

Case Study Summary: 5-Storey Apartment Block in Ruiru, Kiambu County

Project Overview

This project involved the **construction of a 5-storey residential apartment block** in Ruiru, Kiambu County. The development was designed to address the increasing demand for **modern rental housing** in the rapidly growing Ruiru area, which has become a key residential hub due to its proximity to Nairobi.

The project focused on **efficient land utilization, structural integrity, and comfortable living spaces**, making it suitable for middle-income residents and young professionals.

Project Location

- **Location:** Ruiru, Kiambu County, Kenya
 - **Setting:** A fast-growing urban residential area with strong demand for apartment housing
 - **Accessibility:** Located near the **Thika Superhighway**, providing convenient connectivity to Nairobi CBD and Thika Town
 - **Infrastructure:** Access to electricity, water supply, sewer systems, and public transport services
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Project Scope

The project involved the development of a **five-storey reinforced concrete residential apartment building** consisting of multiple self-contained residential units.

Key components included:

- Multiple **one-bedroom and two-bedroom apartment units**
- **Reinforced concrete structural framework** including columns, beams, and slabs
- Shared **staircase and circulation areas**
- Ground floor **parking and access area**
- Water storage tanks and drainage systems

The construction works included:

- Site preparation and building setting out
- Excavation and reinforced concrete foundation works
- Structural framework construction (columns, beams, and slabs)
- Masonry wall construction using machine-cut stones

- Roofing and waterproofing works
 - Internal and external plastering
 - Floor finishing works
 - Plumbing and sanitary installations
 - Electrical wiring and installations
 - Installation of doors, windows, and fittings
 - Internal and external painting works
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Design Considerations

The design of the apartment building incorporated the following key considerations:

- **Efficient land use** to accommodate multiple housing units
 - **Structural stability and safety** through reinforced concrete structural systems
 - **Adequate natural lighting and ventilation** for each apartment unit
 - **Durable construction materials** to minimize maintenance costs
 - **Functional circulation areas** including staircases and corridors
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Construction Approach

The construction was carried out through structured phases to ensure quality control and project efficiency:

1. Site preparation and excavation
 2. Reinforced concrete foundation construction
 3. Structural framework construction for all floors
 4. Masonry walling and roofing works
 5. Internal and external finishing works
 6. Installation of plumbing and electrical systems
 7. Final finishing and painting works
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Project Outcome

The project successfully delivered a **modern 5-storey apartment block** providing multiple residential units suitable for rental housing. The development increased housing supply in Ruiru while maximizing land use in a rapidly urbanizing area.

Conclusion

The **5-storey apartment block in Ruiru, Kiambu County** demonstrates effective urban residential development through **efficient design, strong structural construction, and modern housing standards**, contributing to the growing demand for quality apartment living within the Nairobi metropolitan region.