

Builders

Magazine

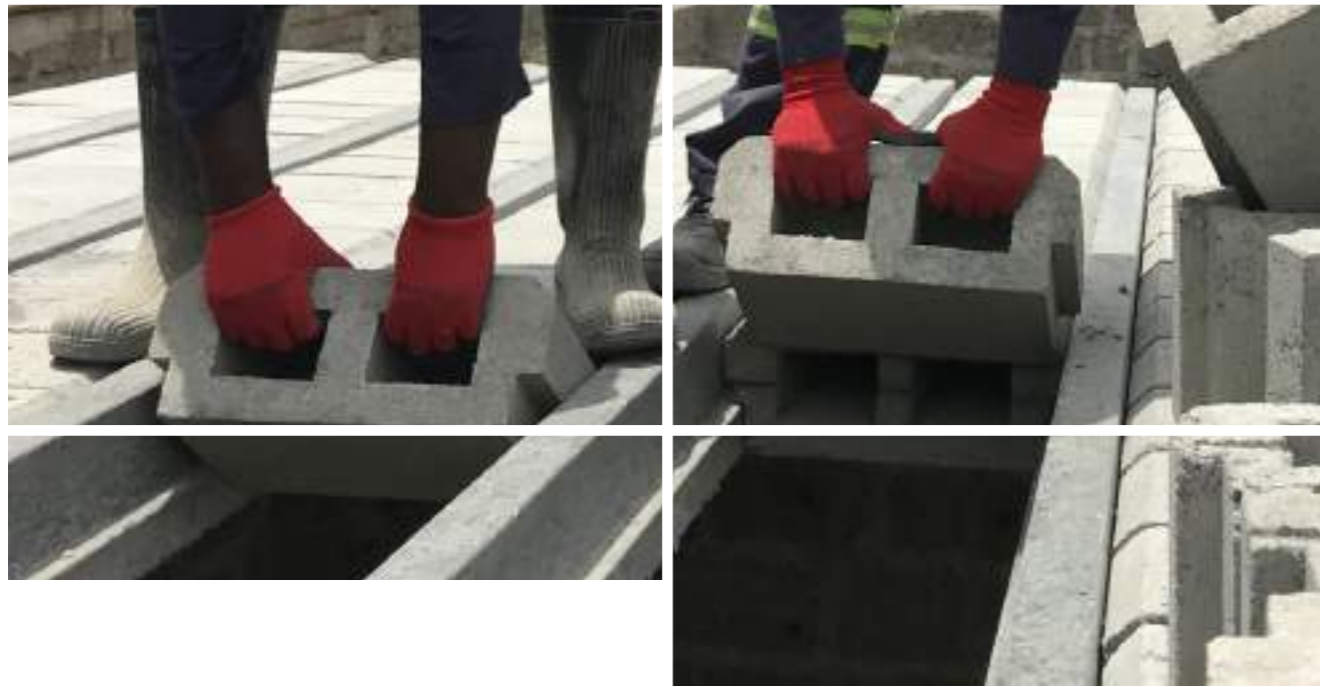
APRIL MAY 2022



Bomet's Ultramodern hospital in Tenwek

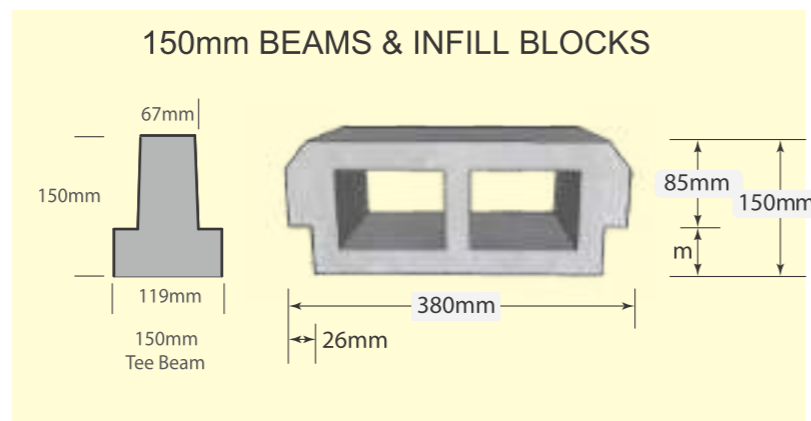


SUSPENDED BEAM & BLOCK FLOOR



The EcoConcrete Beam and Block Flooring System saves time and cost on site. The floor is quick to install without the need for specialist skills. Site preparation is reduced and no hardcore or oversite concreting is required. Also, internal foundations can be reduced.

Once installed the system is rot and draught proof. The floor provides an immediate working platform allowing building works to continue without delay. The EcoConcrete Beam and Block Flooring System is ideal for a wide range of uses ranging from housing to flats and offices.



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ECOCONCRETE KENYA

150mm BEAM AND BLOCK FLOOR/ROOF SLAB SYSTEM.



Eco-concrete is a construction company that deals with suspended floor solutions by using T-shaped pre-cast concrete beams and infill blocks. This floor solution has been an existing technology since the 1970s. This structural option now has a market share in the UK of approximately 40%. Fairly new to the Kenyan market but gradually becoming a popular option for builders in Kenya. This is evident by the number of contemporary structures coming up over the years using precast concrete.

An extremely versatile flooring system that can be used in a large variety of applications. It's structurally sound and is an engineered solution. At Ecoconcrete we work with project professionals to give them the results that they need and to assist them in making an informed decision that they and their clients, are comfortable using.

ENVIRONMENTAL SUSTAINABILITY OF BEAM AND BLOCK. Sustainability in construction starts with a mindset of foresight and the use of contemporary building products and techniques at one's disposal. Eco-concrete prides itself in building environmentally to sustain our surroundings by using precast concrete beams and blocks, in creating a durable slab.

Precast and environmental responsibility are compatible. Their compatibility comes from the sustainable properties of constituent materials used in making concrete. Precast is from recycled materials that are available in plenty on

earth. Its production requires low inherent energy, produces little waste, and durable structures. Eco-concrete strives to bridge the destructive gap on adverse environmental pollution in various ways. They include.

1. CONSERVING OUR FOREST

The slab is made off-site and delivered as a finished product, ready for installation immediately. This means less site preparation; no formwork or shuttering is required to support the slab since its fully suspended. Shattering requires a lot of woodwork to create a support base posing an adverse threat to afforestation.

2. WASTE PRODUCTION

A big part of sustainability includes the long-established principles of reduction, reuse, and recycling. Pre-cast concrete reduces the number of materials used, reusing construction processes like molds and forms while recycling materials such as concrete aggregates and additives. Precast manufacturing holds tighter tolerances and precise mixture proportions, which reduces waste. This product perfectly encapsulates sustainability.

3. AIR POLLUTION

Air emissions should always be controlled. There should not be any visible dust cloud anywhere in or around the construction site. pre-cast ensures a controlled production environment, reducing air pollution.

4. VISUAL IMPACT

pre-cast concrete beams and blocks are visually appealing since they're delivered as the finished product and provide a ready working platform. There is no shuttering or propping visible on site.

5. NOISE

Noise pollution is both a safety hazard and an environmental issue. Our pre-cast floor system is manufactured out of site and proper measures are put in place to ensure noise during production is controlled.

BENEFITS OF THE SLAB

- **Quality assurance and durability** – The beam and block slab can withstand all weather elements and go through long periods of wear and tear while still maintaining structural integrity.
- **Preliminaries** – The slab allows you massive savings on preliminaries, you get to save on storage, security, space, time, and labour.
- **Value engineering** - The responsibility for the structural integrity of a building remains with the Project Engineer. However, we also ensure that what is proposed is suitable and works for the design underway. Part of what our engineers do is, calculate and detail the load-bearing capacity of your structure. They take into consideration things such as live load and dead load when assessing your build.
- **No compaction or backfill** – No ground heave problems from black cotton soil.
- **Minimum site preparation** – Just remove the topsoil and vegetation to provide a 150mm void or 225mm for clay between the underside of the floor and the ground surface and excavate trenches for foundation walls only.
- **No shuttering and formworks** – The beam and block slab is fully suspended and do not require any support base. The beams are placed from end to end on the ground beam or ring beam
- **No reinforcement required** – The beams are made of class 60 concrete, prestressed with high tensile steel, and manufactured to BS EN 15037, meaning there is no need for reinforcement.
- **Fast and easy installation** – The slab is a precast solution produced out of site and delivered as a finished product ready for installation. 100 square meters in a day.
- **All-weather construction** – The slab installation is not influenced by weather conditions.
- **Reduced theft of materials from the site** – The slab is uniquely designed for each build.
- **Accurate costing** – the price of precast does not change after quotation and it's not affected by fluctuating prices of construction materials.
- **Early working platform** – After installation, the slab provides an immediate safe working platform.

- **Dump resistance** – The slab suspends on the ground beam restricting moisture movement through the walls and floor.
- **Earthquake resistant** – The reinforcement in precast concrete element takes up occurring tensile force resulting in optimum protection against high loads.
- **Soundproof** – The slab is manufactured with an absorptive porous surface that allows sound to enter without being reflected on the surface.
- **Versatile** – The slab can be adapted to different functions.

DESIGN OF THE BEAM

The beams are made of class 60 concrete, prestressed with high tensile steel, and manufactured to BS EN 15037. They are designed in accordance with the code of practice BS 8110:1985 and are checked for compliance on each specific job undertaken.

DESIGN OF THE HOLLOW BLOCKS

The standard block size used (380mm, 200mm, 150mm) conformed to BN EN 771-3. It provides 7.5N/mm² or greater compression strength.

CONSTRUCTION

Installation of the beam and block flooring system is straightforward. Using a single block at each end, the beams are spaced as shown on the installation drawings. The precast concrete beams are laid in rows with the ends supported by the blockwork inner leaf of a cavity wall. The beams are placed on the masonry walls as per drawing details and finally adjusted to suit the width of the filler block. Closed-end filler blocks are placed at the end of each line.

If transverse stiffener beams are detailed, then blocks are left out to accommodate reinforcement and concrete. Services should be installed over blocks and not beams and the specified mesh is placed throughout. Before screeding is cast, all dust, debris, and rubble should be removed, and the blocks thoroughly wetted. A sand and cement grout mix is then brushed over the whole slab and worked well into the joints then the 50mm screed topping.

FINISHES

Grout - The mix of cement, sand, and water hardens once applied and left to cure. The mixture acts as a filler or sealant to fill up unwanted gaps, voids, and openings on the surface that may cause the seepage of water, debris or any particulate matter left after the installation. Similarly, grouting is a strengthening technique. The grout mixture allows the beams and blocks to act together to resist imposed loads.

Screed – Using a fibre mesh of 0.9kg/m³ and a 50mm sand and cement over the base of the slab gives the ideal surface for tiling.

Plaster – A 20mm ceiling plaster closed with 0.9kg/m³ of fibre mesh.

Builders' Magazine

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Contributions

The editors welcome news items, press releases, articles and photographs relating to the Construction Industry. These will be considered and, if accepted, published. No responsibility will be accepted should contributions be lost, damaged or incorrectly printed.

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ASSORTED USES OF BEAM AND BLOCK



•Residential houses slab installation



•Flat roof



•Highrise building



•Staircase



•Commercial buildings



•Sloppy ramp formation



•Underground water tank cover slab



•Steel decking replaced by beam and block



•Septic tank cover slab

The beam and block slab can withstand all weather elements and go through long periods of wear and tear while still maintaining structural integrity.

Cement Consumption Now at Historic Highmence

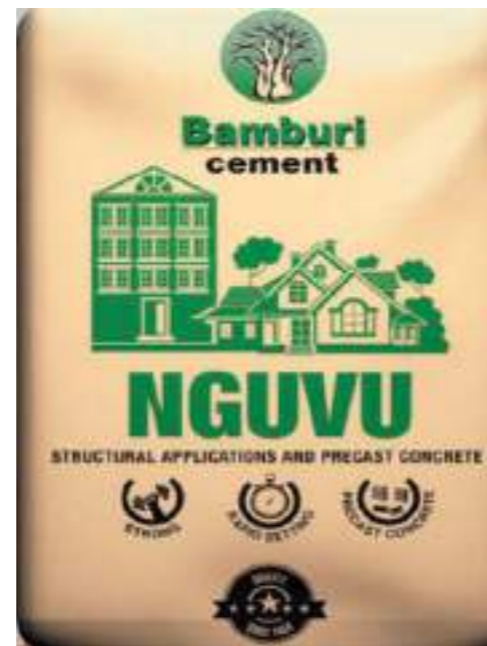
Official data by the Kenya National Bureau of Statistics (KNBS) shows that the intake was highest since the available recorded data of 2010.

Cement consumption in Kenya rose to an all-time high of 726,823 tonnes in July, a new report shows, buoyed by the construction of mega infrastructure projects.

Construction of mega-public projects such as the 27.1km Nairobi Expressway, the upgrade of James Gichuru – Rironi highway, the dualling of the Kenol-Marua road, the Nairobi Western Bypass, and the affordable housing projects have boosted cement usage in the country this year.

Commodity demand forced factories to increase production to 741,647 metric tonnes, which was the highest in over 10 years.

Other construction projects are Mombasa's Dongo Kundu bypass, the Eldoret bypass, and the Lamu Port.



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Construction of Mwache Dam Finally Set to Commence

Construction of the much-awaited Sh. 20 billion Mwache Multipurpose Dam project in Kwale County is set to begin next month.

The project, whose contract was signed in August 2018, was delayed for several years as the contractor waited the government to finalize the land compensation.

Addressing the press in Kwale County, Principal Secretary for Water in the Ministry of Water, Sanitation and Irrigation, Joseph Irungu said, the government had finally made a breakthrough in the construction of the dam.

Irungu added that the government was working hard to ensure that all issues that had delayed the project including land compensation were finalized before November 1st.

“The government has sent money to the National Land Commission to finalize the compensation exercise and we expect the commission to complete the exercises so that we can hand over the order of commencement to the contractor,” Irungu said.

Area Governor Salim Mvurya said a total of Sh. 4 billion would be used to compensate individuals who would permanently lose their parcels of land to the mega dam

project.

The government announced that over 77 per cent of persons living in critical areas where the main dam shall be constructed have already been compensated.

The compensation exercise is expected to hit 90 per cent by next week as the National Land Commission (NLC) is set to expedite the disbursement of funds.

The project will require 1,600 acres of land and will involve displacement of approximately 12,000 persons whose assets and livelihoods may be affected, as well as access to natural or economic resources as a result of activities under the Mwache Dam Project.

The seven-year project co-funded by the World Bank and the Kenya Government through Kenya Water Security Programme is expected to eradicate the problem of water shortage in the counties of Kwale, Mombasa, and Kilifi.



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PS Irungu when he gave an update on Mwache Dam construction. Behind him is Kwale Governor Salim Mvurya.



These images are an artist's impression

8 Common Mistakes Property Developers Make

Property development has been described as a high-risk, high reward industry. There are numerous risks attached to this particular business; stories abound about how even the biggest property developers globally face uncertain circumstances (case in point Chinese giant Evergrande.)

Success in this industry means being able to dig into the research troves and fine print, and talking to and working with the right people. With the right information and approach, you can avoid these eight common mistakes investors make in the industry.

1. Developing On a Whim

Some developers may have project financing ready while others use various methods such as off-plan purchases and credit from financial institutions to fund their property development ventures. Financing alone isn't enough to make one qualified to invest. One should have a steady understanding of the prevailing market, such as what people want, and where they are buying.

• Incorrect Estimations of Time and Building Costs

Whether it is a small residential building or a large commercial development, thorough planning is the key and hallmark of any successful property development venture. This can only be done by carrying out feasibility studies to extract any unprecedented scenarios that may occur, for example, unsuitable site conditions. A feasibility study will enable you to make an informed choice about whether to proceed with the venture or not.

• Not Engaging the Right Team

It is imperative that any developer has the right people surrounding them, be they architects, MEP consultants, structural engineers, contractors, town planners, QSs, etc. Since it is highly unlikely that the developer will have this team in-house, a project manager such as an architect can always provide connections to the rest of the project team which will be well-trained. They will also be able to provide suggestions on cost mitigations, site conditions, how to reduce costs without affecting quality, etc.

• Engaging an Inexperienced Contractor

The builder or contractor is easily the most important part of the project team. Hiring an inexperienced builder can lead to massive losses on your part as a developer. There should always be a contingency plan as part of the contract, for example, liquidated damages, that allow you as the client to claim monetary compensation in case the contractor is slack or produces deficient work.

• Failure To Properly Estimate Liquidity Requirements

While ambition is a key part of success, blind ambition can draw a developer into the trenches of debt and insolvency. Before embarking on any project, it is crucial to have enough project financing that can cover paid phases of the project, specific milestones, or even something as crucial as labour and machinery hire. Lack of finances can cost project delays that can chip away at your profits and drive off potential

clients.

• Poor Planning and Coordination with Local Authorities

For large commercial and residential developments such as gated communities, it is important to get all the approvals from the local authorities and regulators before embarking on the project. This will not only serve to improve the rapport between the developer and the authorities but may just end up saving the developer from cases of disputes and litigation as well.

• Engaging in too Many Projects Simultaneously

Many developers fall into this trap, by using funds from one development on another venture, or by taking on multiple projects at once that they can't handle. Real estate is an unpredictable industry and such a move may cost you greatly

• Going "Low" On Everything

An overly cheap design from an architect or engineer, or a builder who prices their services at ridiculously low margins is always a red flag. Likewise, while the developer may want to keep everything cheap so as to achieve maximum profits, it is important to remember that some clients are ready to pay more for quality.

Conclusion

Granted, property development is a risky business; however, there are some mistakes that developers can avoid by putting the above tips into practice and carrying out their due diligence.



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Sultan PALACE

BEACH RETREAT





ABOUT US
Sultan Palace Development Ltd believes in delivering quality high end luxury property to our customers. As we guarantee quality, uniqueness and top notch investments full of high returns both for investors and home owners.

Our purpose is to optimise relationships, service and profitability. Our vision is to deliver quality, assurance and timeless properties into the real estate market.

TYPE	OPTION	SIZE	BED	AVERAGE PRICE
Emerald Condos	TYPE A OPTION A	170sqm	3	26M
	TYPE A OPTION B	170sqm	3	26M
		130sqm	2	18M
		80sqm	1	-
	TYPE B	130sqm	2	18M
Ruby Beach		230sqm	3	37M
Houses				
Diamond Residences.		400sqm	4	80M

THE PROJECT
Sultan Palace Beach Retreat is a contemporary development conceptualised by the internationally renowned Wimberley Allison Tong & Goo (WATG), with Planning Systems Services Ltd as the Project Architects. The phase one of the project is set to be completed in December 2016.

The project consist of the Sultan Palace Home(Diamond Residences, Ruby Beach Houses and the Emerald Condos), A five star hotel(phase 2),The Souk and the exquisite water park.

Take Note: The villas are exclusive and are for SALE STRICTLY BY INVITATION by existing buyers or the developer. These are introductory prices and are subject to change by the developer without prior notice.

YOUR INVESTMENT:
TAKE NOTE that these are estimated figures based on a research report undertaken around the Coast by Hass Consult and are therefore subject to change.

Properties around North Coast experience a 10% to 15% capital growth therefore your property will experience a substantial capital and rental returns.

TYPE	AVERAGE PRICE	BED	MAX. PERSON	LOW (NET) /day	PEAK (NET) /day	RETURNS 270 DAYS OCCUPANCY	% RETURNS
Emerald Condos	25M	3	6	10,000	15,000	4.05M	16%
	18M	2	4	7,000	10,000	2.7M	15%
	14M	1	2	3,000	5000	1.35M	13.5%
Ruby Beach Houses.	35M	3	6	15,000	25,000	6.75M	19%



Sultan Palace Development Ltd will retain the common areas. The Souk will be managed by a renowned hotelier who will promote the destination and increase rental yields for those who chose to rent out their units through the management company.

Residents will enjoy membership to the Souk and become shareholders to the Souk, the heart and soul of Sultan Beach Retreat

- PAYMENTS OPTIONS:**
- A Reservation fee of Ksh.250, 000.
 - 20% Upon Execution of the Letter of offer
 - The rest to be paid in 8 equal instalments.

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THE PARTICULARS ARE SUBJECT TO CHANGE WITHOUT PRIOR NOTICE FROM THE DEVELOPER.

Information for Reference Purposes Only. Terms



Escape to the Royal World
Nestled in one of the most exclusive address in the coastal region, Sultan Palace Beach Retreat is all about creating a unique and exciting lifestyle experience. Occupying 43 acres along 700m of pristine white sandy beach of Kikambala-Kilifi County, Sultan Palace Beach Retreat is a world of royal living and guarantees residents the best life has to offer.

The retreat will have luxurious holiday homes that are inspired by a modern fuse of the Swahili-Arabic architectural design. It will also have a Waterpark, the 'souk'-a residents club that will host a cocktail bar, a beach bar, a gourmet restaurant, an elegant café/ brasserie as well as gyms, games rooms and large residents lounge. This would be one of the most prestigious address offering the best in hospitality, entertainment, fine dining in one destination.

Diamond Residences



These exceptional four bedroom villas are the crème de la crème of the Sultan Palace homes measuring approximately 400 SQM. They have been designed according to standards befitting the home of a Sultan and here, you will live like a true palate with all the luxury that comes with it. Consideration has been given to sea views and cooling breezes, to give maximum value and enjoyment to each of the Diamond Residence.



Residents will get to enjoy spectacular and unobstructed view of the ocean. The Diamond Residences are double storied and have two wings: North wing and South wing. At the center of this magnificent holiday home, is the grand entrance porch

Sultan PALACE

BEACH RETREAT



single block of indigenous coastal forest remaining in East Africa.

WATER SPORTS

There are plenty of watersports adventures and activities available near the resort including skiing, paddle boarding, sailing, snorkeling, kayaking, windsurfing, scuba diving and so much more. Get outside and explore the Kenyan coast in the fresh air and great outdoor activities.

that leads to hallway connecting to the terrace which has a mini pool with main swimming pool being just a few meters away outside the veranda. The main swimming pool has an expansive terrace suitable for sunbathing and general relaxation. The master bedroom is on the first floor all ensuite with an arch opening along the lobby letting in the fine ocean breeze that will blow you away in your slumber bed.

Diamond Residence Interiors

The Diamond Residence interiors are a cut above. Fitted with the highest quality fixtures and finishing from renowned international companies including BRAVAT and OPPEIN. The Diamond residences are redefining the royal standard of living. Everything you have ever desired in a home can fit comfortably in these spacious villas.



Designer terraces are large enveloped with glistening beauty and each terrace opens out to a spectacular view of the majestic surroundings.

Balconies and patios will be the interface between indoor/outdoor areas and be of a size and configuration which facilitates their use year round as outdoor living spaces.

Features

- All ensuite 4bedroom + DSQ with approximately 400sqm
- Quality brands for sanitary fittings and Accessories
- Toughened glass cubicle in the bathrooms
- Utility Room
- A private pool
- Air conditioning
- Access Control
- Standby Generator
- Landscaped Gardens
- Spectacular and unobstructed view of the ocean.
- Open air balconies and terraces
- 2 parking slots plus extra slots for the guests
- 24/7 Security patrol
- Membership to the Souk

Ruby Beach House

The beautiful Ruby Beach Houses are approximately 230 SQM and arranged in little groups to create a sense of community resulting to an architecturally exciting, enjoyable living experience. They are double storied and the ground floor has a spacious lounge with a terrace, ensuite guest bedroom/study, and a yard with a utility room. It also features an American kitchen and a dining area with a terrace offering sweeping views of the resort.



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BEACH RETREAT



On the first floor, we have the master bedroom ensuite with a balcony and a second bedroom also ensuite plus a balcony.

The lobby also connects to the roof terrace and from time to time you can have some 'me time' as you enjoy the cool ocean breeze. The Ruby Beach Houses will be perfect for a large family that is looking forward to spending an exciting holiday experience together. You will have an option of choosing from two exquisite designs.

Ruby Beach House Interiors

As our homes increasingly reflect identity and unique taste, Ruby Beach Houses offer style, distinction, warmth and intimacy. Their perfect striking design taps into your exotic daydreams of your desired home.

For the bathrooms and washrooms, we will use high quality sanitary fittings and accessories with ceramic tiles. The bathrooms will also be fitted with toughened well-appointed glass cubicle where you will enjoy your shower times.



Features

- The Master bed ensuite 3 bedroom with approximately 230sqm
- Toughened glass cubicle in the bathrooms
- Utility room
- A pool located in the gorgeous natural landscape
- Air conditioning
- Access Control
- Standby Generator
- Landscaped Gardens
- Accessible parking area
- Clustered in little groups; for a sense privacy and community.
- Partial view of the ocean.
- 24/7 security patrol
- Membership to the Souk

Emerald Condos

The Condos are exquisitely placed overlooking the entire resort with the best views of the surrounding area. Inspired by authentic Swahili-Arabic architecture, the Emerald Condos been precisely designed to guarantee comfort, luxury, and serenity. There are three classy design options for Emerald Condos; one bedroom condos of approximately 80 SQM, two bedroom condos of approximately 130 SQM and the three bedroom condos of approximately 170 SQM.

They have generous space and regardless of the your choice of condo, you will enjoy beautiful views. All the Emerald Condos have two to four terraces, on the bedrooms and living rooms where you will enjoy a beautiful scenery of the resort at the comfort of your home.



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The condos are low rise so as to offer the much needed privacy since each condo will have limited number of occupants.

Emerald Condos Interiors

The interior and exterior decorations blend to create a seamless definition between the two components. The interiors are modern with clean open plan living spaces flooded with natural light and natural ventilation taking advantage of the sunny, breezy coastal climate.

The awnings, eaves and overhangs are a response to the climate and provide for filtered light to enter the house and also serve to articulate Emerald's façade and adding the visual interest. They will be designed to be open and light weight in appearance with a maximum of 20% of the façade being fully enclosed. With finishes done by the finest craftsmen, Emerald Condos will be the place to delight in the magic of Sultan Palace Beach Retreat.

Features

- Quality brands for sanitary fittings and accessories
- Toughened glass cubicle in the bathrooms
- An Elevator will be available depending on the unit block
- Air conditioning
- Quality interior finishing
- Access Control
- Standby Generator
- Spacious balconies providing a good relaxing area
- Spectacular view of the ocean depending on the unit location
- Secured ample parking area
- 24/7 security Patrol
- Membership to the souk

The Souk

The Souk is the heart and soul of leisure at Sultan Palace Beach Retreat. There will be a central residents' club house that will be the meeting place and focal point for the resort with beautiful vistas and lush indigenous landscaping, cooling fountains and as well as outside illuminations. We recognize that you not only want a home that reflects your unique taste, your accomplishments and your style but also a place to enjoy your free time. Life has never been merrier than living at the resort as there are a variety of amenities and activities for the residents.



The Souk has been designed to enhance your life while you pursue unlimited fun living at the resort. It will have the best leisure facilities to complement your stay at the retreat and will be undoubtedly be the heart of the Sultan Palace community. Relish in the cool ocean breeze as you walk along the shore and get a chance to see the beautiful coral reef, palm trees and sandy beaches before returning to the Souk for more fun and entertainment.

Heart of Leisure

Sultan Palace will be a fun filled paradise with something for everyone. The 'Souk', a Residents' Club, will have the best leisure facilities to complement your stay at the retreat and will be undoubtedly be the heart of the Sultan Palace community. Indulge yourself in wide range of activities from water sports to fine cuisine. The children can have an adventure in our water park as you enjoy a cocktail at the souk cafe' or take a soothing walk along the coast. Also included is a kid's club and water park that will have all kinds of fun activities for the young ones.

The Water Park, which will be a haven for the kids will feature play areas with slides, tunnels, splash pads and lazy rivers, designed to enable children have active fun and adventure. We will also have an exquisite member's lounge for your parties and other functions while the food as well as drinks for the guests will be available from the gourmet restaurant also within the Souk.



Sultan PALACE

BEACH RETREAT

Features

- A fine café / brasserie
- Well-equipped gym
- Games room
- Member's lounge for parties and functions
- A gourmet restaurant

A Five Star Hotel

We will have a five star hotel to be built in the phase two of the project enhancing its place as a leading global resort of choice for those looking forward to an exciting holiday experience. The hotel will be solely managed by a renowned international hotel brand having vast experience in the holiday homes market. With the all the pleasures of a luxury resort, a holiday spent at Sultan Palace Beach Retreat shall be like no other. Apart from catering for holiday makers, the hotel will also host business meetings and conferences.

The hotel will have state-of-the art conference facilities furnished in the royal style that makes it well suited for international conventions, large corporate events or exhibitions.

Other amenities will include: A spa, Gym, Beach club, Cocktail bar and Business center.

It is anticipated that these conference facilities will generate substantial visitor numbers to Sultan Palace. This will benefit the residents through additional bookings for their homes via the management company.

A Royal Lifestyle

Enjoy the majestic environment set in the natural beauty of Kilifi. The secluded Sultan Palace beach offers serene privacy. There is a private magical beach with sugar soft sand and rolling waves where you'll get to experience one of the most enchanting views of the Indian Ocean on the East African shore. Your mornings and evenings on the balcony will be second to none with days spent playing, sunbathing, swimming on the shore and enjoying a nature walk for miles along the pristine beach.

The safety and privacy of Sultan Palace residents has been given the highest priority as the beach will have controlled access. You will also have a chance to explore the culture of taste as it will offer various gourmet dining options to cater for every palate living at the retreat. Enjoy the freshest and the finest food as well as drinks at the exquisite souk restaurant as well as the five star hotel.

KEY ATTRACTIONS

VIPINGO RIDGE

While staying at Sultan Palace Beach Retreat, there will be many more options for your leisure time in addition to the leisure activities available at the retreat. You will have an opportunity to play golf at Vipingo Ridge, one of the best golf course available down at the Kenyan coast. The course is built to the most exacting international standards, with panoramic ocean views to the east and sunsets over the vast African

interior to the west.

FORT JESUS

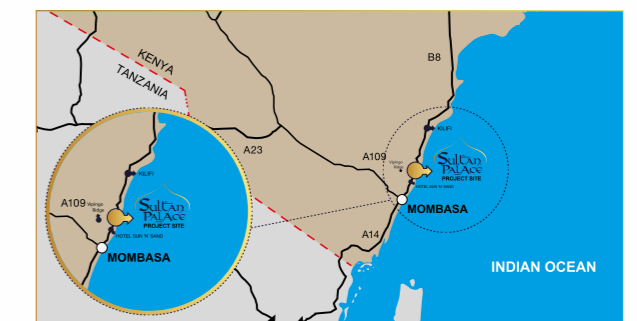
Fort Jesus, located on the edge of a coral ridge overlooking the entrance to the Old Port of Mombasa is a world heritage site with a very fascinating history. Fort Jesus is a Portuguese fort built between 1593 and 1596 by order of King Philip I of Portugal. It was built in the shape of a man, and was given the name of Jesus.

NGUUNI NATURE SANCTUARY

Nguuni Nature Sanctuary is a beautiful site in the heart of Kiambeni estate in Mombasa. It gives you satisfaction at nature scented air and view of animals at the same time. The picnic site is a nice recreation centre for a group and also private enough, for two.

ARUBUKO SOBOKE FOREST

It forms the centerpiece of a world-renowned habitat for rare and endangered mammals and birds. The concentration of rare species accounts for its status as the second most important site for conservation of threatened bird species on the African mainland. Arabuko-Sokoke Forest is the largest



Sultan Palace
Development Limited

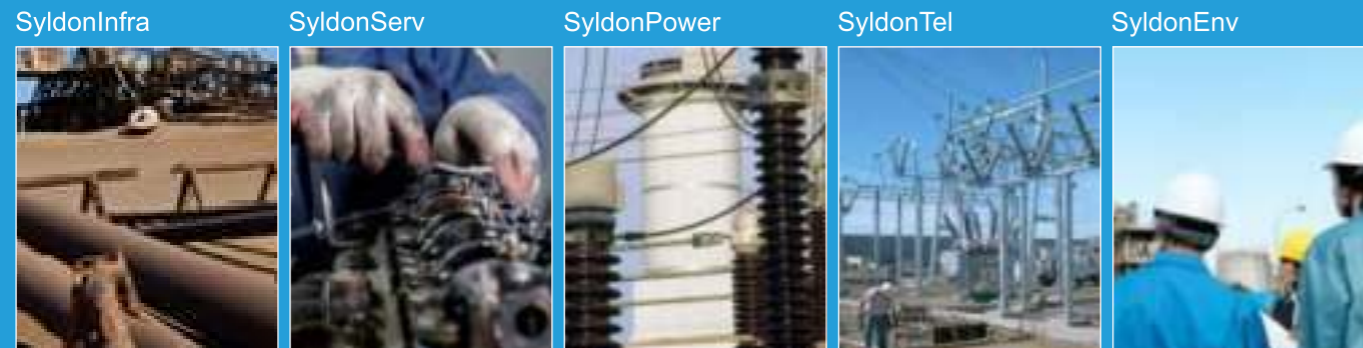
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Syldon and Partners is a wholly Kenya owned limited liability firm established in May, 2000 in Kenya to undertake consultancy services in design, installation and maintenance of Electrical, Mechanical Services and Management Information Systems (MIS), Civil and Structural works.

There are two directors, Eng. G.N. Orlando – Managing Director in charge of all Electrical Services and general management of the firm. Eng. Calleb Olali is Director in-charge of mechanical services. Other core staff members include Assistant Electrical Engineer John Ruddy Munda and Assistant Mechanical Engineer Felix Ollando.

Eng. H.S Roopra, Eng. Peter Chege are associates of the firm and backstops Eng. Orlando and Eng. Olali in all electrical and mechanical assignments respectively.

Eng. Victor Ongewa and Eng. Cyrus Njungu are associates in-charge of power sub-stations and transmission/distribution lines respectively.



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Ultramodern Hospital Coming up in Tenwek, Bomet



Tenwek Hospital in Bomet will soon have a new Cardiothoracic and Emergency Centre.

The ultramodern hospital building will provide a 176 bed-self-contained surgical center all within 4-storey levels above ground and 2 basements, located 300m west of the main Tenwek Hospital campus.

Triad Architects in collaboration with US-based Health Facilities Group (HFG) are the design consultants.

The building is composed of two interlinked blocks connected through a central core with three hospital lifts and a W-shaped ramp. Each block has adequate provision of staircases for fire escape within a 30 meters running distance.

Designed for both outpatients and inpatients, the building is equipped with spaces and facilities that demonstrate understanding of hierarchy of functions in a hospital. On the ground and first floors, the building is providing examination rooms, a pharmacy, a lab, a blood bank, CT and X-ray machines. On second floor, the hospital building will have an endoscopy suite that has four theatres, a 16-bed recovery room, a training center with classrooms, a conference hall, offices, and a heart surgery suite. The third floor will have six cardiothoracic theaters, a hybrid theater, a preoperative holding area and a 32-bed post anesthesia care center. The general wards accommodating up to 80 patient beds are distributed in all the 4 floors of the building.

HFG led efforts in medical planning, schematic design, design development, program production, and healthcare-related design. By working closely with hospital staff, using census data, and identifying anticipated goals, HFG determined a building size that could satisfy current and future needs. The data gathered during repeated site visits allowed HFG to accommodate the unique requirements of the region.



Why You Should Consider Waffle System for Your Next Project

On-site waffle slab construction with concrete cast-in-situ. The waffle is an uncommon type of building solution in Kenya and East Africa. It is not clear why this is the case but it is possible that information on its use on the broader construction landscape is not widely available. However, as you'll shortly see, the waffle is a resilient and cost-effective method of building, suitable for both foundations and typical floor slab systems.

What is a waffle system and how is it constructed? Waffle systems can be composed of either waffle slabs or waffle foundation systems. In both cases, the load-bearing system is made up of a two-way spanning joist grid with reinforcement laid orthogonally in the spaces between the waffles. These waffle pods can be made of plastic, EPS, or any other suitable material, usually proprietary. Concrete is then poured into the space system between the waffle pods and vibrated as usual. The effect is the waffle system with spaced grids or ribs underneath and a flat slab on the top. The entire system can also be pre-cast and installed on-site, which is a much faster alternative.

The procedure for building an in-situ waffle slab system is as below:

- Pour the columns that will support the waffle slab (applicable where the first floor or any other floor other than the ground floor is to be constructed using waffle.) Solid column heads or band beams can be incorporated into the waffle support system to reduce the effect of punching shear at the column sections.
- Install the formwork and support shuttering that will support the waffle slab.
- Lay the waffle pods and spacers according to the desired depth of the slab and structural drawings.
- Lay the reinforcement, for example, main beam reinforcements placed in-between the waffle grids. Secondary reinforcement can be included, and mesh reinforcement to eliminate cracking can also be placed on top of the waffle grid.
- Pour the concrete once everything is in place and vibrate it. Setting and curing times for the concrete depending on the desired grade of concrete.
- Remove the formwork and waffle pods once the concrete is cured.

Practical advantages of waffle systems

Waffle systems, either for slabs or foundations, are useful for the transmission of bending and shear loads across large spans. While the necessity for this might not be immediately apparent for small residential dwellings with usual slab spans of 12 meters or less, the benefits are impressive for structures with large spans above 12 m. Waffle slabs have high strength, i.e. resistance to bending and shear across large spans, and thus are useful for commercial and industrial establishments

such as warehouses, airports, cinema halls, and cafeterias where large column-to-column spans are necessary. Structures constructed with waffle systems have a higher aesthetic appeal, can have increased storey heights, and eliminate the need for hanging ceilings since utility services such as HVAC and lighting conduits can be installed within the waffle system. Besides, the plastic, EPS, or any other proprietary waffle pod system can be easily removed if coated with a grease substitute before concrete pouring, and reused in other waffle construction.

The proprietary wafflemat foundation is especially useful where raft or spread foundations are necessary, such as in areas with low or uneven bearing capacity. The wafflemat acts as a single monolithic unit, improving the integrity of the foundation and negating the effects of negative uplift forces that would otherwise damage the foundation and superstructure. In the same reasoning, the depth of foundation can be significantly reduced even for large structures, which ultimately reduces the earthworks and general foundation costs, and improves drainage.

Is the waffle system for you?

While the practicality of the waffle system is mostly limited to structures with large spans where free space in-between columns is a necessity, their use isn't limited to these large structures. Residential homeowners constructing smaller dwellings may not see the overall cost benefits, as these lie in the need to increase slab spans while reducing their overall depth. Commercial developers such as hospitals and malls will, however, benefit immensely from the practicalities of waffle systems.



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The power of two!

Atlas Copco once again sets the innovation benchmark in portable power by housing two fully loaded generators in one custom 20-foot container. This smart move provides the ultimate reliable and flexible prime and critical standby power solution for utilities, rental, construction, mining, quarrying, and oil and gas applications with variable load requirements.

“The QAC TwinPower™ is a containerised generator with two power packs,” explains David Stanford, Atlas Copco Power Technique Business Line Manager - Portable Products. “By containerising two QAC generators side by side and packaging up to 1MW of predictable power on a single platform, we have doubled the power and the flexibility offering to our customers and end-users. To add even more value, we have designed these generators with the objective to provide customers with the opportunity to choose the power solution best suited for those applications with changeable power and current usage requirements.”

“This modular solution is unrivalled when it comes to flexibility and economy,” continues Stanford. He explains that this configuration, with its fast-parallelising system, allows the two generators to work independently or in parallel with each other, providing multiple solutions and combinations between prime and standby use, one unit working at 50Hz and the other at 60Hz. For handling even larger projects, the QAC 1350 TwinPower™ has two dedicated Atlas Copco controllers Qc4004, including touchscreen Qd1001 functionality, enabling end-users to easily parallel with other generators. Alongside the choice of island mode or using the Power Management System (PMS), it is also possible to run them in parallel with mains, peak shaving, fixed power and AMF. In addition, owing to the TwinPower™ concept, one generator can run at 50% while the other is being serviced, offering end-users a built-in backup as standard for seamless 24/7 power supply.

In terms of operational costs, the highly efficient QAC generator delivers maximum power with minimal fuel consumption. Setting these generators apart is the smart electric VSD (Variable Speed Drive) motor-driven cooling fan which adjusts the cooling flow to the specific requirements of the engine. The unrivalled load acceptance ability of these generators is thanks to the engine/alternator performance which, in association with its respective advanced control systems, is able to accept a 100% load step with more than 70% load step acceptance within ISO 8528-G3 class respectively. Stanford also points out that with a fuel saving of up to 10%, the performance of these generators is equal to or even better than the conventional single engine generator running under normal load. This efficiency also helps to reduce customers’ carbon footprint. The spillage free frame, which can contain 110% of the fuel tank capacity, reduces any potentially negative impact the environment.

The Stage V compliant QAC 1350 TwinPower™ is also environmentally smart. With an up to 85% reduction in nitrogen oxide (NOx) emissions, this containerised solution helps end-users to shrink their carbon footprint. A low noise level of 70dB(A) at 7m makes these containerised generators highly suited for applications that are at the heart of the working environment, creating a safe and comfortable work space. A touch screen provides operators with easy functionality.

For end-users, it is always critical to maximise uptime along every phase of the supply chain. As containers are designed for easy transportation, the containerised generators are easily moved from one worksite to the next. Featuring a compact footprint and equipped with solid lifting eyes and forklift inlets, the 20-foot ISO-certified container can be swiftly and safely positioned on site or manoeuvred onto flat-bed trucks for transportation between sites.

Also contributing to optimum uptime and subsequent elevated production levels is the generator’s remarkable serviceability. The QAC generators require less than two hours of service after 500 hours of operation. Large access panels and several custom service tools allow for effortless maintenance while the strategic positioning of the two generators’ engines and alternators on opposite sides of the platform allow for fast and easy access to major components. Heavy-duty dual stage fuel and air filtration is included as standard, for longer up-time and extended service intervals. The slide in/out base frame facilitates the removal of the aggregate engine from the container for maintenance and other operational tasks.

The robust containerised generators are ideal for use in extreme temperatures and at high altitudes. The QAC’s intelligent engine/alternator cooling system guarantees 100% power at 40°C at an altitude of 1000m.

Atlas Copco generators are renowned for their rugged reliability and efficiency over an extended life span and the EU compliant QAC units stay true to these high standards. “There can simply be no compromise when it comes to superior quality components which are designed and tested to ensure a long and productive lifespan for low total cost of ownership,” concludes Stanford.

Atlas Copco Group Great ideas accelerate innovation. At Atlas Copco we have been turning industrial ideas into business-critical benefits since 1873. By listening to our customers and knowing their needs, we deliver value and innovate with the future in mind. Atlas Copco is based in Stockholm, Sweden with customers in more than 180 countries and about 37 000 employees. Revenues of BSEK 95/9 BEUR in 2018. For more information: www.atlascopcogroup.com

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Portable Air is a division within Atlas Copco’s Power Technique business area. The division designs, manufactures and markets a comprehensive range of mobile and energy-efficient compressors, handheld light-demolition tools and industry focused solutions, such as high-pressure boosters and quality air equipment. The products are used in a wide range of industries including construction, mining, oil and gas, and rental. The divisional headquarters are located in Antwerp, Belgium. Principal product development and manufacturing units are located in Europe, Asia, South America and North America.

Power and Flow is a division within Atlas Copco’s Power Technique business area. The division designs, manufactures and markets a comprehensive range of mobile and energy-efficient generators, light towers, and pumps. Along with associated accessories and connectivity solutions. The products are used in a wide range of industries including construction, industrial, mining, dewatering, and rental. The divisional headquarters are located in Zaragoza, Spain. Principal product development and manufacturing units are located in Europe, Asia, South America and North America.



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SKF Zambia proudly welcomes Baby Rhino Zlatan to the family!

Rhinos are disappearing at an alarming rate and Zambia's Rhinoceros population was sadly completely wiped out in 1989 as a result of poaching. "The SKF Zambia team is committed to bringing awareness to this poaching scourge and to doing our part in protecting and saving these majestic animals for future generations," declares Mel Patel, Key Accounts Manager at SKF Zambia.

"In light of this, we decided to approach Sukulu Nature Reserve to find out how we can assist them with Rhino Conservation. Imagine our excitement when Sukulu invited us to assist them in naming a little baby Rhino who was born on the Reserve on the 22nd of September 2021!"

The name Zlatan, which in Swedish means 'to dominate/to be on top/to excel', was suggested for the little Rhino. "We felt that it was so appropriate because SKF, a Swedish company, strives for nothing less," adds Mel.

Sukulu had also created a website inviting the general public to name the little new-born Rhino and to make a donation, in an effort to raise funds for Rhino Conservation. The highest bidder would be invited to the Reserve to join them during Zlatan's health check and microchipping procedures. "As SKF Zambia was the highest bidder, this honour and privilege falls to us," says an elated Mel. He, together with a delegation from

SKF Zambia, will be assisting the medical staff and game rangers at Sukulu during these procedures in the first week of May 2022.

"We are so proud of our new little addition to the SKF Zambia family and we look forward to meeting Zlatan in May next year; he will then be eight months old! We hope that through our support, we have helped in some small way to raise awareness of the plight of our precious Rhinos," concludes Mel.

Established in 2012, family-owned and -operated Sukulu Nature Reserve protects several thousand hectares of pristine landscapes and ecosystems in Zambia. The Reserve is home to a multitude of species of game animals, bird life and a variety of safari vistas. Sukulu was responsible for the relocation of a white Rhino breeding herd to Zambia in an effort to establish the first ever Zambian breeding programme.



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