

Case Study Summary: 5-Storey Apartment Block – Githurai, Nairobi

Project Overview

The project involved the design and construction of a 5-storey residential apartment block in Githurai, Nairobi. The building comprises 25 residential units, including a mix of 1-, 2-, and 3-bedroom apartments, aimed at middle-income residents. The structure is reinforced concrete framed, adhering to the Kenya Building Code and Nairobi City County regulations.

Objectives

- Provide safe, modern, and affordable housing in Githurai.
- Maximize usable space on a constrained urban plot while maintaining open spaces and parking.
- Incorporate modern amenities such as secure parking, common recreational areas, and balconies.
- Ensure sustainable design practices including natural ventilation, energy efficiency, and water conservation.

Design Highlights

- **Structural System:** Reinforced concrete frame with columns, beams, and slabs designed for durability and load-bearing capacity.
- **Architectural Layout:** Efficient apartment layouts with adequate natural lighting and ventilation; each unit has balconies.
- **Finishes:** Durable and quality finishes such as tiled living areas, laminated kitchen counters, and waterproofed wet areas.
- **Utilities:** Mains water, sewerage, electricity; provision for solar water heating and potential rainwater harvesting.

Construction Methodology

- **Site Preparation:** Excavation, grading, and proper drainage setup.
- **Foundation:** Combination of strip and isolated pad foundations based on soil testing results.
- **Superstructure:** Reinforced concrete frame with blockwork infill walls.
- **Roofing:** Flat roof with waterproof membrane and optional rooftop terrace.
- **MEP Works:** Installation of electrical wiring, plumbing systems, and other mechanical works in compliance with standards.

Challenges

- **Urban Site Constraints:** Limited space for storage, machinery, and vehicle movement.

- **Material Logistics:** Accessing the site with large quantities of construction materials on narrow roads.
- **Regulatory Approvals:** Ensuring compliance with county building codes, environmental, and fire safety regulations.

Outcomes

- Successfully completed within a projected 20-month construction timeline.
- Delivered 25 modern, safe, and functional apartments.
- Achieved compliance with structural safety, accessibility, and fire safety standards.
- Enhanced the local community by providing quality housing and improving urban infrastructure.

Lessons Learned

- Early planning for logistics and material storage is crucial in dense urban areas.
- Engagement with local authorities early in the project facilitates approvals.
- Sustainable building features improve efficiency and long-term value for residents.