6. The Promising Future
5. NHC Approach Towards Green Building
4. Promoting Green Building Movement in Tanzania
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2. Real Estate Sector in Tanzania
1. Overview

Highlights

17th November, 2014
National Housing Corporation, Tanzania
Director of Innovation
Presented by Mr. Issack M. Peter

Experiences from Tanzania
Making Green Affordable
to be built on incremental basis (out of packets).

Until recently, there was absence of Formal Mortgage Financing, leading to 99% of houses

It is expected to reach 46.8% by 2015.

Urban migration is growing at an increasing rate (from 14.8% in 1980 to 37.5% in 2005 and

Estimated at 3,000,000 housing units, growing at a rate of 200,000 per annum.

Housing Deficit in Tanzania

20 THE REAL ESTATE SECTOR IN TANZANIA

addressing sustainable planning and best practice.

NHC focus on invigorating development of the construction industry, setting standards,

- Satellite Cities
- Retail & Office Developments
- Residential & Mixed Use Developments
- Affordable Housing Projects

Development programmes include:

- National Housing Corporation (NHC) is the first government corporation to be established in

1.0 OVERVIEW
**Overview of Real Estate Sector in Tanzania**

**Domestic Growth**

Growth Opportunity

- Population growth + urbanization = Big Hypothesis
- Current housing deficit + annual demand + the construction sector
- Consolidated institutionalization and standardization in demand = 200,000 p.a. of $12bn
- Total housing deficit > 3m units or >200bn
- Deposits
- Current system increased of 9-12 months
- It takes 5-10 years to complete a house under the current system

**FACTORS**

- Unplanned development and land conflicts.
- The practice contributes to the expansion of informal construction, multiplying the effect of
  - Income groups: usually concentrated in unplanned and un-serviced settlements.
  - The informal construction takes a huge share in providing houses for low and medium
    - Demand ends to informal construction (individual household funding).
  - Few institutional developers have been targeting the niche market leaving the middle and
  - The growth rate for housing development for the high-end market has been aggressive.

**Source:** Ministry of Transport, JICA 2012, World Bank Indicators
green building design, technologies and practices.

TZGBC aims to advocate environmental sustainability in the construction industry by focusing on

and green built environment practitioners and stakeholders.

TZGBC is a formal society initiated by green building experts, policy makers, academics

NHC co-founded and is the main sponsor of Tanzania Green Building Council (TZGBC)

Promoted and provided green design checklist

Included green design as key requirements in the TORS

40 PROMOTING GREEN BUILDING MOVEMENT IN TANZANIA

construction practices.

Slow in adaptability/Lack of local experts in the area of green building and sustainable.

green building technologies/regulatory regulations

Rigidity of the industry to adopt new construction technologies including sustainable

and best practices.

Lack of locally established project implementation policies/practices which address

FRAGMENTED CONSTRUCTION INDUSTRY

3.0 CONSTRUCTION INDUSTRY CHALLENGES
The view that green building is expensive

- Lack of local information on green building practices and technologies
- Reluctance in adopting sustainable green building practices.

42 CHALLENGES

Members, Council (SCBC) to facilitate capacity building and knowledge transfer programs between

Memorandum of Understanding (MoU) between TzBC and Singapore Green Building

- Free (green building) feasibility assessment

Developers, Project Managers, Students.

- Sponsoring workshops for building practitioners and stakeholders (Architects, Engineers,

4.1 THE COUNCIL’S PLANS
The following design considerations are addressed:

1. Site analysis — sun path, prevailing winds, topography and vegetation
2. Site plan — building orientation, building position, building footprint and drainage
3. Building design — orientation and layout, openings, natural ventilation, natural lighting, roof, sun shading, material and colour
4. Energy — solar, biogas, biomass and wind
5. Water — waste water recycling, rain water harvesting, surface rain off
6. Solid waste
7. Agriculture (urban agriculture)

The East Africa (As published by Urban Energy Unit UNEP under Technical Note No. 01) NHC has adopted guidelines for Green Building Design for Promoting Energy Efficiency in Buildings in

5.0 NHC APPROACH IN MAKING GREEN AFFORDABLE

3.4 Basic Principles of Green Building

Green

Local

Basic Design

Context

Green Value

Engineering
And ultimately the most affordable green building solution

- The most sustainable method to deliver the project.
- The most feasible green building technologies.
- The most sustainable construction materials.
- The most sustainable design solution.

For every project, a thorough study of the local context is carried out to determine:

- Principles and guidelines to suit the objectives of the projects and user requirements.
- Understanding of the local context gives a guide on how to customize green building solutions.
- Local context of a project plays a key role in making green affordable.

5.2 Green Value Engineering

- Reconciling project deliverables with green certification parameters.
- Deliverables.

5.3 Local Context - Making Green Affordable

- Provided checklists for green building certification into project processes & project deliverables.
- Incorporating green building guidelines into our design and construction processes (TORs).
- NHC has set green value engineering measures in its project delivery process.
Showcased in International Green Building Conference in Singapore.

An example of successful implementation of Green Value Engineering.

"NHC Place" is the first office building in Tanzania to receive Green Mark Certificate.

Solution for commercial and office buildings.

NHC iconic building "NHC Place" located at Plot No.01, Along Ulimoni / Ali Hassan Mwinyi road in Upanga area, Ilala Municipal, Dar es Salaam demonstrates a sustainable design.
Kigamboni Housing Estate is the first affordable housing scheme in the world to be awarded a Green Mark Certificate.

Kigamboni Housing Estate located in Kigamboni area, Temeke Municipality, Dar es Salaam demonstrates a sustainable green design solution for over 200 buildings.

Scoring was based on the main sustainability measures (Energy Efficiency, Water Efficiency, Environmental Protection, Indoor Environmental Quality, and other green features).
KICAMBONI HOUSING ESTATE

Community rainwater harvesting.
Household:
- To reduce water consumption for each dual flush sanitary things are brought in.

KICAMBONI HOUSING ESTATE

Efficiency
- Water
- Refrigerator: House rules on items like efficient
- Efficient lights
- Fan Points, installed with energy
- Glass are hinted to mitigate heat
- Thermal insulation
- Windows are made of UPV, good

Efficiency
- Energy
The workforce surrounding community who supports the direct labour force but also to the which provide employment not only to which generates a ripple workforce effect construction of wall etc. tradesmanship plumbing, local manpower are employed to build the house and are traded on many.
KIGAMBOI HOUSING ESTATE

- Green Mark Land Development Criteria
- Green Housing in Tanzania using the BCA
- Assessed for the First Affordable Public
- Taken into account beyond what is
- In line with the UN Habitat Objective
- Consumer and Benefit driven approach
- Ecomically
- use green concept values , socially and
- stipulated within certification criteria and

KIGAMBOI HOUSING ESTATE

- Maximize fully every bit of surrounding
- Closed loop process of material usage
- Salvaged
- Excavated soil used for the walls or
- Used to form new walls.
- Compacted soil walls wastages are re-
- Installed as it is
- Well Routing fabricated on site and
- Materials prefabricated and installed on
- Minimize wastage

Construction

Wastage
Morocco Square - DSM

Kigamboni Housing Estate
• Target Return On Investment (ROI): 25% and above
• Estimated Investment Required: USD 2.2 Billion
• Expected Number of Units: 6,000 Units

UPTOWN KAVE SATELLITE CITY - DSM

Eco Residenece
SAFARI SATELLITE CITY - ARUSHA

USA RIVER SATELLITE CITY - ARUSHA