





### **Real Estate Financial Model Training**

September 12, 2019

### Agenda

- Introductions
- Background on Real Estate Finance
- The Case Study: Residential Housing Building
- Real Estate Financial Model
- Market Research
- Pulling the Feasibility Together

### Introduction to the Speakers



NGATIA KIRUNGIE



**Ngatia Kirungie** is a financial service professional and the founder of Spearhead Africa, a Nairobi based property and infrastructure advisory business, delivering innovative financial structuring and alternative sources of capital to businesses in East Africa.

Ngatia has extensive experience from large financial institutions in New York, London and Nairobi and leads the firm's project structuring efforts developing innovative and bespoke financing structures and capital solutions to meet client project requirements. He is also responsible for developing the firm's investment capital networks with local and international commercial and development banks, insurance companies, pension funds and asset managers.

Prior to founding Spearhead Africa, Ngatia was an Executive Director at Goldman Sachs in London where he led the firm's Africa fixed income sales and credit coverage, and was responsible for leading financing and public market investment transactions valued at over USD 5 billion across Kenya, Tanzania, Nigeria, Ghana, Angola and South Africa. Ngatia was also responsible for the firm's structured finance origination and distribution efforts in Africa, providing local corporates, state-owned enterprises and infrastructure investors with financing solutions across the capital structure ranging from vanilla debt to structured equity investments.

Ngatia is a graduate of Vanderbilt University where he received his MBA (Property Finance and Investment specialization). He received a Bachelor of Science in International Business Administration (Honors) from the United States International University in Nairobi.

### Introduction to the Speakers



**Fredrick Oloo** is an Associate at iJenga where he focuses on feasibility studies, project accounting and market research.

He previously interned at the Nairobi Securities Exchange (NSE) under the market product development department which mainly focused on the establishment of the derivatives market in Kenya. He also interned at the St. Gallen University in Switzerland under the annual St. Gallen Symposium internship program.

FREDRICK OLOO

Fredrick graduated with a 1st Class Bachelor of Commerce (Finance Major) degree from Strathmore University in 2016, has an Association of Chartered Certified Accountants (ACCA, Part 2b) qualification and is an IFC Edge Expert.

# iJenga

### Introductions & ice breaker

#### • Who is in the room – how many people are:

- Finance or accounting
- Quantity Surveyor
- Sales & brokerage
- Marketing

### Meet your neighbor

- Where does your neighbor work?
- What is your neighbor's role at the company?
- Why did your neighbor come to the training today?
- One thing that is unique about your neighbor?

### Agenda

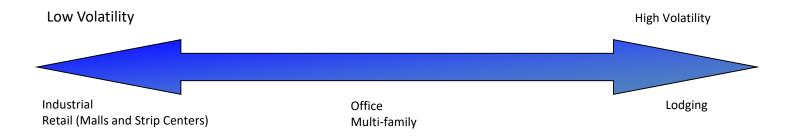
- Introductions
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### Introduction to Real Estate

#### • The word Real Estate comes from the Medieval English system of land holding.

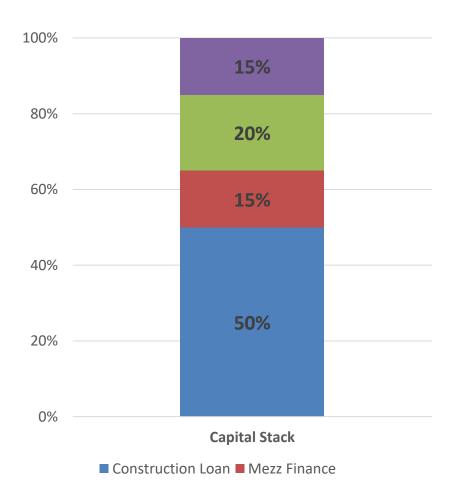
- All property was held by the King
- Use was given to an individual along with his noble title -- Duke of Wellington was given control of all the lands around Wellington
- The term "Royal Estate" became "Real Estate"
- In the modern ownership of real estate is a property right (not a temporary holding) but we still use some of the terms
  - Title: Document which is registered with the government which shows ownership of property
  - Fee Simple Estate: Full ownership of a piece of land in perpetuity

#### • We deal primarily with five different property types



- Real estate finance is focused on Net Operating Income ("NOI") and Cash Flow
- NOI is effectively corporate EBITDA
- Valuation based on cap rate (NOI return on value) and 10-year DCF of cash flows and terminal value

### Real Estate Finance – Capital Stack



Developers Equity Investor

- Developers can use various types of capital to fund a development
- Major types of capital include
  - Debt
    - Construction loan
    - Mezzanine finance
  - Equity
    - Developers equity (land & cash)
    - Investors
- Each type of category can have multiple lenders/investors and products
- The capital stack is a delicate balancing act of managing interest with market revenues and returns

### Real Estate Finance - Equity

- Equity is available for real estate in a variety of structures
- Equity can vary by
  - Percentage ownership
  - Class of share
  - Embedded options (ie right of sale, exit date, options)
  - Governance & decision making
- There are various types of equity investors
  - High net worth individuals
  - Real estate private equity funds
  - Real Estate Investment Trust (REIT) shareholders
- Equity investors bear the major risk in real estate, as debt lenders take precedent on the asset
- In cases of 2<sup>nd</sup> or 3<sup>rd</sup> loans on a property, an equity holder can have very little recourses in times of economic challenges

### Real Estate Finance - Debt Structures

• Debt is available for real estate in a variety of structures

#### • Secured Debt

- Mortgage against property
- Direct recourse to secured properties

#### • Unsecured Debt

- Bonds/ Notes
- LOCs/ term loans generally unsecured
- Corporate obligation, not secured by individual properties

### Real Estate Finance - Debt Structures – Secured Debt

- Also known as Mortgage Debt
- Loan is secured by a lien on real estate
- There can be more than one lien -- First Mortgage, Second Mortgage, etc., with payment preference in that order
  - Second Mortgages and junior referred to as Mezzanine Loans
  - Most First Mortgage lenders restrict the ability of a borrower to put mezzanine financing on a property
  - Opens up the property to foreclosure by mezzanine lender
- First Mortgage generally available up to 60% to 95% of value of property (varies by property-type, tenancy, condition of property, etc.)
- If fixed rate, generally 10-year term and not prepayable or prepayable only with penalty ("Yield Maintenance" to reimburse lender for any lost yield upon reinvestment)
- If floating-rate, generally 2 to 7-year term and prepayable
- Lender's sole security is the property
- Do not confuse "Secured" with "Securitized" -- which means included in a pool of commercial mortgages backing a CMBS offering (Commercial Mortgage Backed Securities)

### Real Estate Finance - Debt Structures – Unsecured Debt

- Secured by the credit of the company, not any one specific property
- Generally used by large public REITs
- Fixed rate = corporate bond or perpetual preferred
- Floating rate = corporate line of credit
- Covenants
  - Limits on secured debt (as a % of total value)
  - Limits on number of properties/% of EBITDA with secured debt
  - Limits on total debt (as a % of total value)
  - Required interest, debt service, and/or fixed charge coverage

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### Case Study – U Shaped Apartment Building

#### Background:

- We are local affordable housing developers and we have the opportunity to partner on the development of a building
- The building is a U Shaped building that efficiently provides views while managing the size of common areas
- The unit typology is flexible based on demand for the area
- We will explore the viability of a 9 story development
- The development has a parking ratio of 0.3x

#### Activity:

- We will jointly input the relevant information into the spreadsheet tool. You will work in teams and then we will review after each section
- Some elements of the template are already complete, which I will walk through in the model
- Walk through model template





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### About financial modeling – Model Structure

#### • Understand what you are trying to model

- You can't model it if you don't understand it
- Ask questions

#### • Get a template from somebody

- Someone has done a model you can start from use it only as a guide for creating your own
- Even if the model needs a lot of changes, it's usually easier than starting from scratch
- Never, however, trust the formulas in a model template!
- As much as practical, keep all your inputs (always in a blue font) in one area
  - Always link to the same source cell if possible
- Be fanatical about formatting properly, even parts of the model that are outside the print area
- Don't hesitate to use comments or footnotes when assumptions or formulas aren't straightforward
  - Use text functions to update numbers in footnotes whenever possible
- Don't hide rows or columns; use the "Group" feature if you must
- If there is a lot of detail you don't want printed, create a summary output page and keep the detail on a separate sheet that can be printed if necessary
- Eliminate clutter: delete any inputs or formulas that aren't being used
- Build flexibility into your model
- Use date and time stamps and page numbers

### About financial modeling – Reviewing a Model

#### • Check your work... and check it again

- If you find no mistakes or typos, you haven't checked it enough
- Print out your model and use your calculator to double check your work
- Gut check do the results make sense?
- Make sure what you want printed is what prints out

#### • Use "proofs"

- Balance sheets must balance
- Sources = uses
- Debt amount on balance sheet must equal debt amount on debt schedule

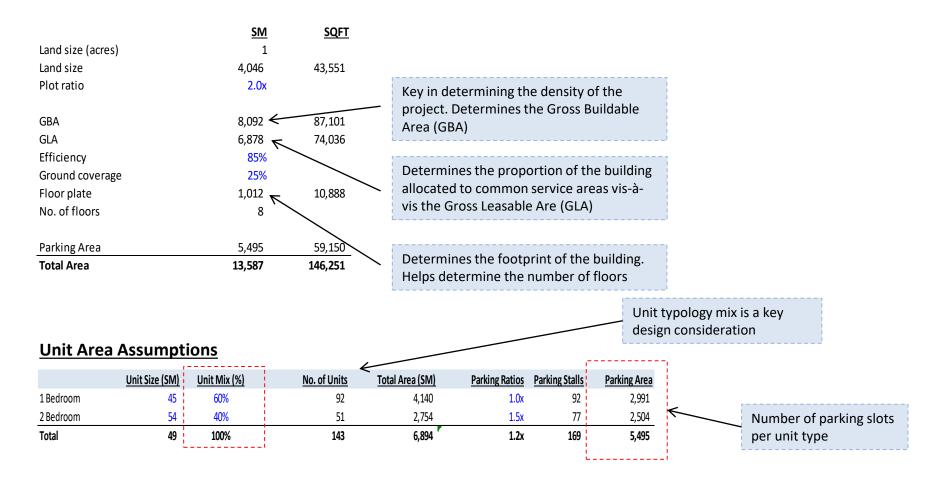
#### • Play with your assumptions

- Make sure your formulas work across a very wide range of inputs
- Change zeroed inputs to non-zero amounts
- What if cash flow is negative?
- What if property is sold at a loss?
- Did interest expense rise when you increased your interest rate assumptions?

### Area Schedule

#### **Building Area Assumptions**

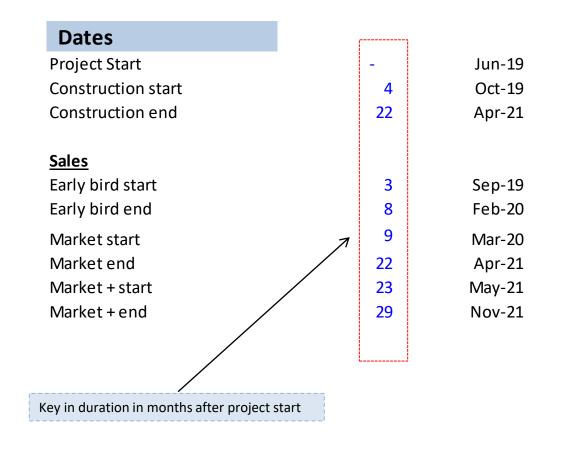
#### **Building Description**



### **Development Dates**

#### **Development Dates**

- Project Starts in June 2019
- Construction Starts in October 2019 and ends in June 2021
- Early bird sales starts 3 months after project start and lasts for 8 months
- Market sales starts 9 months after project start and ends 23 months from project start
- Market + sales starts 25 months after project start and ends 31 months after project start.



### **Total Cost of Development**

#### Assumptions

#### Land Cost

• 150m / acre

#### **Pre-construction Analysis**

- Topo 200k
- Geotech 400k
- Valuation 200k

#### **Construction Cost**

- Parking 2,000 / sqft
- Building 6,500 / sqft
- Prelmins 4%
- Contingency 5%
- CoW 150k per month for 18 months

#### Consultants

- Architect 3%
- Interiors 0.5%
- C&S 1.5%
- MEP 1.5%
- QS 1%
- PM 2.5%
- NCC & NEMA consultant – 200k each

#### Marketing & Letting

- Legal 1m
- Asset Mgt 1m
- Letting 2m

#### Contingency

• Dev. Contingency 3%

#### Financing

VAT

• Fee – Not included

• Charged at 16%

#### **Development Summary**

	Cost in KES		<u>%</u>	Price per SM
Land Cost	105,200,000		16%	7,743
Pre-construction Analysis	1,160,000		0%	85
Construction Cost	463,939,142		72%	34,145
Design & Development Consultants	40,019,451		6%	2,945
Development Permits	5,556,496	<b>∧</b>	1%	409
Marking & Letting	4,640,000		1%	341
Development Contingency	6,959,087		1%	512
Financing Administrative Cost	20,995,841		3%	1,545
Total Development Cost	648,470,017		100%	47,726
	٤	i		

Tabs are linked thus no need to key in. The numbers in green pick from the Budget tab.

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### Sources & Uses of Capital

#### Assumptions

- Total equity funds accounts for 54.8% of the project
- Total debt funds for the project accounts for 45.2% of the project cost
- Sources of capital Land equity – 25%, Developers equity – 29%, Construction loan – 45%
- Sources & uses of capital must balance

				·'	
Total Sources	648,470,017	100%	Total Sources	648,470,017	100%
Mezzanine Loan		0%	Financing costs	20,995,841	3%
Ferm loan	-	0%	Soft costs	57,175,034	<i>9</i> %
Construction loan	324,757,399	50%	Construction	463,939,142	72%
Developers' Equity	218,512,618	34%	Pre-construction	1,160,000	0%
and Equity	105,200,000	16%	Land	105,200,000	16%
Sources			Uses		
Sources & Uses of Capital	L				
Total Debt			324,757,399	50.1%	
Mezzanine loan			-		
Ferm Ioan			-		
<u>Debt</u> Construction loan			324,757,399	70%	
Fotal equity			323,712,618	49.9%	
· · ·				49.9%	
Гotal cash equity .and equity			218,512,618 105,200,000	100%	
Cash equity			79,330,875		
Construction equity			139,181,742	<b>≥</b> 30%	
and cost			-	0%	
Equity					
	contr	ribution for land	and cash		
		n % share of equ	-		

### Sales Prices and Schedule

#### **Sales Assumptions**

- Sales revenue 25% from early bird sales, 40% from market sales and 35% from market + sales
- Sales price per SQFT Early bird get a 10% discount , market + buy at 15% premium
- Market price per SQFT KES 10,000

			in % proportion th sale type	on from	
Revenue					Key in the expected sale price per SQFT
<b>Sales Revenue</b> Early Bird Market Vlarket +	25% 40% 35%				
Unit Type	Size in SM	# of Units	Price per SM	Unit Price	Total revenue
Early Bird - 1 Bedroom	45	23	94,500	4,252,500	97,807,500
Early Bird - 2 Bedroom	54	13	94,500	5,103,000	66,339,000
Market - 1 Bedroom	45	37	105,000	4,725,000	174,825,000
Market - 2 Bedroom	54	20	105,000	5,670,000	113,400,000
Market + - 1 Bedroom	45	32	120,750	5,433,750	173,880,000
Market + - 2 Bedroom	54 <b>48</b>	18 143	120,750 <b>107,865</b>	6,520,500 <b>5,200,143</b>	117,369,000 743,620,500
		Milestone	rice per GLA		106,247 Key in sales commission rate %
	Payment 1	Payment 2	Payment 3	Payment 4	L
Completion Milestones Products	25%	50%	75%	100%	
Early Bird	10%	10%	0%	80%	
Market	10%	5%	0%	85%	
Market +	20%	0%	0%	80%	
		$\uparrow$			
		in proportion each stage of	n of units sold		

### Returns

#### **Returns Assumptions**

- This summary shows a brief summary of the expected net revenues.
- Commission on sales is charged at 1%.
- Margin on cost calculated at 22%
- This also shows the profits after tax figure and the annualized ROE of 5%

### **Summary Economics**

Annualized ROE	3%
РАТ	58,797,323
Margin on cost	13%
Total Project Profit	83,996,176
Net Nevenue	/32,400,195
Net Revenue	732,466,193
Commission Cost	11,154,308
Commission %	1.5%
Total Revenue	743,620,500
Total Cost of Development	648,470,017
Finance	20,995,841
Consultants & Approvals	57,175,034
Construction	465,099,142
Land	105,200,000
Sales	

### **Cashflows and Returns**

#### Assumptions

 Equity IRR assumes project is 100% funded by equity thus no finance costs incurred in ca

 Project IRR assumes project is funded by both equity and debt

#### Cashflows & Returns

	Inflow	Outflow	Debt Service	Net Cashflow
2019	10,778,954	(210,850,177)	0	(200,071,224)
2020	52,989,873	(323,389,338)	0	(270,399,465)
2021	686,948,185	(114,230,501)	0	572,717,684
2022	0	0	0	0
2023	0	0	0	0
2024	0	0	0	0
2025	0	0	0	0
2026	0	0	0	0
2027	0	0	0	0
2028	0	0	0	0
2029	0	0	0	0
Profit before tax	750,717,011	(648,470,017)	0	102,246,994
Project IRR		14.6%		sumes project is 100%
РВТ		102,246,994	fun	ded by equity capital
		102,246,994	fun	ded by equity capital
	Inflow	102,246,994 Outflow	fun Debt Service	nded by equity capital
PBT Equity Cashflows & Returns 2019 2020		Outflow	Debt Service	Net Cashflow
Equity Cashflows & Returns 2019	10,778,954	Outflow (210,850,177)	Debt Service	Net Cashflow (200,071,224)
Equity Cashflows & Returns 2019 2020	10,778,954 52,989,873	Outflow (210,850,177) (96,303,337)		Net Cashflow (200,071,224) (65,536,142)
Equity Cashflows & Returns 2019 2020 2021	10,778,954 52,989,873 686,948,185	Outflow (210,850,177) (96,303,337) (16,559,103)	Debt Service 0 (22,222,678) (302,534,721)	Net Cashflow (200,071,224) (65,536,142) 367,854,361
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### Types of Market Research Data

### Sales data

- 1. Average sale price per unit type
- 2. Average unit size per SQFT
- 3. Average unit size per SQFT
- 4. Average sale price per SQFT

### **Rental data**

- 1. Average rent per unit type
- 2. Average rent per SQFT

### **Building data**

- 1. Number of parking spots
- 2. Floor heights
- 3. Amenities

### Market Research – Focus area



### Market Research of Units in Westlands

#	Name Of Property	Region	Region number	No. of Beds	Unit Price (KES)	Size (SQFT)	Size(m2)	Price per SM	Parking per unit	Supply		Demand( %)	Floors	Start DATE	Completion Date	Rent
1	Apartments	Westlands CBD	2	1	14,500,000	1,090	101	143,189	1	120	65	54%	5	01/01/18	01/01/20	65,000
2	Apartments	Brookside	3	1	14,500,000	1,090	101	143,189	1	120	84	70%	5	01/01/18	01/01/20	65,000
3	Apartments	Westlands CBD	2	1	10,500,000	753	70	150,094	1	100	80	80%	5	01/01/18	01/01/20	55,000
4	Apartments	Westgate	5	1	14,500,000	1,090	101	143,189	1	120	84	70%	5	01/01/18	01/01/20	65,000
5	Apartments	Westlands Retail	4	2	30,000,000	2,000	186	161,459	2	80	55	69%	6	01/01/18	01/01/20	70,000.0
6	Apartments	Westgate	4	2	15,700,000	1,399	130	120,769	2	80	67	84%	6	01/01/18	01/01/20	85,000.0
7	Apartments	Westgate	5	2	22,270,000	1,690	157	141,841	2	80	66	83%	6	01/01/18	01/01/20	75,000.0
8	Apartments	General Mathenge	1	2	18,700,000	1,300	121	154,835	2	80	34	43%	6	01/01/18	01/01/20	85,000.0
9	Apartments	General Mathenge	1	3	27,000,000	1,604	149	181,208	3	35	15	43%	6	01/01/18	01/01/20	190,000
10	Apartments	Westlands Retail	4	3	32,000,000	2,250	209	153,087	3	90	86	96%	6	01/01/18	01/01/20	120,000
11	Apartments	General Mathenge	1	3	45,000,000	2,750	255	176,137	3	21	13	62%	6	01/01/18	01/01/20	150,000
12	Apartments	General Mathenge	1	3	72,000,000	4,360	405	177,751	3	10	6	60%	6	01/01/18	01/01/20	120,000
13	Apartments	General Mathenge	1	4	48,000,000	3,800	353	135,965	4	16	15	94%	12	01/01/18	01/01/20	160,000
14	Apartments	General Mathenge	1	4	55,000,000	3,200	297	185,005	4	14	8	57%	12	01/01/18	01/01/20	180,000
15	Apartments	General Mathenge	1	4	80,000,000	4,650	432	185,185	4	21	18	86%	12	01/01/18	01/01/20	160,000
16	Apartments	General Mathenge	1	4	45,000,000	3,500	325	138,393	4	22	22	100%	12	01/01/18	01/01/20	150,000
17	Apartments	General Mathenge	1	5	95,000,000	5,510	512	185,584	4	5	3	60%	12	01/01/18	01/01/20	300,000
18	Apartments	General Mathenge	1	5	80,000,000	7,000	650	123,016	4	7	5	71%	12	01/01/18	01/01/20	200,000
19	Apartments	General Mathenge	1	5	95,000,000	5,510	512	185,584	4	5	3	60%	12	01/01/18	01/01/20	300,000
20	Apartments	General Mathenge	1	5	95,000,000	5,510	512	185,584	4	5	3	60%	12	01/01/18	01/01/20	300,000
				Average	45,483,500	3,003	279	158,553		52	37	70%				144,750

### Market Research – Land Prices

Property Nai # / Agent	me Location	Road Acres	List Year	List Price	Price per Acre	URL Link
1 Agency	General Mathenge	0.125	43,252	45,000,000	360,000,000	
2 Agency	Westalnds CBD	0.125	43,252	45,000,000	360,000,000	
3 Agency	Brookside	0.125	43,252	45,000,000	360,000,000	
4 Agency	Westalnds Retail	0.125	43,252	45,000,000	360,000,000	
5 Agency	General Mathenge	0.125	43,252	45,000,000	360,000,000	
6 Agency	Westalnds CBD	0.125	43,252	45,000,000	360,000,000	
7 Agency	Brookside	0.125	43,252	45,000,000	360,000,000	
8 Agency	Westalnds Retail	0.125	43,252	45,000,000	360,000,000	
9 Agency	General Mathenge	0.125	43,252	45,000,000	360,000,000	
10 Agency	Westalnds CBD	0.125	43,252	45,000,000	360,000,000	
				Average	360,000,000	
				Median	360,000,000	

### Market Research – Data Sources

#### **On-lines Data Sources**

- Use of online property listings websites such as:
  - a) Property 24
  - b) Buy Rent Kenya
  - C) Knight Frank
  - d) Vaal Real Estate
  - e) Dunhill Consulting
  - f) Haas Consult, etc.

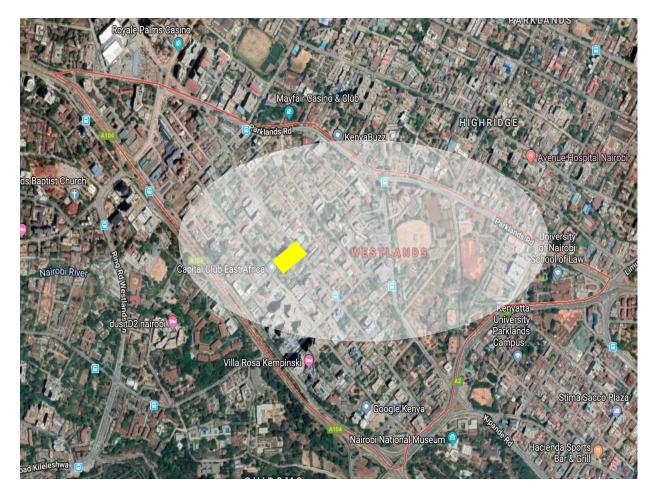
## Primary data collection

- Conducting an actual site visit and inquiring from the sales team on site.
- Telephone calls and meetings with real estate sales agents.
- Mystery customer method to obtain data from actual projects.

### Agenda

- Introductions
- Background on Real Estate Finance
- The Case Study: Residential Housing Building
- Real Estate Financial Model
- Market Research
- Pulling the Feasibility Together Fredrick Oloo
  - a) Location
  - b) Market Research
  - c) Design
  - d) Financials
  - e) Team selection

### Location of plot



#### Plot Location & Characteristics

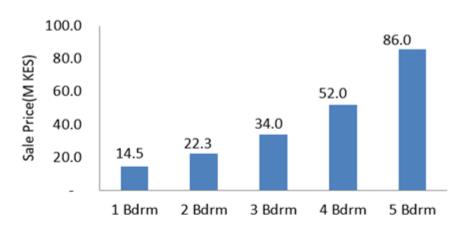
- Description of the plot
- Total plot area is X acres and the gross buildable area is X SQM.
- Plot road access.
- Distance from key amenities
- Area Zoning
- Allowable Plot ratio
- Building height restrictions

### Market Research

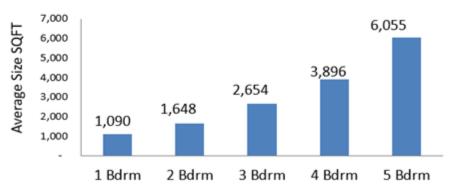
Our objective was to establish the average sales price per Average Sales Price Residential Apartment unit type and the average sales price per SQFT across Westlands Nairobi.

Research findings on the prices reveal that 1, 2, 3, 4 and 5 bedroom apartments have average sales prices of KES 14.5 Million, KES 22.3 Million, KES 34.4 Million, KES 52 Million and KES 86 Million respectively.

In addition , we established that 1, 2, 3, 4 & 5 bedroom apartments in Westlands have an average size of 1,090 SQFT, 1,648 SQFT 2,654 SQFT 3,873 SQFT & 6,055 SQFT.







### **Building Design**

- The building is an efficient U Shaped design, ideal for views facing inwards or a park
- 15-20 units per floor, depending on the mix
- A 9 story building with undercroft parking
- Parking ratio of ~0.3x
- Average unit size of 50 m<sup>2</sup>





Uı	nit Type	Size
	One Bedroom	45 m²
	Two Bedroom	65 m²

### Financials

#### **Development Summary**

	Cost in KES	<u>%</u>	Price per SM
Land Cost	105,200,000	16%	7,743
Pre-construction Analysis	1,160,000	0%	85
Construction Cost	463,939,142	72%	34,145
Design & Development Consultants	40,019,451	6%	2,945
Development Permits	5,556,496	1%	409
Marking & Letting	4,640,000	1%	341
Development Contingency	6,959,087	1%	512
Financing Administrative Cost	20,995,841	3%	1,545
Total Development Cost	648,470,017	100%	47,726

#### Revenue

Sales Revenue	
Early Bird	25%
Market	40%
Market +	35%
	100%

Unit Type	Size in SM	# of Units	Price per SM	Unit Price	Total revenue
Early Bird - 1 Bedroom	45	23	94,500	4,252,500	97,807,500
Early Bird - 2 Bedroom	54	13	94,500	5,103,000	66,339,000
Market - 1 Bedroom	45	37	105,000	4,725,000	174,825,000
Market - 2 Bedroom	54	20	105,000	5,670,000	113,400,000
Market + - 1 Bedroom	45	32	120,750	5,433,750	173,880,000
Market + - 2 Bedroom	54	18	120,750	6,520,500	117,369,000
	48	143	107,865	5,200,143	743,620,500

Total Revenue	743,620,500
Commission	1.5%
Net Revenue	732,466,193
Price per GLA	106,247

	Milestone Payments			
	Payment 1	Payment 2	Payment 3	Payment 4
Completion Milestones	25%	50%	75%	100%
<u>Products</u>				
Early Bird	10%	10%	0%	80%
Market	10%	5%	0%	85%
Market +	20%	0%	0%	80%

Sales	
Land	105,200,000
Construction	465,099,142
Consultants & Approvals	57,175,034
Finance	20,995,843
Total Cost of Development	648,470,017
Total Revenue	743,620,500
Commission %	1.59
Commission Cost	11,154,308
Net Revenue	732,466,193
Total Project Profit	83,996,176
Margin on cost	139
РАТ	58,797,323
Annualized ROE	39

### Team

Developer Logo	<ul><li>Role &amp; lead</li><li>Relevant experience</li><li>Other information</li></ul>
Architect Logo	<ul><li>Role &amp; lead</li><li>Relevant experience</li><li>Other information</li></ul>
Project Manager Logo	<ul><li>Role &amp; lead</li><li>Relevant experience</li><li>Other information</li></ul>
Civil & Structural Logo	<ul><li>Role &amp; lead</li><li>Relevant experience</li><li>Other information</li></ul>
MEP Logo	<ul><li>Role &amp; lead</li><li>Relevant experience</li><li>Other information</li></ul>
QS Logo	<ul><li> Role &amp; lead</li><li> Relevant experience</li><li> Other information</li></ul>