



Rwanda Institute for Conservation Agriculture (RICA)

Karama, Bugesera District, Rwanda, 2017-2023
MASS Design Group

Architects. Design Studio

MASS Design Group
Boston, Massachusetts (United States)

Design Team and Consultants

MASS Design Group (Architecture), MASS Design Group (Landscape Architecture), Arup (Civil Engineering), MASS Design Group (SMEP), MEW Consultants LTD, Arabella (Quantity Surveying), PEBL Design (Graphics presentations)

Client

Howard G. Buffett Foundation

Partners

Rwanda Institute for Conservation Agriculture,
Government of Rwanda

Contractor

Remote Group

Start-end Work Year

2017-2019 (Design), 2018-2023 (Construction)

Gross Area

20 350 m²

Sustainable Systems and materials

off-grid power sources, sustainable softwoods,
CEB walls' thermal mass

Expert committee. Architecture and Sustainability: Outstanding Qualities

The scientific committee highlights that Rwanda Institute « is a carbon negative campus based on regionally sourced bio- and geo-based materials, embodied labour connected to training. » and extracts the following points from the text provided by the architects:

- _ RICA utilizes 96% of materials (by weight) from Rwanda, a 1.5MW solar farm produces 100% of RICA's electricity.
- _ The structural foundation uses locally-quarried quartzite stone within a 5-mile radius, reducing concrete volumes and embodied carbon by 60% compared to a typical reinforced concrete solution.
- _ Innovative engineering involved researching and testing on-site soils to create a low-cement mix for site-made Compressed Earth Blocks (CEB), rammed-earth walling, and earth plaster mixes.
- _ Roof structures utilise regionally sourced sustainable softwoods, supporting a fledgling, low-carbon industry.
- _ Considering all stages of the building process, RICA's embodied carbon is projected to be 60% less than a business-as-usual approach, resulting in a total saving of over 5000 tonnesCO₂e..»

Website studio (link)

<https://massdesigngroup.org/work/design/rwanda-institute-conservation-agriculture>

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