THE NATIONAL BUILDING CODE, 2024

POPULAR VERSION

NATIONAL CONSTRUCTION AUTHORITY

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1.0 PREFACE

The previous Building Code:

1. Was in an application for over for over 50 years and had not been revised since;
2. Did not adopt any known international building standards;
3. Was material-based and recognized only conventional building materials like stones, timber, and mortar in its application. This orientation failed to take into account modern building technologies, and;
4. Was designed for implementation and enforcement by local governments (now county governments) as opposed to an independent and well-capacitated oversight authority. This led to a lack of proper implementation of the Code and therefore compromised the quality of many buildings.

The core objective of the new Code is to prescribe improved standards in building design, construction, and maintenance that reflect the best practices in the built environment that promote quality, safety, health, and acceptable environmental norms in the sector.
The Code also creates a regulatory platform that fosters collaboration and compliance of all stakeholders in the construction industry.

The shortcomings of the previous Building Code (1968).

The specific outcomes of the Code include:

1. Certainty that qualified professionals are undertaking building design, construction, supervision, and inspection of construction works;
2. Durability of buildings that are designed, constructed, and can be used in ways that promote sustainable development;
3. The minimization of harmful effects on human health resulting from the use of building methods, products, design or building work;
4. Innovation and flexibility in design, building materials, technologies, and construction in line with adopted international standards;
5. Providing for fire safety by limiting the extent and effects of the spread of fire;
6. Protecting other property from physical damage resulting from the construction, use, and demolition of a building;
7. Ensuring the design of buildings to provide for LPG Gas connections
8. Providing for the design and adaptation of buildings to digital connectivity
9. Providing for universal access standards to all types of buildings;
10. Preserving buildings of significant cultural, historical, or heritage value;
11. Ensuring energy use in buildings is efficient and promoting renewable sources of energy in line with Climate Change commitments;
12. Minimizing and ensuring proper management of construction waste, and;
13. Structural design that provides for multi-hazard resilience.

Purpose

The purpose of the popular version of the Building Code is to ensure the safety, health, and welfare of the general public by outlining specific guidelines and standards for various aspects of building design, construction, and maintenance.
It will also serve as a quick reference to the Code.

Benefits

Increased public awareness and education
Improved Compliance
Enhanced safety and risk mitigation
Enhancing sustainable practices
Reduction of informal and unsafe construction
Enhanced safety standards
Enhanced alignment with National Development Goals; Affordable Housing and Sustainable Infrastructure
Promote accountability and transparency
Stakeholder engagement.

Disclaimer: This popular version does not amend or change the provision of the gazette version of the Building Code.

2.0 LEGAL FRAMEWORK

2.1 The Constitution of Kenya 2010

Article 43 (1) (b) of the Constitution of Kenya, 2010 has guaranteed every person a right to accessible and adequate housing and reasonable standards of sanitation. Article 46 (1) (a) provides for a right to goods and services of reasonable quality to consumers.

Article 66 of the Constitution obligates the State to regulate the use of any land, or any interest over any land, in the interest of defence, public safety, public order, public morality public health, or land use planning.

2.2 National Construction Authority Act, 2011

In furtherance of the above-mentioned Constitutional provisions, the National Construction Authority is established under Section 3 of the National Construction Authority Act No. 41 of the 2011 Laws of Kenya to regulate the construction industry. It is also mandated to regulate, streamline, and build capacity in the industry by ensuring that all construction activities are conducted as per the National Construction Authority Regulations.

Section 5(h) encourages the standardisation and improvement of construction techniques and materials.

2.3 Code of Conduct for the Construction Industry

In fulfillment of Section 5(2) (m) of the NCA Act 2011, the National Construction Authority developed and published a Code of Conduct for the construction industry. It outlines the role of each party in the construction industry value chain, to ensure adherence to the minimum acceptable and professional conduct as laid down in the Code.

The Authority under Section 5 (2) (ga) is empowered to enforce the Building Code in the construction industry.

Pursuant to the provisions of Section 42 of the NCA Act, the Cabinet Secretary responsible for Public Works in consultation with the Board of the Authority developed the National Building Code 2024. This was published as legal notice No. 47 on 1st March 2024 repealing the "Local Government (Adoptive By-Laws) (Building) Order 1968"

3.0 MAIN PARTS OF THE NATIONAL BUILDING CODE, 2024

3.1 SECTION 1: INTRODUCTORY AND EXPLANATORY PARTS OF THE BUILDING CODE

PART 1 - PRELIMINARIES

a) Citation and Commencement

The Code may be cited as the National Building Code, 2024, and shall come into operation one year after publication, 1st March 2025.

b) Interpretation

This Part has highlighted and explained what certain terms of the Code mean, to provide clarity and ensure the Code is understood and adhered to correctly.

Under the interpretation, there are 503 definitions of terms under paragraph 2.

c) Purpose of Code

The purpose of this Code is to promote order and safety in construction works and the health and safety of persons in or about construction works.

d) Scope of Code

This Code is aimed to provide;

1. Standards for the design, construction, operation, inspection, and maintenance of a building;
2. Standards for design, building materials, products, elements, systems, and building services;
3. Standards for infrastructure services;
4. Standards for the operations and works at a construction site;
5. Standards for disaster management at a construction site; and
6. Standards for the safety and security of the users and occupants of a building.

It shall not apply to the construction and maintenance of a single-storey residential building which is occupied by the owner and is constructed of locally available materials whose design is influenced by the culture and traditions of the area where the building is sited.

Compliance with applicable laws.

A person who engages in construction works, or a person who owns or occupies a building shall comply with this Code.

A person who intends to undertake any construction works shall be required to obtain the following;

1. A development permission in accordance with the Physical and Land Use Planning Act, 2019;
2. An environmental impact assessment licence issued in accordance with the Environmental Management and Coordination Act, 1999;
3. A compliance certificate issued in accordance with the Act; and

4. Any other applicable approval

Supervision of construction works.
The preparation of the design and supervision of the works in a building shall only be undertaken by a professional in the respective fields of specialization.

The professional includes; a physical planner, architect, engineer, land surveyor, building surveyor, quantity surveyor, site supervisor, and skilled worker, duly registered under the relevant law.

A "contractor" has the meaning assigned to it under in section 2 of the Act whose obligations are highlighted under Paragraph 466 of the Code.

PART XXV (25) - MISCELLANEOUS

This part covers paragraph 517 of the Code.

The National Building Code, 2024 therefore revokes the Local Government (Adoptive By-Laws) (Building) Order, 1968.

This Section has also highlighted tables under the first schedule and figures under the Second Schedule which may be used as quick references for architects and engineers in designing layouts externally and internally. They also give indications of dimensions and strength requirements for select building elements.

SECTION 2: EXTERNAL AND INTERNAL LAYOUT OF BUILDINGS

PART II (2) - SITING AND SPACE ABOUT BUILDINGS

This part covers paragraphs 7 - 34 of the Code.

Deals with compliance to basic physical planning dealing with dignity, amenity and general appearance of neighborhood. Among the requirements: -

1. Not building on dumping sites or sites prone to hazardous substances, strong winds, seismic action, or floods
2. The site should have definite access, be serviceable, and buildings are to have frontages meeting the standards set in the BC while their enclosures should be as specified in the BC including instances of electric fences and razor wire. In specific instances, service lanes may be required. For buildings going beyond 6 floors, secondary access is required
3. Sizes of front, back, and side open spaces as well as courtyards for buildings.
4. For raised spaces, protection edges are required and their specifications are embodied in the BC
5. Eaves and balconies or other projections over roads are limited to the depths specified in the BC while canopies are not to have doors accessing them.
6. Stipulations as to the external walls, openings, and minimum kitchen sizes for multiple tenancy houses
7. Combustible materials to be properly enclosed and so should timber yards. Temporary buildings and hoarding of construction sites to be as specified

8. New buildings should not obstruct views on roads or adjacent buildings. They should not also reduce light and ventilation of other buildings

PART III (3) - PARKING SPACES

This part covers paragraphs 35 - 46 of the Code.

These are stipulated mostly for commercial and other public buildings and should take into types of account vehicles, garage access ramps, barrier control types, column guards, and signage. The other stipulations include: -

1. Allowing for charging of electric vehicles (New in BC 2024)
2. Pedestrian guarding including the design thereof
3. The gradients of vehicle ramps, driveways, pedestrian ramps, access ramps whether straight or curved
4. Provisions of parking slots for housing, shopping and large lorries and buses where required

PART VII (7) - SPACES WITHIN BUILDINGS

This part covers paragraphs 87 - 96 of the Code

For purposes of understanding this part rooms are divided into habitable, multi-purpose, and other rooms. Provisions include: -

1. Minimum area of a habitable room and how to calculate space requirements based on the number of persons using such a room
2. How the plan dimensions are construed
3. Reference is given to minimum height requirements for rooms and how such dimensions are to be measured.
4. Storey heights are also defined and how they are to be measured
5. Minimum dimensions of landing, staircase width, and maximum distance to stairs
6. Swimming pool installations should be as per KS 2793

3.3 SECTION 3: BUILDING MATERIALS AND CONSTRUCTION

3.3.1 PART IV (4) - PREPARATION OF CONSTRUCTION SITE

This part covers paragraphs 47 – 57 of the Code.

It outlines regulations for construction site preparation in Kenya, requiring owners to install boundaries to prevent public access and protect the site. It also addresses unstable soil or slopes, requires proper site preparation, and mandates controlling of dust and noise pollution. Authorities can order investigations and demolition of construction works not in compliance with the code. Accumulated waste materials must be removed, and the site must be cleaned after completion. Facilities like sanitary amenities and contractor sheds are required, with specific guidelines for their construction and maintenance. Owners must ensure the protection of a construction site and prevent public access before starting any building activities. They also have responsibilities in indemnifying against expenses and damage caused to public facilities during construction works. The National Building Code 2024, also provides guidelines for managing dust and noise levels on a construction site.

3.3.2 PART V (5) - BUILDING MATERIALS

This part covers paragraphs 58 – 59 of the Code.

It prohibits the use of non-building materials in construction works. The materials must be suitable for their intended purpose, adequately mixed or prepared, and applied, used, or fixed to perform their intended functions. The use of any material, method of mixing, preparing materials, applying, using, or fixing materials must conform to the standards and codes of practice developed under the Standards Act. Compliance is considered sufficient if the material or method used conforms with the latest edition of the standard or code and any published amendments, and is appropriate for the purpose and conditions for which it is used. Used material can only be used on construction works if it meets the performance requirements of the corresponding relevant standard issued under the Standards Act

3.3.3 PART XXIII (23) - DISASTER RISK MANAGEMENT ON CONSTRUCTION SITES

This part covers paragraphs 462 – 495 of the Code.

The provisions of this part enjoin all parties involved in the pre-construction, construction, and post-construction stages of building projects to adhere to guidelines on disaster management. There is to be proper coordination and the owner should give the contractor pre-construction information to the contractor. The owner is to ensure that designs done or design-reviewed outside Kenya comply to the BC (465). Some of the major provision include: -

1. Health and safety file to be maintained (467) per site or number of sites under the same owner. Key contents of the file are to be found in 467(3) and it should be available for inspection
2. A construction site shall be safe to access (468(1)), without risk to health and safety of workers (468()2), restricted to authorized persons (468(3)), have sufficient working space for the construction worker and his tools
3. Stability of the constructed works or those under construction
4. Standards for a working platform whether used for footing or includes depositing or conveying of materials
5. The standards for ladders used in construction works
6. Positioning of [bulk] materials in relation to excavations
7. Adequate safety and ventilation for all manner of confined spaces
8. Construction in water or other liquid where there is risk of drowning should reduce risk of fall, drowning if fall occurs
9. Pedestrian and vehicular traffic separation during construction as well as ensuring safety and health where they crisscross
10. Requirement for preparation and dissemination of emergency plans by the owner
11. Where artificial means of ventilating enclosed spaces are used, the users should be able to detect failure when it happens.
12.

3.4 SECTION 4: BUILDING ELEMENTS

3.4.1 PART VIII (8) - FLOORS

This part covers paragraphs 97 – 100 of the Code.

Strength, fire resistance, and water resistance are among the standards for building floors outlined in part VII of the National building Code, 2024. Water-resistant and non-slip floors are required in bathrooms, shower rooms, laundry rooms, and rooms with urinals or water closets. Underfloor ventilation is a necessary for timber suspended flooring. It is necessary to build concrete floor slabs on the ground or filling to stop moisture intrusion. Ground or infill floors need to be at least 40 mm thick and impervious. Black cotton soil must be excavated to a minimum depth of 0.9 meters before being filled with appropriate hard core that has been consolidated and blinded if a floor is to be built on it.

3.4.2 PART IX (9) -WALLS

This part covers paragraphs 101 – 132 of the Code.

Part IX of the Building Code outlines the requirements for walls, including structural strength, stability, fire safety, fire resistance, and material use. Masonry walls must be constructed according to Table 11 and Table 12 of the First Schedule, with gable walls having adequate lateral support. If an intersecting masonry wall is used for lateral support, it must be constructed of a masonry unit or mortar of the same strength as the wall it supports. The storey height must be measured from floor level to floor level, and the maximum height of any wall panel must be equal to the relevant storey height.

A wall must have structural strength and stability to safely withstand loads and transfer them to the foundation. If a roof truss, rafter, or beam is supported by a wall, it must be fixed to the wall to withstand any force subjected to the roof. The roof should be fixed in a manner that directs rainwater away from the walls.

Masonry units used in a wall must be constructed according to empirical regulations for walls, such as KS 547, KS 625, KS 2023, or KS EAS 54. Mortar used in the erection of a building must be prepared in accordance with Table 9 and Table 10.

External masonry cladding or infilling panels in framed buildings must be horizontally and vertically anchored to the structure. Cladding must be supported on beams, slabs, or nibs at each storey, with movement joints provided at intervals not exceeding 10m to allow for relative horizontal movement. Masonry walls are essential for building construction and must meet certain standards.

3.4.3 PART XI (11) - GLAZING AND CLADDING

This part covers paragraphs 172 – 193 of the Code.

Part XI of the building code, mandates that glazing materials in buildings must be secure, durable, and visually manifest. It requires glass, plastic, and organic coated glass to have appropriate safety measures based on the glazed area and the number and likely behavior pattern of persons in close proximity. Vertical glazing installations must adhere to BS 8000-0:2014, while horizontal glazing must be installed in a frame that sustains the total

wind load for which the pane was designed. Safety glazing is required for doors, bath enclosures, shower cubicles, shop fronts, walls, balustrades,
staircases, and landings.

Permanent screen protection in glazing must prevent a 75mm diameter sphere from coming into contact with the glazing and be robust. Manifestation is required in certain circumstances, such as doors with transparent glazing less than 400mm in width, doors with transparent glazing with a rail at a height between 600mm and 1500mm above a finished ground or floor level, single pane glazed doors with substantial framing, or single pane glazed doors with large easily seen push or pull handles.

Curtain walling glazing in buildings exceeding two storeys in height must be installed in accordance with BS 6262, with shop drawings prepared by the architect in consultation with a specialized manufacturer. Stone cladding installation requirements include compliance with BS 8298, mechanical stainless-steel fixing for precast concrete panelling, and noncombustible material for cladding systems.

3.4.4 PART XII (12) - STAIRCASES, LIFTS AND ESCALATORS

This part covers paragraphs 194 – 236 of the Code.

A building over one storey must have at least one staircase to access the upper floors, with a clear height of at least 2m and a width of at least 900mm. The staircase must be constructed in accordance with KS ISO 21542, have natural lighting and ventilation, and have an unrestricted area at each landing. If an escalator is installed, the owner must ensure a staircase is also constructed in the building. A means of escape in case of an emergency and an additional staircase must be provided for firefighters. The staircase must be designed to ensure firemen can access the fire and be adequately protected from fire and smoke. The Kenya Subsidiary Legislation, 2024, outlines requirements for staircases in various occupancy categories, including those with a winder, secure wall, screen, railing, or balustrade, and handrails installed in accordance with KS ISO 21542. Staircases are classified into private, institutional, assembly, and other types, with the normal relationship between the dimensions of the rise and tread being between 550mm and 700mm.

The Building Code, 2024, outlines the requirements for staircases, lifts, and hoists in buildings. A staircase must have handrails on both sides and be guarded at the sides to prevent children from being held fast. Lifts must be impervious to moisture and fully enclosed with incombustible material, separated from the lift well. In an enclosed lift well, a smoke outlet to the open air must be provided, and the motor room must be cross-ventilated, have an approved window space, and permit unobstructed circulating passage between the lift motor equipment and the external walls.

The installation and operation of a passenger lift must follow KS ISO 4190 and KS 2169-1 safety rules, and an escalator must be installed and operated in accordance with KS 2291-1. The minimum dimensions of a lift well, entrance pit, machine room, or headroom must meet structural design requirements to carry the lift car and maximum load safely. Access to inspection doors, emergency doors, or inspection traps must be prohibited.

A lift well must be suitably ventilated, not used to provide ventilation to another room other than a room used for the service of the lift. The structure of a lift well must support any load applied by the machine, guides, buffers, safety gear, clamping device, or other devices. Access to machine rooms and pulley rooms must be clear and safe, with a minimum height of 2m and a door sill or edge not exceeding 400mm allowed. Trap doors must have a clear passage of at least 800mm x 800mm and be counter-balanced.

A machine operating a lift and its ancillary equipment must be accommodated in an enclosure within a lift well or in a separate machine room. The machine room must be weather-proof, dry safe, and accessible for maintenance personnel. A separate machine room or a separate driving and return station is provided for accommodating the equipment necessary for the operation of a lift and an escalator.

3.4.5 PART XIII (13) - ROOFS

This part covers paragraphs 237 – 243 of the Code.

The Building Code 2024, outlines the construction of a building's roof, which must resist force, be durable and waterproof, prevent rainwater accumulation, provide adequate height, and reduce heat island effect and heat stress. A roofing structure design must be prepared by an engineer or architect. Timber roofs must be designed and installed in accordance with KS EN 1995 (Design of Timber Structures), except for softwood timber grades. Timber must be of sufficient quality and strength, well-seasoned, free from rot, beetle, or other vermin, and not contain large loose knots, splits, or defects that render the timber member inadequate in strength, stiffness, or durability.

Timber roof trusses and other roof framing must have all joints accurately cut, securely made with approved material, and fitted tightly together. If steel or aluminum is used for a roof structure, the design must be in accordance with KS EN 1993 (Design of steel structures) or KS EN 1999 (Design of aluminium structures).

For timber used for structural roof components, the sizes in Table 31 can be used. For roof or ceiling assemblies with light fittings or other components that penetrate the ceiling assembly, the degree of non-combustibility must be in accordance with Part XXI.

If a roof requires waterproofing, an owner must ensure the roof is waterproofed in accordance with various standards. Roofs with a covering of one of the materials in Table 4 should be constructed to a slope of at least the minimum angle of slope given in Table 4. Metal roof tiles may be used over existing roofs, and flashing should be used when a nominally flat roof is used.

3.5 SECTION 5: PART VI- STRUCTURAL DESIGN

This part covers paragraphs 60 – 86 of the Code.

A building is a constructed **structure** designed to provide shelter, accommodate human activities, or house equipment and operations.

They are typically composed of multiple interconnected systems and materials to ensure durability, safety, and usability.

Structural design is the process of creating a safe and functional structure that can withstand all expected loads and stresses during its lifespan.

It involves analysing, planning, and detailing the structural elements of buildings, bridges, towers, or other infrastructure to ensure stability, strength, and durability while meeting safety and regulatory standards.

The Structural Design section (Part VI), paragraphs 60 to 86, of the National Building Code outlines the structural standards and requirements for the safe construction of buildings and related structures.

It ensures that buildings can withstand expected loads, environmental conditions, and other stressors while protecting public safety and maintaining structural integrity.

Below is an account of the main considerations of structural design in the Building Code:

1. General Principles

Design Standards:

All structures must adhere to recognized engineering standards, using reliable design methods and materials.

Load Considerations:

Buildings should be designed to resist all probable loads, including; Dead loads (permanent fixtures and materials), Live loads (temporary or variable loads such as occupants and furniture), and Environmental loads (wind, seismic, and thermal effects).

2. Materials and Construction

The Code Specifies the use of approved construction materials, including concrete, steel, timber, and masonry, ensuring quality, durability, and performance. This requires testing and certification of materials to meet prescribed standards.

3. Design Approaches

Limit State Design:

Encourages the use of the limit state method, considering both safety and serviceability conditions.

Methods: Allows alternative design approaches (e.g., working stress method) if they meet the required safety standards.

4. Structural Stability

Ensures buildings are stable under anticipated conditions, such as uneven settlement or lateral forces.

Requires provisions for robustness to prevent progressive collapse in case of localized failure.

5. Seismic and Wind Resistance

Buildings in seismic-prone areas must include earthquake-resistant design features.
Requires wind load analysis for high-rise structures to account for aerodynamic forces.

6. Foundations and Soil Considerations
Foundations must be designed based on thorough soil investigations, considering load-bearing capacity and settlement behaviour.

Includes guidelines for shallow and deep foundation designs.

7. Safety Factors
Mandates safety factors to account for uncertainties in material properties, loads, and construction practices.

8. Inspection and Maintenance
Requires regular inspection during construction to ensure compliance with design specifications.

Stresses the importance of ongoing maintenance for structural safety

9. Special Structures
Additional provisions for unique structures, such as bridges, towers, or industrial facilities, ensure they meet specialized performance requirements.

10. Compliance and Documentation
All structural designs must be certified by a licensed structural engineer.

Requires detailed documentation, including calculations, drawings, and report

1. Importance of Structural Design:
2. Ensures the safety and stability of structures.
3. Prevents structural failures or collapses.
4. Enhances durability and minimizes maintenance needs.
5. Facilitates efficient use of resources and materials.
6. Aligns with regulatory requirements and environmental considerations.

These provisions aim to ensure that all structures in Kenya are safe, durable, and fit for their intended purpose, considering local environmental and geographical conditions. For detailed and specific guidelines, the official National Building Code should be consulted.

3.6. SECTION 6: INSPECTION, MAINTENANCE AND DEMOLITION OF BUILDINGS

PART XXII (22) - DEMOLITION OF BUILDINGS

This part covers paragraphs 451 - 461 of the National Building Code

Guidelines:

Support for Basements: If demolishing a building with a basement, the owner must provide safe lateral support to the basement walls to prevent collapse or other risks.

Responsibility for Road Damage:

If demolition or construction damages a road:

1. Authorities can issue a written notice requiring the owner to repair the damage within a specific timeframe.
2. Alternatively, authorities may carry out the repairs themselves and recover the costs from the owner.

Preparations Before Demolition:

Owners must:

1. Ensure no one is inside the building or its surroundings.
2. Disconnect and remove utility meters (gas, water, electricity) unless required for the work.
3. Disconnect gas and electricity supplies completely.
4. Remove fittings attached to the building that connects to public services like road lighting or electricity.

Safety Measures for Public Areas:

If the building borders roads or public spaces:

1. Install fans, catch platforms, or dust screens along walls to prevent risks from falling debris, dust, or materials.
2. Ensure these platforms are positioned at regular intervals (not exceeding 10m vertically) and appropriately below the working level.
3. Remove glass sashes, doors, and similar fixtures.
4. Seal sewer and drainage connections.

Shoring (support) to Prevent Collapses:

Before and during demolition, provide adequate shoring (with approved timber or metal supports) to prevent accidental collapse of the building or nearby structures.

Electric and Utility Safety:

Electrical cables not used in the demolition must not carry power. Owners must also prevent hazards such as fire, explosions, or flooding caused by gas leaks, water mains, or sewer failures.

Debris Management:

Debris and materials must be safely removed using chutes, installed to prevent risks to people or property. Floors or other parts of the structure should not be overloaded with materials, and debris must not pile up against fences or walls in ways that make them unstable.

Supervision and Skilled Work:
Demolition works must be carried out under the supervision of a qualified architect or engineer. Risky tasks such as cutting steel, breaking concrete, or using heavy machinery must only be done by skilled workers under direct supervision.

Steel and Frame Demolition:
When removing steel or structural frames, precautions must be taken to avoid sudden collapses or dangerous shifts.

Fire, Explosion, and Flood Risks:
All external building openings must be secured to prevent hazards from gas, water, or structural failure. The owner is responsible for minimizing these risks during the entire process.

Use of Machinery:
Any heavy equipment used in demolition must be operated by experienced personnel under the supervision of a professional architect or engineer.
These regulations ensure that demolition is carried out safely, minimizing risks to workers, the public, and the surrounding environment.

PART XVII (17) - INSPECTION AND MAINTENANCE

This part covers paragraphs 335 - 337 of the Code.

Buildings must be inspected every five years after completion. Inspection types include:

1. Visual inspection: Evaluate the building's condition and surroundings.
2. Full structural or civil inspection: Assesses structural integrity.
3. Building condition survey: Reviews the overall state of the building
4. Building services inspection: Examines electrical and mechanical systems.
5. Specialized building investigation: Focuses on specific issues.

A licensed building surveyor coordinates all inspections, particularly the condition survey.

Inspection Procedures
1. Inspections begin after the construction has been completed and an occupation certificate is issued.
2. Visual inspections examine elements that hold the building, any later additions, slopes, and drainage systems.
3. The assessment report is given to the owners; based on the outcome, further investigations may be recommended.

Detailed Assessments
These may involve:
1. Reviewing the building's design, construction, and maintenance history.
2. Checking structural plans and conducting non-destructive tests.
3. Testing materials and suggesting remedial actions to maintain stability and safety.

Remedial Works

1. Classified as building works, these include:
2. Replacing corroded reinforcement bars.
3. Reconstructing water tanks.
4. Rewiring and underpinning.

All remedial works must comply with recommendations and be inspected by a registered professional, who submits a final report.

3.7. SECTION 7: QUALITY AND WELLNESS IN CONSTRUCTED BUILDINGS

PART X (10) - LIGHTING AND VENTILATION

This part covers paragraphs 133 -171 of the Code.

Provision of natural lighting and ventilation is to ensure the rooms are should not cause detriment to health, safety or constitute a nuisance. Some of the provisions include: -

1. Minimum number of openings for purposes of light and air
2. Circumstances under which artificial lighting or ventilation should be used
3. Ensuring sufficient ingress of natural air and light. Calculation of sufficiency of space beyond the walls for sufficiency is given in the code
4. Calculation of size of openings for purposes of natural ventilation
5. How to undertake natural lighting and ventilation when opening to balconies, galleries, verandahs or courtyards
6. Windows to directly open to external air and minimum area as set in the code. Maximum depth of 9 metres for a wall to serve a room. Unobstructed frontage to a window is also specified
7. Cross-ventilation requirement and permanent vents to habitable rooms. Nuisance of insects should be mitigated without compromising natural ventilation
8. Ventilation for veracious classes of buildings
9. Space heating
10. Chimneys and hearths
11. Ventilation for spaces designated for special activity
12. Ventilation of roof spaces
13. How to go about providing additional ventilation
14. Maximize on energy efficiency in use of artificial system of lighting, ventilation, AC or heating
15. Provision for renewable energy sources as part of sustainable building design
16. Lighting and ventilation for rooms soil water or waste fitment

SECTION 8: INTERNAL AND EXTERNAL SERVICE SYSTEMS OF BUILDINGS

PART XIV (14) - WATER SERVICES, DRAINAGE, WASTE DISPOSAL AND STORM WATER DRAINAGE

This part covers paragraphs 244 - 311 of the Code, and provides standards for design, building materials, products and systems for water services, drainage, and waste disposal.

Below are the main considerations of this part of the code.

General

Design Standards

All installations must adhere to recognized standards using reliable design methods and materials.

Preparation of designs and supervision of works

Preparation of designs including supervision of works during the building construction phase shall be carried out by a registered licensed professional (mechanical engineer) as per provisions of paragraph 6 of the Code.

Compulsory drainage requirements

245. (1) An owner shall ensure that a suitable means of disposal of water-borne sewage is available and shall provide a drainage installation.

Control of objectionable discharge

247. (1) A person shall not cause or permit sewage discharged from a sanitary fixture to enter—

(a) a storm-water drain, storm-water sewer, an excavated or constructed watercourse;
(b) a river, stream, or natural watercourse, whether ordinarily dry or otherwise; or
(c) a road or another construction site.

(2) A person shall not cause or permit storm water to enter a sewer installation.

Conservancy tank, septic tank, French drain and soak pit

258 (2) A conservancy tank, septic tank, or biodigester, to be used on a construction site for the reception of sewage shall be—

(a) designed and constructed in such a manner that it will be impervious to liquid;
(b) sited—
(i) at a distance of between 4m and 10m from the building which is served by the conservancy tank, septic tank, or biodigester;
(ii) in such a manner that there will be a ready means for the clearing of the tank;

(iii) so as not to endanger the structure of a building or service on the construction site or neighbouring parcel of land; and
(iv) within the boundary.

Discharge from washing space

259. (1) A building used as a stable, garage, cowshed, dairy, kennel, butchery, abattoir, a vehicle washing space, or other similar space that requires regular cleaning, which produces waste water or soil water shall be connected to a drain which shall serve the building or space.

(2) The space referred to in sub-paragraph (1) shall be—
(a) paved with approved impervious material;
(b) graded to a gully which shall be fitted with a removable grating;
(c) connected to at least two approved silt traps, grease traps, petrol or oil interceptors;
(d) roofed over; and
(e) surrounded by a kerb that is at least 100mm high, or elevated above the immediately surrounding ground level by at least 100mm.

Ducts for discharge pipe

268. (2) Where a discharge pipe is located within a building and it is desired that the pipe be enclosed, it shall be enclosed within a duct.

(3) Despite sub-paragraph (2), a part of a pipe may be built into brickwork or concrete, where the interior of the part is rendered readily accessible for cleaning.

Access to drainage installation

269. (1) A drainage installation shall be designed and constructed in a manner that permits access to the interior of a pipe in the installation, for the purposes of inspection, testing, and internal cleaning.

Tests for discharge pipe

274. (1) After a drainage installation has been completed and partially back-filled, the drain shall—

(a) be tested with an air test conducted by pumping air into the drain under a pressure of at least 0.35 kPa (35 mm head of water); and
(b) be deemed to have passed the test if the pressure after three minutes is at least 0.25 kPa (25 mm head of water).

(2) A discharge pipe or ventilating pipe shall be tested as follows after a drainage installation has been completed—
(a) all traps shall be filled with water;
(b) the outlets of all ventilating pipes shall be plugged; and
(c) the air test specified in sub-paragraph (1) shall be applied.

Effluent entering the environment or public sewer

303. All effluent which on disposal is discharged into the environment or a public sewer shall be compliant with the Environment Management and Coordination Act, 1999.

304. Trade effluent, including manufacturing liquid waste, or other effluent shall not be discharged into a sewer unless it has been treated in an approved manner.

305. (1) The occupier of premises from which trade effluent is discharged into a sewer shall construct, on the premises, a manhole connected to the pipe or channel conveying the effluent.

(2) An officer authorized by the approving authority shall have access to the manhole referred to in sub-paragraph (1) and may examine the trade effluent.

(3) A provision shall be made in a manufacturing plant to stabilize trade effluent before the trade effluent is discharged into a public sewer.

PART XV (15) - ELECTRICAL INSTALLATIONS

This part of the code covers paragraphs 312 - 328 of the Code.

In this part, electrical installation work shall include electrical engineering services that shall be installed in a building to make it habitable. The work involves analyzing, planning, and detailing the electrical engineering services of buildings to ensure quality, safety, and reliability of the installation while meeting regulatory standards and guidelines.

Below are the main considerations of the electrical engineering services in the Building Code.

General

Design Standards

All installations must adhere to recognized electrical engineering standards using reliable design methods and materials.

Preparation of designs and supervision of works

Preparation of designs including supervision of the electrical installation works during the building construction phase shall be carried out by a registered licensed professional (electrical engineer) as per provisions of paragraph 6 of the Code.

Testing of and certification of installation

All installation work in this part shall require testing and certification to meet prescribed standards.

Internal Power Supply and Lighting

Internal power installation work in a building comprises the process of installing electrical wiring / conductors and other associated electrical devices to provide power supply sources for various applications.

All installation work related to internal power supply and lighting in a building shall be

carried out in accordance with the provisions of paragraphs 312 – 327, and shall be carried out to ensure –

a) **Quality of the installation** – by using materials and equipment that meet standards/ specifications
b) Safety of the installation – by following safety guidelines, regulations and standards.
c) Reliability of the installation – that delivers power supply without failure or disruption
d) Sustainable installation – using materials that mitigate climate change and that promote sustainable development. Ensuring energy use in buildings is efficient and promoting renewable sources of energy in line with Climate Change commitments.

Some elements of installation work in this electrical service include –

a) **Siting of a power house** – to be situated where it is accessible by a power utility company.
b) **Location and position of electrical appliances like switches, sockets etc** - at a height which is accessible by all persons including PWDs in accordance with KS ISO 21542 (Building Construction – Accessibility and usability of the built environment). Providing for universal access standards to all persons.
c) **Lighting illuminations levels in a building area/ space** – levels shall be in accordance with the Lighting Guide issued by CIBSE. Lighting levels should provide comfortability to the users.
d) **Wiring diagram** - a schematic diagram in a permanent form and showing the main distribution circuit and control of the wiring of the building shall be displayed on a wall beside the main switch of that building (para 322 (1).

Standby generator

If required, shall be located where generator noise levels are not a nuisance to the building owner/ neighbors/ environment. Noise levels are to be within the provisions EMCA 1999 (para 326 (6)).

Master Antenna TV Station System

Installation shall be carried out as outlined in paragraph 328(1) of the Code.

Alternative Energy Sources in a Building

The code provides for standards for installation of solar energy systems whose installation shall be carried out in accordance with provisions of paragraph 328(2). However, other sources of energy more so renewable green energy sources are encouraged to mitigate climate change.

CCTV Security Surveillance System and Electric Fence

Standards for installation are provided in paragraph 328(3).

Intruder Alarm System

Standards for installation are provided in paragraph 328(5).

Structured Cabling

Installation shall be carried out in accordance to the provision of paragraph 328(4) of the Code.

Telecommunication Installation

Installation shall be carried out in accordance to the provision of paragraph 328(6 and 7) of the Code.

A telecommunication service duct shall be provided separate from other services/utility ducts. A common entry duct within a building connected to an access point that's installed outside the boundary wall of the plot/ construction site shall be provided.

PART XVI (16) - LANDSCAPING

This part covers paragraphs 329- 334 of the Code, and provides standards for design, building materials, and products for landscaping.

Below are the main considerations of this part of the code.

General

Design Standards

All installations must adhere to recognized standards using reliable design methods and materials.

Preparation of designs and supervision of works

Preparation of designs including supervision of landscaping works during the building construction phase shall be carried out by a registered licensed professional (landscape architect) as per provisions of paragraph 6 of the Code.

Landscape design consideration

329. (1) An owner shall provide for a soft landscape at the construction site when engaging in construction works.
(2) The soft landscape referred to in sub-paragraph (1) shall be at least fifty percent of the open area of a construction site when engaging in construction works.
(3) The design of the soft landscape referred to in sub-paragraph (1) shall be prepared by an architect.

Provision for tree or shrub

331. (1) A tree planted shall be in accordance with that specified in Table 49, Table 50, and Table 51 set out in the First Schedule of the Code, except where a special construction mitigation measure has been put in place for a root barrier.

Minimum size of tree and shrub

332. (1) A deciduous tree planted shall have a minimum calliper of 50mm and a Coniferous tree shall have a height of 2m.
(2) A person may plant a mix of deciduous and coniferous trees, where practicable.

(3) If a proposed tree has a calliper that is less than 50mm, additional plant material may be planted.
(4) Minimum shrub spacing shall be based on spread at maturity.
(5) With the exception of a naturalization area, shrub size at planting shall be a minimum of 300mm height for deciduous shrubs and a spread of 450mm for coniferous shrubs.

PART XVIII (18) - NON-WATER BORNE WASTE DISPOSAL

This part covers paragraphs 338 - 343 of the Code, and provides standards for design, building materials, products, and systems for non-water borne waste disposal.

Below are the main considerations of this part of the code.

General

Design Standards

All installations must adhere to recognized standards using reliable design methods and materials.

Preparation of designs and supervision of works

Preparation of designs including supervision of works during the building construction phase shall be carried out by registered licensed professional as per provisions of paragraph 6 of the Code.

Prohibition of pit latrines

339. (1) A person shall not construct a pit latrine in an urban area unless approved by the approving authority.
(2) Notwithstanding subparagraph (1) a temporary latrine shall be constructed at a construction site in accordance with the Public Health (Drainage and Latrine) Rules.

Siting of a pit latrine

342. (1) An excavation for a pit latrine shall not be situated within 3m of a building, or of a boundary.

PART XIX (19) - REFUSE DISPOSAL

This part covers paragraphs 344 - 351 of the Code, and provides standards for design, building materials and products for refusal disposal.

Below are the main considerations of this part of the code.

General

Design Standards

All installations must adhere to recognized standards using reliable design methods and materials.

Preparation of designs and supervision of works

Preparation of designs including supervision of works during the building construction phase shall be carried out by a registered licensed professional as per provisions of paragraph 6 of the Code.

Provision for refuse disposal

344. (1) Every building shall have an approved means of refuse storage and disposal.

Waste container for building.

346. (1) In a low-rise residential building, a dwelling shall have, or have access to, a movable waste container with a capacity of at least 0.125m3, or a communal waste container of a capacity that is between 0.75 m3 and 1m3.

(2) In a multi-storey residential building, each dwelling up to the fourth storey may have its own waste container, or share a waste container.

(3) In a multi-storey residential building, a dwelling that is situated above the fourth storey shall share a container that is fed by a chute.

(4) Where the siting or operation of the chute referred to in sub paragraph (3) is impracticable, a management arrangement for conveying refuse to the waste container shall be provided.

(5) A waste container shall have a close-fitting lid.

(6) If a waste container is placed in an enclosure, the enclosure shall—

(a) allow room for filling and emptying;

(b) provide a clear space of 150mm between and around the container and if it is a communal container, have a height of at least 2m; and

(c) be permanently ventilated at the top and at the bottom.

PART XXIV (24) - ACCESS ROADS, CUL-DE-SACS AND OTHER PRIVATE ROADS

This part covers paragraphs 496 - 516 of the Code, and provides standards for design, building materials and products for access roads and cul-de-sacs.

Below are the main considerations of this part of the code.

General

Design Standards

All installations must adhere to recognized standards using reliable design methods and materials and products.

of designs and supervision of works

Preparation of designs including supervision of works during the building construction phase shall be carried out by a registered licensed professional as per provisions of paragraph 6 of the Code.

Private road

496. (1) A private road or cul-de-sac shall be accessible from an existing road or another new road.

Footpath

497. (1) A private road or cul-de-sac shall have a footpath of a width of at least 2m on

either side.

(2) An access road shall have a footpath on at least one side.

(3) A private road, cul-de-sac and an access road shall have a safe cyclist lane and designated parking spaces.

(4) A footpath shall be protected in such a manner as to prevent vehicles entering thereon and well drained.

(5) A footpath shall be surfaced with concrete that is at least 50mm thick, and covered with granolithic paving that is at least 12.5mm thick or any other approved design.

Width of private road or cul-de-sac

498. (1) In a residential area—

(a) the width of a carriageway and footpath in a private road shall be at least that specified in Table 76 set out in the First Schedule of the Code; and

(b) the width of a carriageway of a cul-de-sac shall be at least 5m and the width of each footpath thereon shall be at least 2m.

(2) In an industrial area—

(a) the width of a carriageway or footpath in a private road shall be at least that specified in Table 76 set out in the First Schedule; and

(b) the width of a carriageway of a cul-de-sac shall be at least 7m and the width of a footpath thereon shall be at least 2.75m.

Shape of manhole cover

514. (1) The cover of a manhole in a private road, cul-de-sac or access road, pedestrian way, or service lane, provided for a drain or sewer for the carriage of foul water shall be rectangular.

(2) The cover of a manhole for a drain or sewer for the carriage of surface water shall be round.

Drainage of private road

515. (1) A private road, cul-de-sac, access road, footpath, or service lane shall have channels, drains, and sewers for the carriage of rain-water and surface water to a stormwater drain.

Channel in private road

516. (1) A channel in a private road, cul-de-sac, access road or footpath shall be—

(a) constructed of concrete that is at least 150mm in thickness and at least 300mm in width, or any other approved material;

(b) laid to a fall of at least 1 in 30 towards the kerb at the cross-section; and

(c) laid to a fall of at least 1 in 100 at the long

SECTION 9: SAFETY AND SPECIAL CONSIDERATIONS IN INTERIORS AND EXTERIORS OF BUILDINGS:

1. PART XX (20) - PEOPLE LIVING WITH DISABILITIES

This part covers paragraphs 352 – 362 of the Code.

The Code provides for standards for universal accessibility as per KS ISO 21542. All designs are to facilitate access to buildings right from the boundary to at least one entrance and to lifts where the code requires them to be provided in a manner that does not impede the passage of wheelchairs. At least one lift on every floor of the building is to be provided and the standard of accessibility is set out in Para 356. Some of the provisions include: -

1. Provide a ramp for any change of level unless there is a lift or walkalator
2. catering for that. Paragraph 354 has the standards for the design of such a ramp.
3. The standards for lobbies, corridors, passages, and paths that allow for maneuvering of wheelchairs are set out in Paragraph 357.
4. Minimums for Accessible Water Closets (Para 359).
5. Para 360 sets out standards for handrail design.
6. Para 361 provides for wheelchair space in the auditoria.
7. In hotel accommodation, provide a minimum of 2 hotel rooms, or 5% whichever is more, for PWD as stipulated in 362.

2. PART XXI (21) - FIRE SAFETY AND FIRE INSTALLATION

This part covers paragraphs 363 - 450 of the Code.

It provides for the protection of occupants from fire and their safe evacuation in the event of fire. Major provisions include;

1. Design to retard spread and intensity of fire within a building and adjoining properties. The fire damage to the structure should not cause it to collapse or endanger adjoining properties.
2. In multi-storey buildings, design to minimize generation and spread of smoke. The equipment for detecting, fighting, controlling and extinguishing fire should be available and accessible.
3. Combustibility and fire resistance of various elements of the building including the combustibility of finishes.
4. Barriers, compartments and gaps that can minimize the or spread of fire. Enclosed areas like lifts should also be fire-safe and retard its progression when it occurs.
5. Air conditioning and mechanical ventilation systems in a building are to be designed with fire safety in mind.
6. Design standards for fire safety of stages and backstages for buildings used as theatres and similar activities.
7. Seating arrangements in auditoria, halls or grandstands should have provisions for clearance between rows and maximum distance to an escape door or a door to an emergency route
8. Requirements for operating theatres, maternity delivery rooms and intensive care units in terms of: separation with other areas or buildings
9. For liquid fuel dispensing pumps and /or tanks, provisions in 431 include: distance

from lateral or road boundary; height and distance beyond the pump or tank
10. For installations of LPG bulk storage on a construction site
11. The construction site shall allow for access to the building and its interiors for firefighting and rescue
12. Performance requirements for building materials and components under fire
13. Fire indices of finishing materials for walls, columns or ceilings
14. Fire installations together with their water supply requirements
15. Requirements for evacuation procedures and signage including for persons with disability
16. Fire installations are supposed to be maintained in a functional by qualified persons and owner to ensure periodic testing and inspection.

IMPACTS OF THE BUILDING CODE

No.	Persons to be affected	Possible impacts
1	Developer / Owner	Viable investment/ROI in sustainable buildings Possible prosecution for non-compliance of the Building Code.
2	Built Environment Professionals; Physical planner, Architect, Engineer, Land surveyor, Building surveyor, Quantity Surveyor, Site Supervisor, and Skilled Worker.	Job opportunities – the Code requires developer /owner to engage the services of a registered licensed professional. Possible persecution if professionals commit professional negligence.
3	Regulators/Enforcement Entities; National Gvt, County Gvt, BORAQs, EBK, AAK, NCA, KCAA	Opportunities for change management i.e., innovation, research, and development. More resources needed for recurrent expenditure (recruiting more personnel and O & M) Job opportunities in recruiting more personnel to enforce the Code.
4	Contractors	Job opportunities/ employment creation
5	Manufacturers/Suppliers	Innovation; create more product performance specifying.
6	General Public	Job creation /employment creation Improved quality of life.
7	Training Institutions	Opportunity for training at all levels of education.

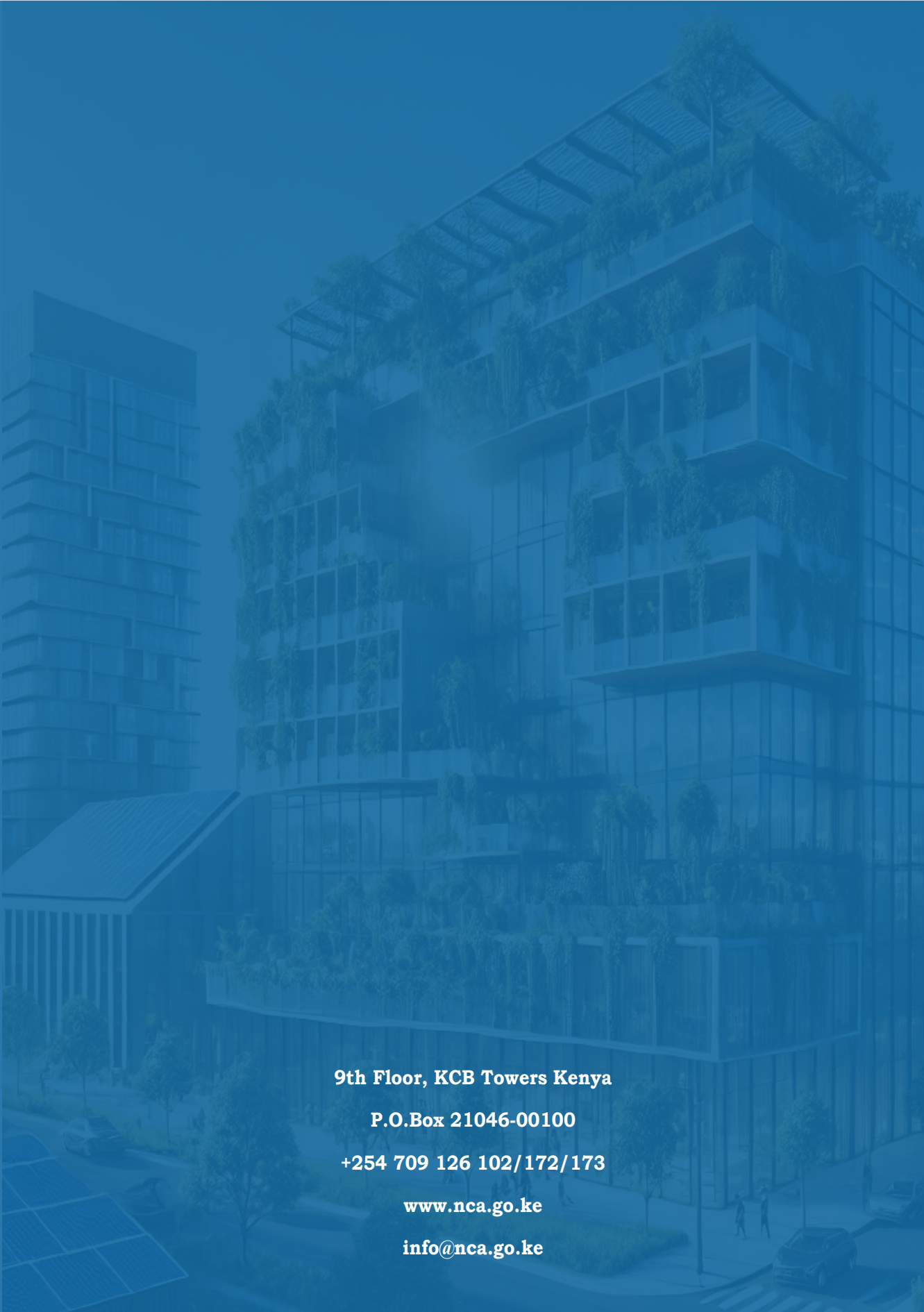
5.1. CONSEQUENCES OF NON-COMPLIANCE

1. Collapse of buildings leading to loss of property lives and investments
2. Prosecution under related laws which can lead to fines and imprisonment.
3. Enforcement Notices
4. Prohibition Notices
5. Demolition

6.1 CONCLUSION

In conclusion, this popular version of the building code acts as a guide by outlining essential standards for the safe, efficient, and sustainable design, construction, and maintenance of buildings.

This ensures the protection of occupants and the environment while accommodating local building practices and traditions.



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