

SALONGA NATIONAL PARK HEALTH CLINIC

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01. Introduction & Problem Definition

Salonga National Park, the largest protected rainforest in Africa and a UNESCO World Heritage Site, is home to over 260 ecoguards and critical wildlife but lacks basic healthcare infrastructure. Our project designs a sustainable, culturally sensitive clinic to deliver primary and preventative care to park staff and nearby communities.

02. Location

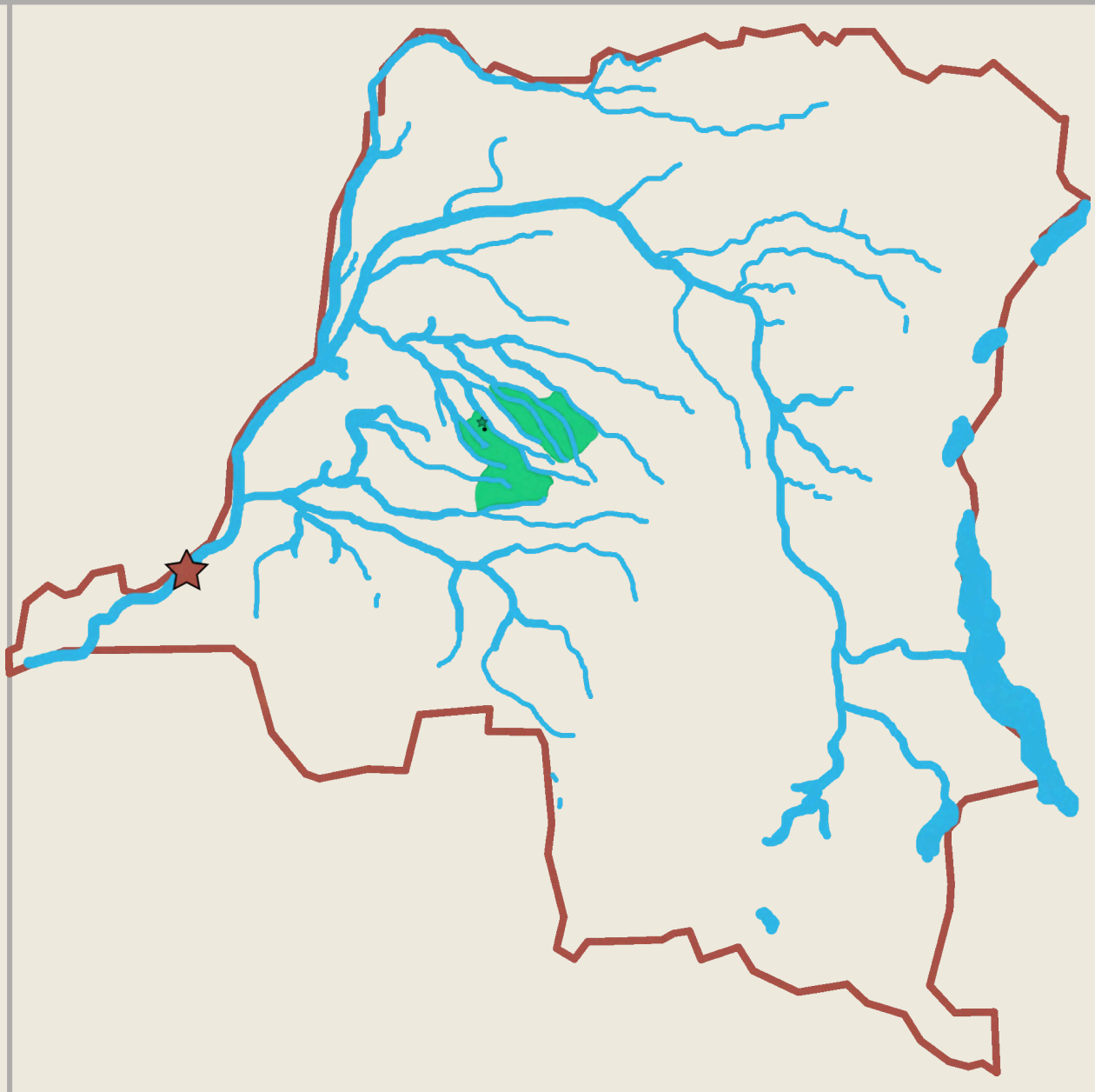
Monkoto, Salonga National Park, DRC:
A highly remote and ecologically vital area, accessible primarily via river pirogue (see the above boats). The clinic's placement was selected for:

- Proximity to park headquarters and existing infrastructure
- River access for material transport

03. Logistics

Design decisions were driven by logistical constraints, including:

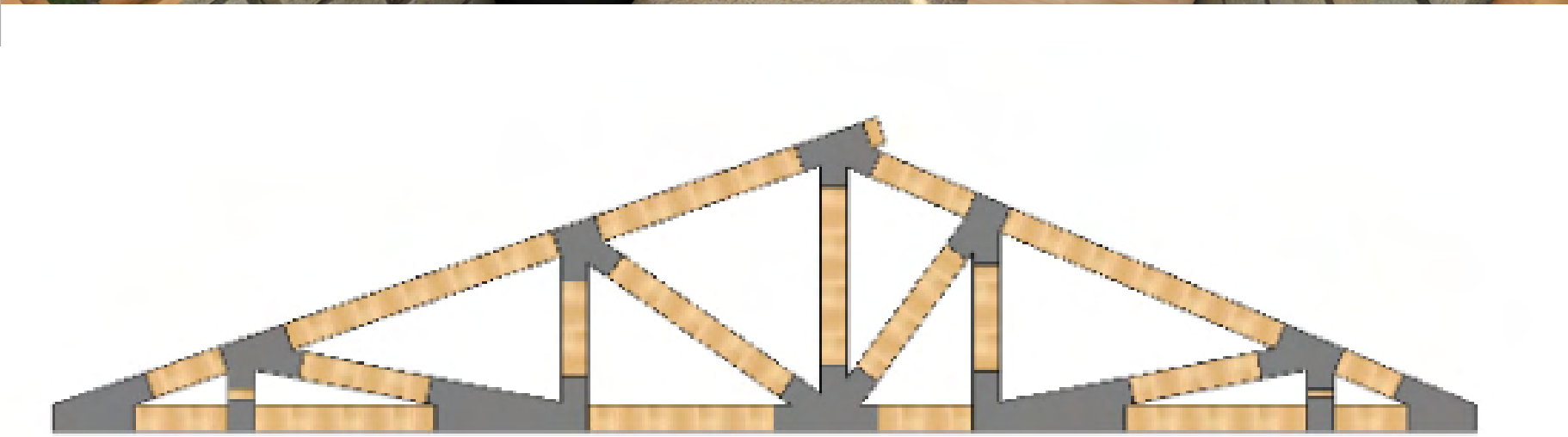
- Extremely remote location
- High humidity and rainfall
- Unskilled construction labor and maintenance must be minimal



04. Interior Design

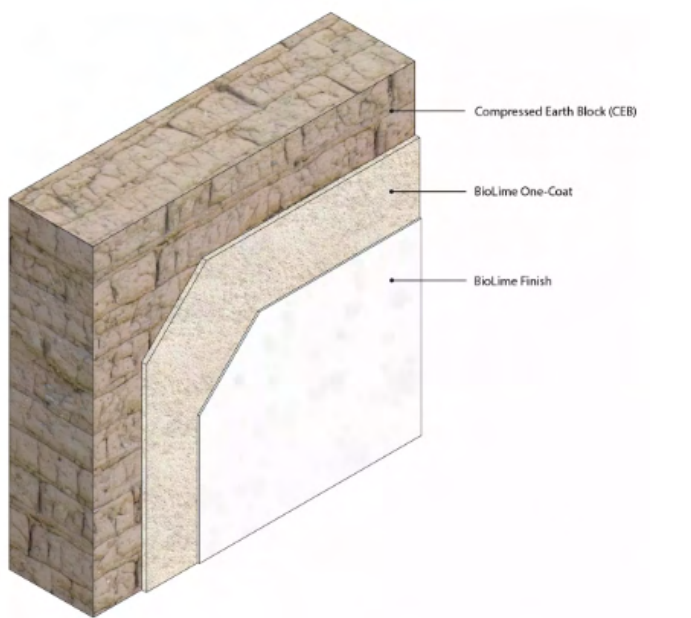
The clinic features an I-shaped layout to enhance cross-ventilation and daylighting. Key elements include gender-specific entrances, outdoor waiting areas that also serve as health education spaces, and essential rooms like a birthing room, pharmacy, exam rooms, and patient beds.

FLOW DIAGRAMS & CONSTRUCTION DRAWINGS AVAILABLE IN HANDOUT



05. Structure (NDS & ACI 318-19)

- Roof: Staggered cloistered gable form enhances ventilation and rainwater shedding
- Trusses: 6x10 solid-sawn lumber
- Plates: 1/4" thick A36 steel (custom profile)
- Beams & Columns: 10x18" and 12x12" reinforced concrete



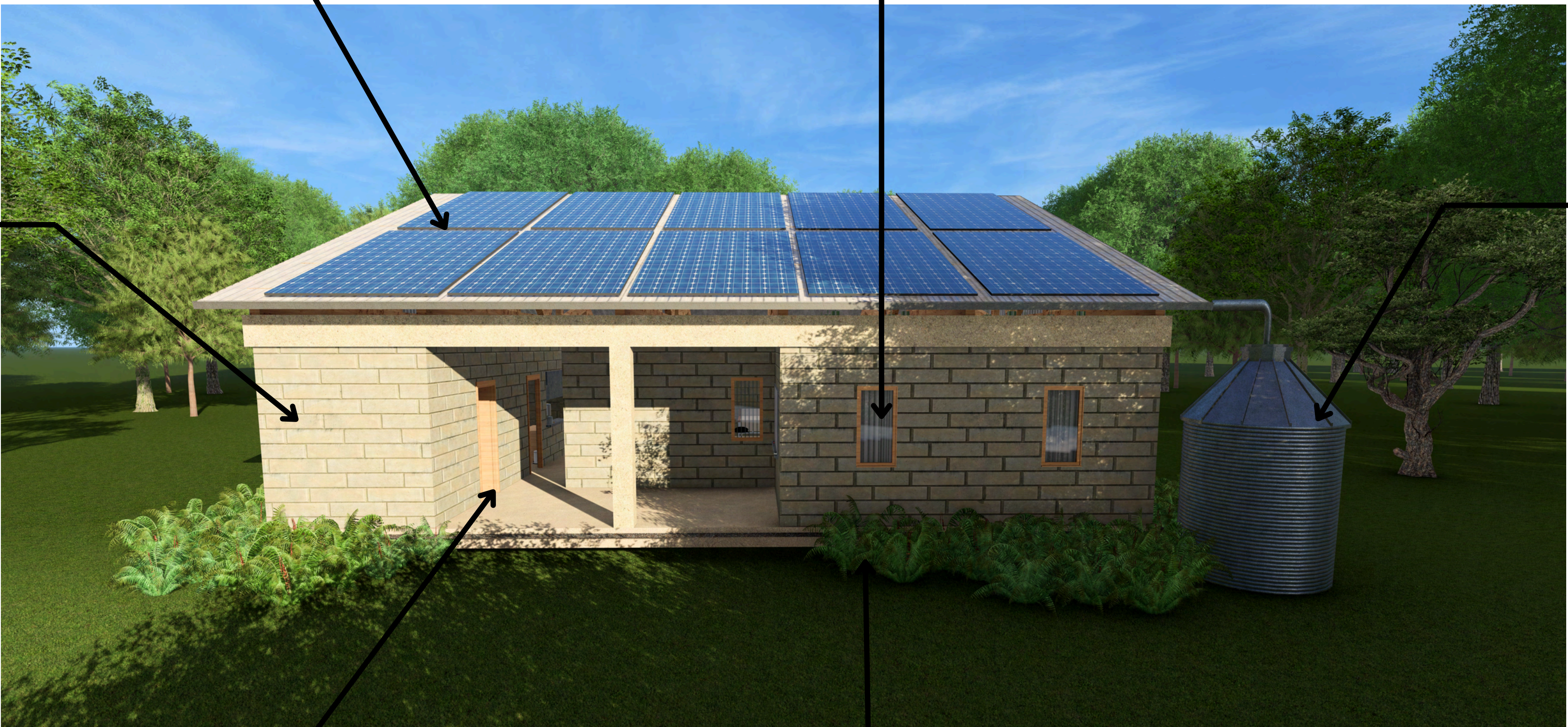
STRUCTURAL AND SOLAR PANEL
CALCULATIONS AVAILABLE IN HANDOUT

06. Exterior Design

- Solar Panels:**
- 10x TSM-DE09R.08 monocrystalline panels
 - Max Output: 435 W per panel
 - Efficiency: 21.8%

- Windows:**
- Fitted with mosquito screens to reduce malaria risk
 - Protected with steel bars for monkey-proofing and added security
 - Operable design supports passive cross-ventilation

- Bricks:**
- Baked compressed earth bricks
 - Can be made onsite, minimizing transport logistics and cost



- Cistern:**
- Collects runoff from gable roof
 - UV filtration system integrated inside

- Courtyards:**
- Cultural separation honored with one for men and one for women
 - Outdoor waiting supports cultural norms and reduces indoor crowding
 - Includes a blackboard for health education, community messaging, and clinic communication
 - Acts as a flexible, multipurpose gathering space

- Landscaping:**
- Lemongrass, Citronella, and Aster: drought-tolerant, mosquito-repelling plants
 - Planted along a French drain system to manage heavy rainfall
 - Plants help absorb runoff and reduce erosion around the foundation
 - Improves comfort, reduces disease risk, and requires minimal maintenance