



Mahiga Hope High School Rainwater Court

LOCATION Mahiga, Nyeri District, Central Province, Kenya
DATE 2009–10
END USER 1500 residents of Mahiga
CLIENT St. Joseph Mahiga Primary and Secondary School
IMPLEMENTING AGENCY Architecture for Humanity
PROJECT MANAGERS Greg Elsner, Michael Jones
DESIGN FIRM Dick Clark Architecture
CONTRACTORS Boslika Building Contractors (general contractor), Chaga Electricals (mechanical contractor), Gumbi & Associates, Samuel Maina Ndlrague (water tank contractor)
ENVIRONMENTAL CONSULTANT Mazingira & Engineering Consultants
FUNDERS Architecture for Humanity; Willie and Annie Nelson; Nike; Nobility Project
COST \$84 150 USD
AREA 451 sq m/4850 sq ft
WATER STORAGE 30 000 liters/7925 gal



It started with a tree. Joseph Mutongu, a local conservationist, wanted to introduce a tree growing program at the school his son attended. The Mahiga Hope School is located in a dusty rural village in the Aberdare Mountain Range in central Kenya. Most families are subsistence farmers and at the time were in the midst of a four-year drought. The school needed water to allow the tree to grow, but more importantly to provide some clean drinking water to its students. Joseph took it upon himself to find a way to make it happen.

There were three options: to rely on the municipal waterline, which worked two weeks of the year; to drill an expensive bore well; or to develop an off-grid rainwater catchment system. A chance encounter with Turk and Christy Pipkin of the Nobility Project created the opportunity for

the third option. In 2008, Joseph, Turk and the school installed a simple gutter system on one of the school's wooden structures. Rainwater was collected in a small tank and purified with an ultraviolet system. For a few thousand dollars, the school suddenly had access to a small supply of water. The team then had a bolder idea, to provide water for every student all the way to the end of high school.

For a rural school, access to water is the key for focused learning. Children don't have to walk miles to collect unsafe water, school lunches can use clean water for cooking and for drinking, and safe access to sanitation prevents disease and ensures teenage girls stay in school. The idea was born of tackling two uniquely different issues, the desire of the children to have access to sports and the need for safe drinking water. Turk and Christy

worked with Dick Clark Architects to develop a concept for a rainwater court and entered into the Gamechangers design challenge run by Architecture for Humanity and Nike. As one of the winners of the competition, the school was awarded financing, construction management and a one-year design fellow who would live and work in Mahiga.

Greg Elsner arrived in Mahiga with a task to design and build a multi-purpose basketball court that would collect up to 30 000 liters of water, with a budget on par with a simple borehole well. Partnering with local architects Multiplex Systems, Elsner and the team utilized local hand-cut stone (Mahigameans "stone"), a steel structure that mirrors traditional Kenyan art, and a two-panel metal roof to build the 436 sq m (4850 sq ft) structure. Going beyond a court, the architects

ABOVE
The whole community attended the opening of the rainwater court.
Photo: Michael Jones/Architecture for Humanity

RIGHT
Joseph Mutongu and some kids sample the first purified water from the rainwater court.
Photo: Greg Elsner/Architecture for Humanity





designed a small stage that could be used for community meetings, movie nights and weddings.

Like many institutional projects, this was more than a structure; it became a community catalyst. In less than 18 months student test scores jumped from the lowest to the highest in a district of 600 schools; enrollment in the high school tripled; the school had electricity for the first time; it installed

a computer lab and a library and a two-story high school was built. Mahiga went from a derelict rural school to a model education campus.

When the court finally opened it had not rained in over three months. Over 1000 community members stood in the midday sun under a cluster of umbrellas to see the first basketball game played on the new court. As halftime approached,

dark brooding clouds rolled across the skyline and by the time of the last shot the heavens opened up. Most building openings are dampened by a downpour, but in the case of the Mahiga rainwater court, it was the best way possible to celebrate. Joseph collected the first bowl of clean water to nourish a tree still growing in a corner of the schoolyard.



TOP
Schematic perspective of the court.
Image: Greg Elsner/
Architecture for Humanity

ABOVE
Students pose outside Mahiga Hope
High School. The rainwater court
supplies the school with water.
Photo: Turk Pipkin/Nobility Project

LEFT
Foreman Robert Mwangi of Boslika
Building Contractors smiles as heavy
rains roll in.
Photo: Greg Elsner/Architecture for Humanity



TOP LEFT
Staking out the site for the
rainwater court.
Photo: Greg Elsner/Architecture for Humanity



SECOND FROM TOP LEFT
Setting the foundation for the
rainwater court.
Photo: Greg Elsner/Architecture for Humanity



THIRD FROM TOP LEFT
Raising the first of eight columns.
Photo: Greg Elsner/Architecture for Humanity



FOURTH FROM TOP LEFT
Underside of completed rain-
collecting roof.
Photo: Greg Elsner/Architecture for Humanity



FIFTH FROM TOP LEFT
Wire cage framing for the water cistern
with a capacity of 15 000 gallons.
Photo: Greg Elsner/Architecture for Humanity



BOTTOM LEFT
The water cistern, and everything
related to water on the court, is
painted yellow.
Photo: Greg Elsner/Architecture for Humanity

RIGHT
Setting up a basketball hoop.
Photo: Greg Elsner/Architecture for Humanity



"We finished it right when the rains came. Keep in mind it had not rained in the previous three months."

Greg Elsner, Architecture for Humanity design fellow