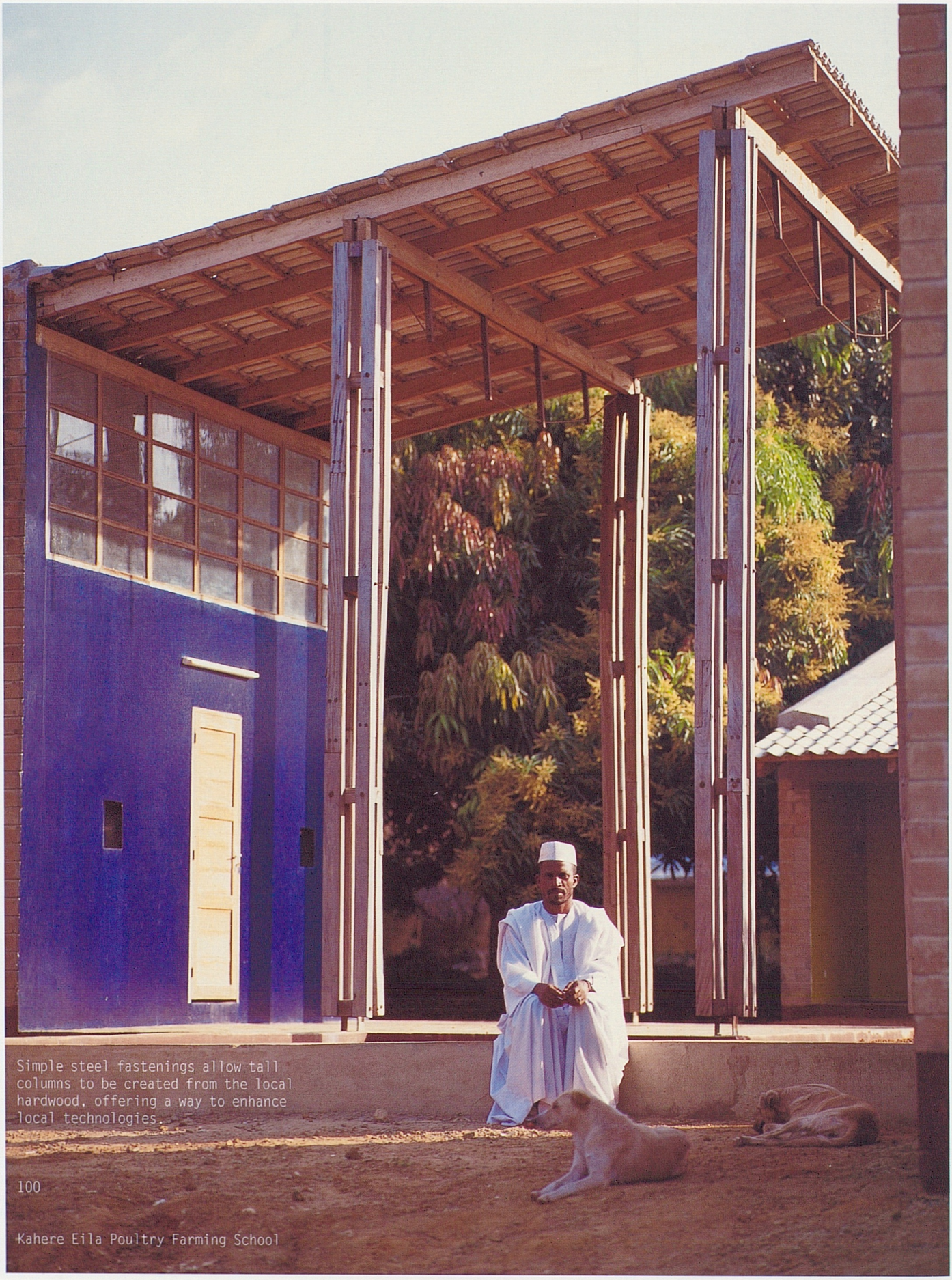
The water tower with the classroom's wide portico beyond: the architects introduced a wood-frame structural system typical of Finland.

Natural vegetation around the site was left intact and the complex's domestic scale and materials integrate it with its environment.

The complex pioneered the use of stabilized blocks made of local earth, which were arranged in double layers to increase their bearing capacity.

While the roofs of the students' and teachers' quarters slope towards the central courtyard, that of the classroom slopes contrapuntally away.





Simple steel fastenings allow tall columns to be created from the local hardwood, offering a way to enhance local technologies.