

INVESTMENT PROPOSAL

**NIGERIA'S FIRST
INTERLOCKING BUILDING
BLOCK TECHNOLOGY**



Building System (MBS)



Offered by:

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THE RIGHT INVESTMENT MOVE

Real estate is generally considered a great investment option largely because of its **predictable cash-flow, less volatile nature** which has many advantages over stocks, bonds or mutual funds and more especially, a resistance to inflation as it appreciates. Nigerian property market is projected to stabilize and report growth in 2022. With an **estimated 3 percent growth rate**, the industry is expected to leverage the new policies by both the Federal government and the Central Bank of Nigeria, and the surge in the demand for affording housing to turn its 2021 contraction to a lucrative business for investors.



Strong growth has been indicated for Nigeria's Real Estate sector.



Nigerian Real Estate Market Outlook for 2020. Projections for recovery and strong growth are underpinned by government's policy and investor confidence.

<https://northcourtrealestate.com>

OVER 20 MILLION HOUSES NEEDED

With a housing deficit of more than **20 million units**, **Nigeria's property market, which requires an estimated N170 trillion to N200 trillion** and is highly considered as **one of the top investment options in Nigeria**.

A SUMMARY OF MARKET ANALYSIS

ACCESS TO AFFORDABLE HOUSING FOR NIGERIA'S 200 MILLION POPULATION.

With a 4.3% urban growth coupled with the projection that the country's population will double at 400 million by 2050, the real estate market is an area that holds good return for residential and commercial investments.

NIGERIA'S LOW HOME OWNERSHIP RATING. Housing anywhere in the world is a basic necessity, which in the order of human needs, ranks third after food and clothing, and considering Nigeria has one of the lowest home ownership rates in Africa, the ability to create real estate projects that can bridge the supply-demand gap would mean a higher return on investment.

According to Northcourt, a Lagos-based real estate advisory firm, the surge in urban growth (at 4.3%, H2 2019) places pressure on real estate infrastructure, and as successful cities attract more population, the price of urban real estate will increase due to demand.

For a city like Lagos, which currently has the highest population in Africa, the small unit apartments is where residential investments hold the most profits in 2020, as compiled from industry analysis.



GLOBAL INNOVATION



➤ **New building technologies are critical to improved housing quality and stock as well as lowering the cost of construction.** Around the world, recent innovations and improvements in building technology have seen rapid construction of affordable mass housing at lesser cost compared to conventional building methods. From the shuttering system to EMS and CutWork's revolutionary 48 hour ready concrete house, **innovations keep improving on all aspects of the construction process.**

THE METROBLOCK BUILDING SYSTEM



➤ Predictive building technologies have long been touted as a viable path to reducing our national housing deficit and improving the quality across board on account of its modulation and efficiency. In countries where these technologies are being used, **challenges associated with housing affordability and availability are being effectively addressed.**

PREDICTIVE BUILDING TECHNOLOGY

➤ Following this global trend, GRIDLOCK ANALYTICA Ltd. has **designed and developed an interlocking block system, the first in Nigeria, as a cost efficient, easy-to-use building system.** (See pages 4-7)

METROBLOCK 100% LOCAL



Designed and developed by a team of architects and engineers for our environment and building culture, **it responds effectly to issues of cost, design and other construction considerations.**

JOBS & LOCAL BUILDING MATERIALS



➤ Metroblock Building system will create job opportunities and train artisans in the use of it's new building technology while using local building materials.

Further, we will continue to invest and develop new ways to increase the level of predictability and mechanization in the building construction process with focus on wall and floor finishing.



TECHNOLOGY BUILDS CHEAPER, BETTER, STRONGER HOUSES FASTER.

With the help of innovative technology, affordable housing are been rapidly constructed around the world faster than before.



STAND OUT WITH US...

AN OPPORTUNITY TO STAND OUT AND TAKE THE LEAD

Having understood the vital role of innovation and technology in improving the quantity and quality of housing, we set ourselves the task of developing Nigeria's first interlocking block building system.

ALL MARK
India



DPI BLOCK
India



KILBLOK
Europe



HYDRO FORM
South Africa



HABITERRA:
Canada



MAT LOCK
South Korea



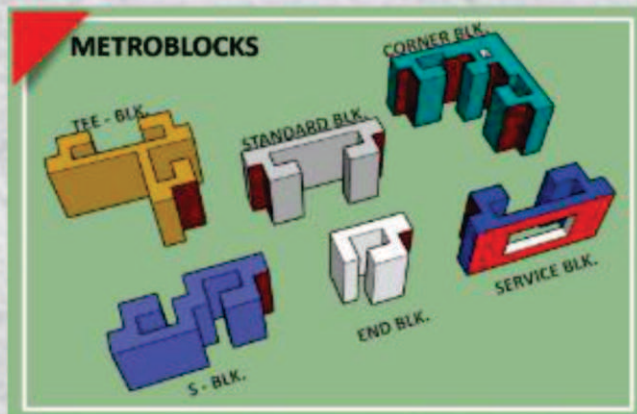
ARMO
Mexico



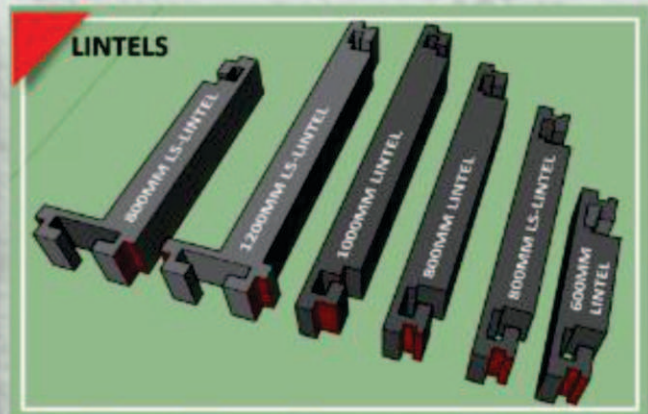
A VIABLE AND EFFICIENT PATH TO BUILD BETTER, STRONGER HOUSES FASTER.

The technology is cheap, adaptable and easy to use. Its growing acceptance and preference around the world over conventional building systems is proof of its viability as an affective building solution.

METROBLOCK BUILDING SYSTEM is focused on delivering **high quality and durable mass housing** through an efficient process that cuts **construction time, reduces wastes and generates employment**. METROBLOCK BUILDING system is designed and developed in Nigeria and takes into consideration the peculiar needs of our building culture and environment.

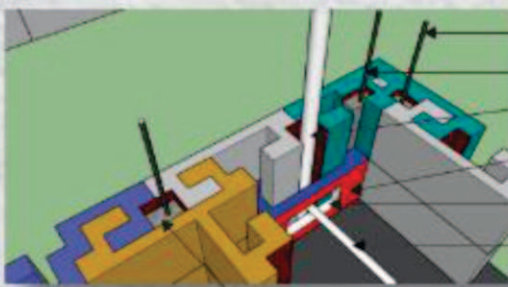


The **METROBLOCK** Building System Technology uses **5 basic block units** to form walls and openings. A service block variant of the standard block is designed to access electric and plumbing pipes and their wall fixtures.



The system has a series of lintels that seamlessly lock with blocks. This feature is not available in other similar building systems from other countries. It shows how the **METROBLOCK** can be adapted to local preferences.

■ ADVANTAGES OF THE METROBLOCK BUILDING SYSTEM.



- Reinforcements spaced as specified.
- Plumbing/Electricity pipe
- Service block for electrical and plumbing works.
- Opening in service block for fittings.
- Pipes exiting opening in service block.
- Cement grout runs from floor slab to ring beam.

The METROBLOCK Building System delivers on **quality, time and cost**. Structures built using this system have the following features:

- 1. BUILD FASTER** - The system cuts **construction time by 50%**.
- 2. NO NEED FOR MORTAR** - Blocks **do not require mortar at joints** as they are designed to interlock.
- 3. NO NEED FOR EXPENSIVE SKILLED LABOUR** - Blocks are **self-aligning** and do not require skilled labour. Anyone can build with these blocks with minimal training.

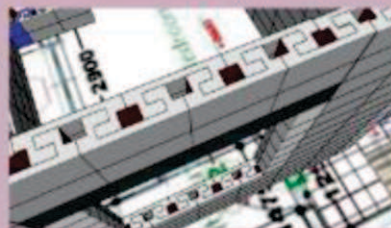
4. SEISMIC RESISTANCE - *Reinforcements run through walls* giving them strength and mechanical framework necessary for tensile and compressive integrity.

5. LONG SERVICE LIFE - *30 years maintenance-free*, at least, on the building's fundamental structures.

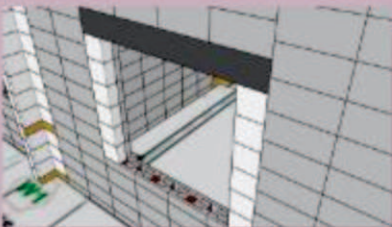
THERE'S MORE...



METROBLOCK double crab-like grip gives it exceptional strength and stability.



Channels in blocks run contiguously from floor slab to ring beam allowing for reinforcements and piping.



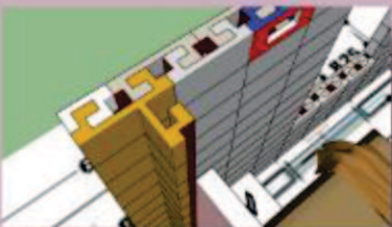
Though optional, the addition of lintels satisfies one of our basic building needs.



Our design and adaptation system ensures standards and specifications are met for all projects.

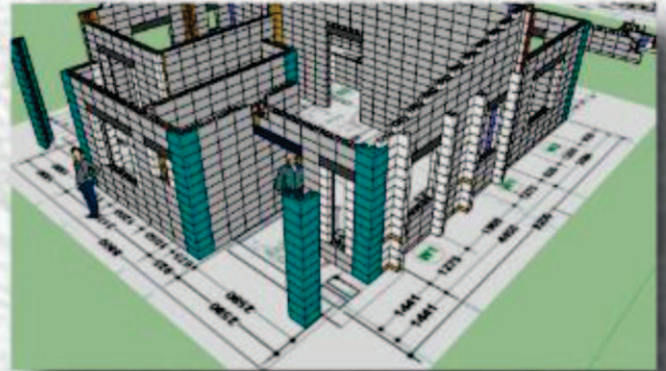


Corner blocks are designed for extra strength and grip.



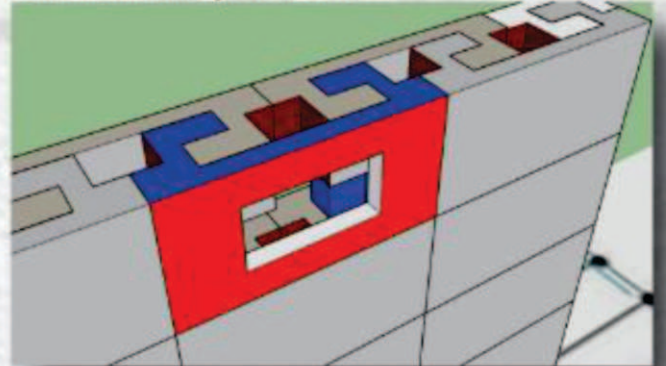
Blocks articulate easily requiring little time and no specialized skill.

ADAPTING BUILDING PLANS.



Any conventional building plan can be adapted to the METROBLOCK Building System. The configurations and dimensions of METROBLOCKS differ from conventional blocks, however our team will achieve this with little or no distortions.

ATTACHING A/C UNITS.



In response to our weather, the METROBLOCK service block provides access for AC piping, a feature unavailable in other similar building systems.

SUITABLE FOR ALL BUILDINGS, ALL STRUCTURES
The METROBLOCK Building system can be used for all types of building projects:

- A. Residential
- B. Institutional
- C. Single floor/Up to 3 floors

And for:

- 1. Mass social housing
- 2. Estates
- 3. Private buildings



Excellent Acoustic and thermal qualities owing to the double facing wall



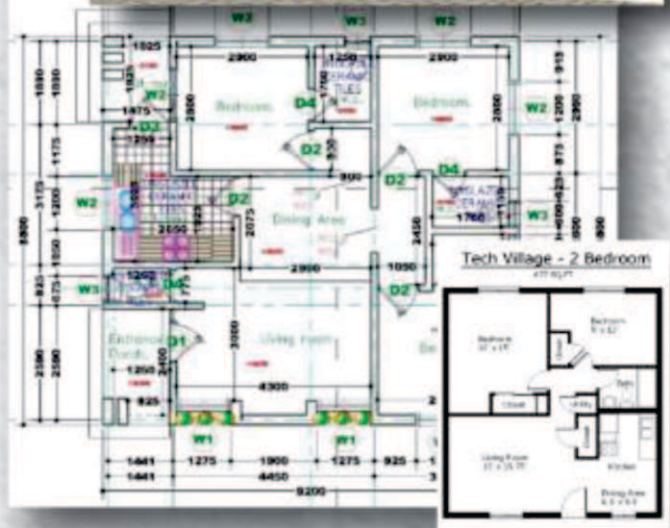
MAKE THE SWITCH.



Fast, durable and cheaper houses built with 70% less water, at 50% less time, with no high skilled labour required and a 30 years guarantee on all fundamental structures.

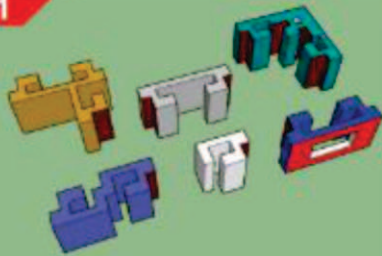


BUILD WITH METROBLOCK BUILDING SYSTEM



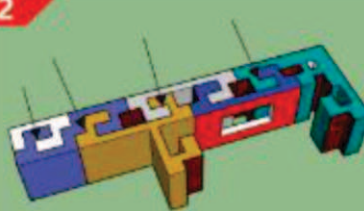
HOW IT WORKS.

1



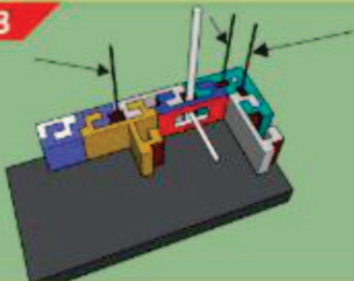
6 basic blocks are combined in different ways to form walls and opening for all building types.

2



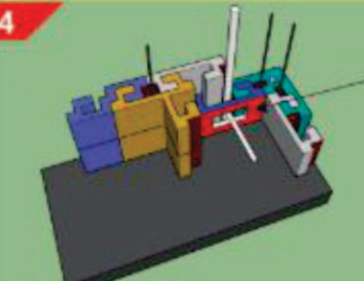
They articulate in a tight fit at mortarless joints offering both vertical and horizontal resistance.

3



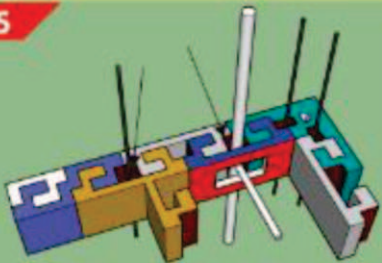
Wall reinforcements from concrete floor slab run up entire wall height to ring beam.

4



Service blocks allow for easy access to pipes and installation of fittings.

5



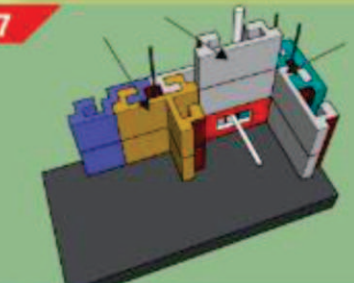
Holes for plumbing, electrical & reinforcements. eliminate the need for opening and patching

6



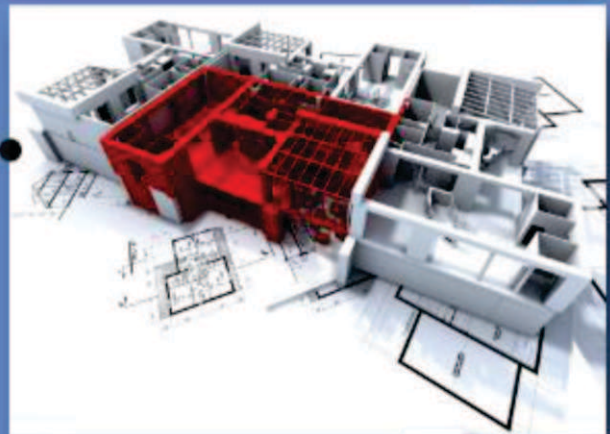
Corner blocks are sturdy with double channels for bigger reinforcements.

7



Blocks are stacked by sliding reinforcements & pipes through holes.

METROBLOCK SUPPORT SERVICES



BUILDING DESIGN.

Our in-house team stands ready to provide design services for any client who would require it. We guarantee the most contemporary floor layout and elevations from our architects who have years of experience and an impressive resource to draw from.

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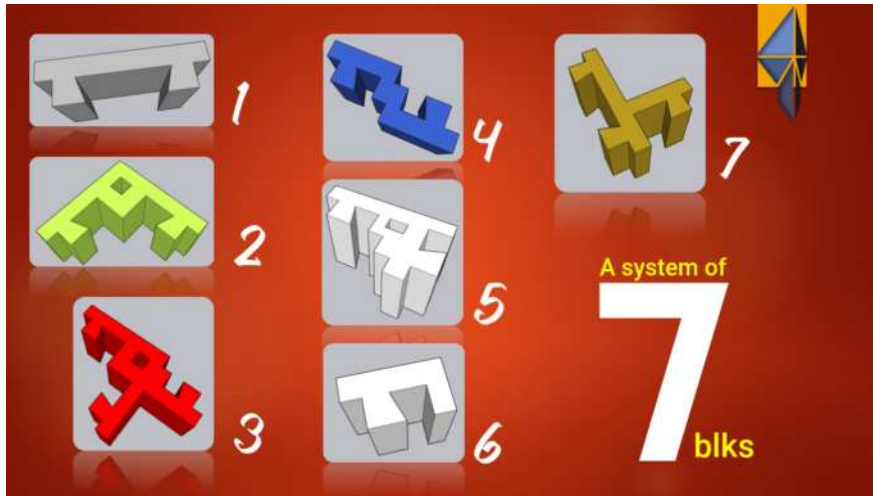
ENQUIRIES

ARC.
DAVID AUDU
MetroBlock



METRO BLOCK®





The Metroblock Building System - MBS offers more flexibility in cost and construction management. Blocks can be rapidly stacked and lintels quickly put in place to deliver high quality structures cheaper and faster.



Metroblocks can be used for single and multiple floors as curtain walls or in a framed structured or as a stand-alone load bearing system in single storey buildings.



Metroblocks system requiring no opening of walls for the installation of plumbing, electrical or ICT pipes. Attention has been paid to M&E and other technical technical consideration for the installation of pipes, fixtures and fittings



Demand Analysis:

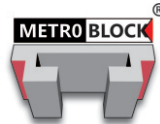
According to the World Bank, **Nigeria's housing deficit stood at 17m in 2013**. Given the country's current migration and urbanization trends it is safe to assume it will be **20 million before 2022**. By the same trend, Nigeria will become the third most populous country in the world by 2050 according to the UN. It is expected that demand for **affordable housing will increase by 700,000 units** annually against the current delivery of 100,000. The country's middle class is growing rapidly and the provision of affordable housing to accommodate millions of Nigerians in this bracket remains a daunting challenge. **360 billion USD will be needed at an assumed cost of 10,000USD per unit**, to bridge the deficit, with Lagos alone requiring 25.9billion USD for its 3million housing gap. Forecast for the Nigeria construction sector will **continue to expand with positive growth over the period 2016-2020** driven largely by real estate and housing development. Nigeria's Vision 2020, the frame work under which the government intends to achieve this will provide the needed assurances and support.

Between 2011-2015, the **industry's real term value increased at an annual compound growth rate, (CAGR), of 11.68% with a projected CAGR growth of 9.49% over the forecast period**. Specifically, The National Integrated Infrastructure Master Plan, (NIIMP), 2023, provides policy guidelines under which this can be achieved through the Public-Private Partnership (PPP). **This will ultimately see the industry rise in real terms in 2020.**

In the last decade efforts have been made at all ties of government to tackle the housing deficit, prominent among these are the launch of a **5000 housing units project in the 36 states for civil servants from which only 2,736 units have been built as at August of 2017 and the reported investment of 3.2billion USD, roughly N1trn, in June of 2018 by the Federal Housing Authority (FHA) in new housing projects spread across the country over the next 45 years**. In spite of these salutary efforts, demand still continues to outstrip supply.

Some of the major determinants of real estate demand are:

1. **ACCESS TO HOUSING FINANCE.** Over three years of sustained price falls, Nigeria's real estate sector is stabilizing driven mostly by **improved funding and access to housing finance**. These improvements have seen mortgage penetration rising to record levels in Nigeria. **From 2010 to 2016 the sector grew by 82% to a record high of N518.8 billion**. This is against N348.1bn (\$1.1bn) in 2012 and N28.4 in 2010. Equally the transactions within the sector increased from 100,000 between 1960 to 2009 to 181,519 between 2010 and 2016 according to figures made available by Mortgage Banks Association of Nigeria (MBAN). In January 2017 the Federal Mortgage Bank of Nigeria (FMBN) **announced it had signed a \$2bn tripartite MOU with Shelter Afrique**, a housing finance agency and the Real Estate Developers Association of Nigeria, which will see the later provide financing for affordable housing. To further bolster its chances of success the federal government took steps, in June 2018, to support FMBN activities with an allocation of **N500bn over the next five years**.

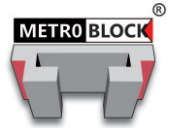


In addition, the bank intends to raise its available funds from her current levels of **N5bn at a yearly rate of N100bn**. It took a bold step to reassert itself in **August 2018 by launching a 3000-unit housing project** structured to provide financing under a rent-to-own program for Nigeria's growing middle class. It is also expected that population and urbanization trends are expected to sustain steady mid and long term industry expansion.

2. Population demographics. **The emergence of Nigeria's middle class as one of the major drivers of real estate growth** has not come as a surprise to many. With increasing disposable income and savings occasioned by a robust and growing private sector and government policies aimed at fast tracking housing delivery and access to housing financing, **millions of Nigerians have become financially viable off-takers for the industry.**

The inclusion of private sector employees in the national contributory housing scheme has further swelled this class making it the single most dominant factor determining the nature and type of products the real estate sector offers. **This new trend has seen a shift from condominiums to residential units of 1, 2 and 3 bed apartments, products preferred by medium and low income people.**

DEMAND ANALYSIS



MARKET ANALYSIS

MARKET IDENTIFICATION:

Products and services are **targeted at low to medium income earners** in the public and private sector. In addition, institutional and commercial projects for government and the private sector are also within the purview of our market.

BUSINESS CYCLE:

The real estate market is in a **recovery phase** having weathered a rough trough season. **Projections for growth are high, especially in a post Covid-19 era** which is expected to see an infusion of intervention funds and an increase in human and capital development expenditure, all aimed at accelerating the rate of economic recovery. Building and civil construction are generally seen as catalyst in this effort.

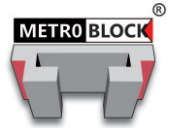
PRODUCT NICHE:

DNA Architecture Nig. Ltd. offers a unique building system with METROBLOCK. The system cuts cost of construction down to 30%, uses 70% less water, 50% faster construction time and a durable, long service-life building with a 30 year guarantee on basic structures. In addition, **its holistic approach to estate development which allows for the easy installation of electricity with renewable energy and the construction of roads using polymers or enzymes in a clean, cheaper and efficient way gives it a unique advantage** in the affordable housing sector. Its overall approach to housing delivery substantially increase the off-grid status of housing projects and delivers on cost, quality and time.

GROWTH POTENTIAL:

Forecast for growth in the real estate sector in Nigeria is high, especially where **modular construction with its high degree of predictability and mechanization as seen in MetroBlock**, is employed. **The immediate gain in speed and quality of construction as well as savings in cost are not just a huge attraction but the technology is seen by most as the most viable path in addressing our 20 million national housing deficit.**

Further, with the Federal Mortgage Bank of Nigeria's reduction in equity contribution to 10%, **CBN recent Real Estate intervention Funds** and its policy direction encouraging commercial banks to **increase lending at lower rates** are definite growth pills for the sector. In addition, the drop in Nigeria Treasury Bill rates occasioned by the CBN's restriction to participation in its Open Market Operation, which **opened up the real estate sector as a potential recipient of new investments and the increased spending on infrastructure by the Federal and State government**, means the opening of more areas and the provision of social amenities and services, conditions suitable for real estate development.



PRODUCTS

PRODUCTS:

Gridlock Analytica's range of products and services offer clients the most **affordable predictive building technology** that leverages on increased **mechanizaation and cost saving process**. Perfect for all kinds of **building types, multiple floors and all levels of public and private clients**, the package is designed to offer a unique construction experience, making this new and affordable building technology available to everyone.

A. METROBLOCK BUILDING SYSTEM.

METROBLOCK, our flagship product, is a building system, **designed and developed in Nigeria** and configured to deliver high quality and durable affordable housing through an efficient process that **cuts construction time, reduces wastes and generates employment**.

The METROBLOCK Building System Technology uses **7 basic block units to form walls and openings**. A service block variant of the standard block is designed to access electric and plumbing pipes and for wall fixtures/fittings.

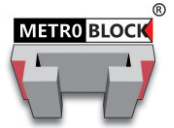
The METROBLOCK Building System delivers on quality, time and cost.

The system has the following advantages:

1. **FASTER CONSTRUCTION TIME** - The system cuts constructionme by **50%**.
2. **MORTARLESS JOINTS** - **Blocks do not require mortar at joints** as they are designed to interlock.
3. **NO NEED FOR EXPENSIVE SKILLED LABOUR** - Blocks are **self-aligning** and do not require skilled labour. Anyone can build with these blocks with minimal training
4. **STRENGTH** - **Reinforcements run through walls** giving them strength and the mechanical framework necessary for tensile and compressive integrity.
5. **LONG SERVICE LIFE** - **20 years maintenance-free**, at least, on the building's basic structures.

FEATURES.

- A. Wall reinforcements run through service channels from concrete floor slab up entire wall height to ring beam.
- B. Channels for plumbing, electrical & reinforcements eliminate the need for opening/breaking and patching of walls.
- C. Blocks articulate easily requiring little time and no specialized skill by sliding reinforcements & pipes through channels.
- D. They articulate in a tight-fit at mortarless joints offering both vertical and horizontal resistance.
- E. Service blocks allow for easy access to pipes and installationof fittings.
- F. Corner blocks are sturdy with double channels for bigger reinforcements.
- G. The system has excellent acoustic and thermal qualities owing to its double facing walls.
- H. METROBLOCK double crab-like grip gives it exceptional strength and stability.



PRODUCTS

LINTELS AND A/C OPENINGS.

As proof of it's ability to respond to local building preferences, the system has a series of **lintels that seamlessly lock with blocks as well as openings for AC units.** These feature are not available in other similar building systems from other parts of the world. It shows how the METROBLOCK can be adapted to local preferences.

ADAPTING CONVENTIONAL BUILDING PLANS TO THE METRO SYSTEM.

Any conventional building plan can be adapted to the METROBLOCK Building System. Our design and adaptation system ensures standards and specifications are met for all projects.

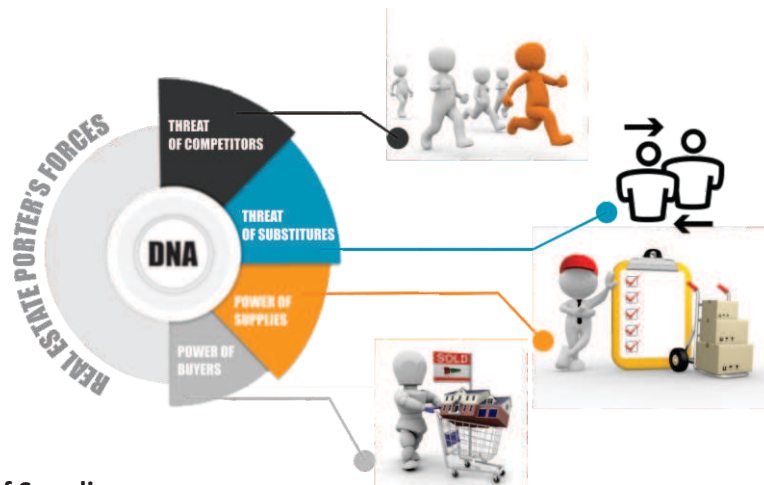
The METROBLOCK Building system can be used for **all types of buildings:**

- A. Residential.
- B. Institutional
- C. Single floor/multiple floors

And for:

1. Mass social housing
2. Estates
3. Private buildings.

Because of its high level of efficiency the METROBLOCK Building System seeks to deliver typical 1,2 and 3 bedroom within 2 to 3 weeks, post foundation under favourable conditions.



PORTER'S FORCES.

1. Bargaining Power Of Suppliers:

A. There are **multiple suppliers for the different products and services required in the industry**. Cement is available in commercial quantity from Dangote, Bua, Elephant cement factories all year round as well as stone dust from several quarries across the country.

B. Multiple suppliers with all year availability of materials translates to competitive product/material pricing.

C. The bargaining power of suppliers is **significantly low** as a result of these factors.

2. Bargaining Power Of Buyers:

A. Sensitivity to price change is low or at best or non-existent. Majority of the off-takers are contributors to the National Housing Fund and will be financing through their primary mortgage institutions (PMI). PMI's loans are fixed at different levels for different beneficiaries. Developers are also aware of the level of funds available to their target off-takers and usually build houses to fit their budget. As such **price fluctuations as it relates to the bargaining power of buyers are a minimal concern**.

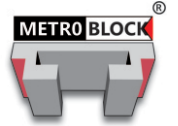
B. Prices in the affordable housing sector usually holds steady within a tight range. There's no indication in the foreseeable future to show a reversal.

C. There are very limited choices and **not enough developers in the sector**. Social housing developers are few compared to those catering to high income earners. This is largely as a result of the small margins associated with projects in this area. Those who are in this sub-sector are passionate about easing the housing deficit especially for medium and low income earners.

3. Threats Of New Entrants:

A. There are **significant entry barriers ranging from funding, land acquisition, government regulations and certification of financially viable off-takers**. For most developers, these hurdles are not only daunting but are also resource consuming. Successfully navigating this terrain means a good understanding of how the industry works, who to see, what to do and when to do it. Once a pace is set it becomes a lot easier to make a headway.

B. There is **low customer loyalty** even for established brands making it easy for new entrants to gain traction and succeed if they can overcome entry obstacles and offer a unique product or system. Products currently in the Nigerian market are very basic and offer the barest minimum, especially in the affordable housing sector. New entrants with fresh ideas, **offering more at a very competitive price will gain traction quickly**. The housing deficit is huge, therefore new entrants do not pose any significant threat.



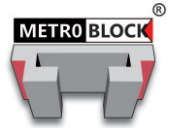
PORTER'S FORCES

4. Threats Of Substitues:

- A. There are few substitutes in the market. With few developers willing to invest in the affordable and social housing sub-sectors, Middle income Nigerians hoping to own a house but cannot afford the exorbitant price tags of luxury accommodations available have no substitute but the few developers.
- B. Existing options are expensive, approximately 30% higher.

5. Competition Among Existing Competitors In The Industry:

- A. Competition is generally low. Some competitors have government background or support.
- B. Others have strong financial base.
- C. Less than 20% of developers are focused on affordable housing on account of low margins in the sub-sector.



Gridlock Analytica welcomes interested investors to discuss further on investment opportunities in its Metroblock Building System(MBS).

We are open to the following engagement modules for the commercialization of the building system:

1. A new, free and clean, Special Purpose Vehicle (SPV).
2. A Joint Venture Partnership (JVP)

In furtherance of our core business model of a decentralized engagement platform and to ensure effective market penetration, ease of commercial activities as well as the creation of avenues for mul

ple investors, we have made the decision to engage along these broad

1. The MBS operational and commercial exclusivity is offered, clear and separate, for each of the six geopolitical zones and renewable after 5 years.
2. Our contribution to whatever module of engagement shall be MBS and the technical support required for its successful use only.
3. Having an ongoing or about-to-take-off building project to which the technology can be immediately applied will be an added advantage.
4. Other aspects, including details of the business engagement will be discussed after a viable interest is established.

For further inquiries contact:
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David Audu (amnia)
Architect

INVESTMENT INFO.