



AFRICAN UNION FOR
HOUSING FINANCE

THE MOCK SHARKROOM

Summary of investment proposals

The 38th Annual AUHF Conference and AGM saw the first Mock Sharkroom session take place on Day 2 of the conference as an initiative of the newly established Investment Committee under the theme 'Green Financing'. Nine organisations from across the continent presented their initiatives showcasing how they are adding value to Africa's housing value chain all the while combating climate change and environmental degradation. Of the 9 presentations, 5 were in-person and the other 4 presented virtually. Constructive feedback to the presentations was provided by a panel of investors; Maureen Katuvesirauina, the International Finance Corporation; Debra Erb, the United States International Development Finance Corporation; and Zachary Munene, Shelter Afrique. With all the initiatives having obtained valuable insights from the session, there was a single winner voted for by the audience, the Social Housing and Mortgage Finance Fund (Egypt) who presented on their large scale green building initiative.



Dr Hend Farouh gives her victory speech at the end of the session while (from left to right) May Abdel Hamid, SHMFF; Debra Erb, DFC; Maureen Katuvesirauina, IFC; and Zachary Munene, Shelter Afrique look on.

Since its formation in 1984, the AUHF has evolved into a member-based, industry association of mortgage banks, building societies, housing corporations, Development Finance Institutions and other organisations involved in the mobilisation of funds for shelter and housing on the African continent. As an industry body, the AUHF promotes the development of effective housing markets and the delivery of affordable housing across Africa, working in the interests of its members and the industry as a whole. For more details about the AUHF, email Thandiwe Dhlamini: thandiwe@housingfinanceafrica.org



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Affordable housing investment summary

Social Housing and Mortgage Finance Fund (SMHFF)

The Egyptian government seeks to provide appropriate housing units for middle and low-income citizens that are suitable for their financial capabilities, and in a way that guarantees their humanity, dignity, and a safe-decent life. Therefore, the government issued a law establishing the Social Housing and Mortgage Finance Fund according to Presidential Decree No. 93 of 2018 for social housing affairs and mortgage finance subsidization, and it is considered as a public service authority, having a legal personality. Email Mohammed Abd El-Ghaffar:

mohammedabdo1900@gmail.com

<https://www.shmff.gov.eg/>

Green Building Initiative: Funding partnership already established with the World Bank but additional investments of varying values are welcome. The target is to build 25 000 units.

For the first time in Egypt and the Middle East, SHMFF aims to build green environmentally friendly units for low-income citizens. Although this will increase the cost of the housing unit in the short term, it will contribute to reducing carbon emissions, water consumption, electricity and energy consumption in the long term thus translating to cost savings. SHMFF is working with local and international partners to reduce the cost of these housing units for low-income citizens.



Innovative methods are also used in the construction process at the technical level to contribute to the construction of an environmentally friendly housing unit that minimises material wastages, in fact the building methods and process adopted works to efficiently reuse some residual materials.

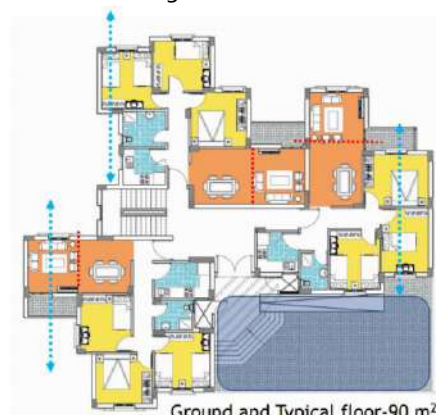
SHMFF has built a thousand housing units as the initial phase, after which they will conduct in-depth environmental studies to measure the environmental impact of the project on the surrounding environment, in preparation for the completion of the construction process to reach 25 000 housing units in 2024.

The main objective in this process is to transform all social housing projects in Egypt into environmentally friendly units.

Key aspects

The green building initiative will see a total of 25 000 units constructed in 4 Egyptian cities by 2024. The units will be accredited with the Green Pyramid Rating System (GPRS) for social housing. To date, 1 000 units have been constructed, and the rest of the units will be rolled out until 2024.

The project is expected to contribute to a significant long-term environmental impact; it would have reduced energy consumption by 24-50%; reduced carbon emissions by 33-39%; reduced water consumption by up to 40%, and reduced solid construction waste up to 70%. All of these are factors with a significant national environmental impact.



The image to the left is a typical floorplan of one of the blocks. The picture below shows completed apartment blocks with a resident riding their bicycle on one of the non-motorised transport pathways. Source: SHMFF presentation. <https://www.auhf.co.za/auhf-conference-2022-a-green-urban-future-for-affordable-housing/>





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CITRA
live different



Affordable housing investment summary

CITRA – CentralBlue housing project. Cape Town, South Africa

Citra is an affordable housing player in the South African market. Fundamentally, Citra seeks to develop sustainable, affordable neighbourhoods which are enabled through the green Citra Building Technology and a careful design from an urban scale down to the small details of a single unit. Email Joel Baur: joel@citra.co.za

<https://citra.co.za/project/centralblue/>

Citra building technology

The Citra Building Technology reduces the building envelope to the minimum. A Citra panel of only 140mm thickness provides 5 times better thermal insulation value than a conventional 280mm cavity wall. The Citra building system has a 1h fire rating, is rated for heavy duty fixings and can withstand storms up to 200km/h. At the same time, the Citra Building Technology reduces carbon emissions by 50%. Citra aims at reducing construction time by up to 75% and construction costs by up to 20%.



The Citra system has high thermal resistance, with an R-value of 2.2 m²K/W – which is over five times more efficient than a standard South African cavity wall. This makes Citra homes cool in the summer and warmer in winter.

Citra homes have an exceptionally long lifespan at very low maintenance costs. None of the material degrades over time, and the only concern would be to repaint the home at regular intervals to keep it in good condition.



Finished Citra home. Source: <https://www.auhf.co.za/auhf-conference-2022-a-green-urban-future-for-affordable-housing/>.

CentralBlue development: Seeking US\$14.7 million to complete the development of 1800 res units, 24 sqm retail/business, a school, a church and creches in South Africa.

CentralBlue is a Citra development located in Blue Downs, Cape Town, South Africa.



Houses under construction at Central Blue. Source: <https://www.auhf.co.za/auhf-conference-2022-a-green-urban-future-for-affordable-housing/>.

At CentralBlue, Citra aims at providing a sustainable home and life for over 5,000 individuals. The development will include sustainable education, work, and leisure areas for all residents. For as many as possible of the 1 800 homes, Citra aims at using its Building Technology, saving up to 1 million tons of CO₂ (assuming a 50-year lifecycle).

At CentralBlue Neighbourhood, Citra will have 1 800 residential units; 24 000 sqm GLA non-residential areas (retail, business); a 2 500 pupils school; a 120-room hotel; creches and a church. The projected value of the project at completion is estimated to be around R2 billion / USD 110 million.



Finished units at Central Blue. Source: <https://www.auhf.co.za/auhf-conference-2022-a-green-urban-future-for-affordable-housing/>.

The equity contribution towards the project is approx. R250 million / USD 14 million; and Senior Funding secured from NHFC is approx. R50 million / USD 2,7 million.

Affordable housing investment summary ZIMA Homes, Wangige, Nairobi Kenya.

Zima Homes is an affordable housing project which sets out to address two key issues of the Kenyan market: limited quality affordable housing and the need for more sustainable buildings. The project seeks to attain affordability and green status to demonstrate that having both is possible – Zima Homes recently got EDGE certified. Email Etta Madete: etta@buildxstudio.com

<https://www.zimahomes.co.ke/#home>

The picture below is an interior look of a unit at Zima. Source: Zima Homes presentation <https://www.auhf.co.za/auhf-conference-2022-a-green-urban-future-for-affordable-housing/>.



The Zima Homes pilot project

BuildX is the designer, contractor and developer of the project. The first Zima Homes project is a pilot comprising 137 units (studio, one-bed and two-bed apartments) to be built on a half-acre plot in Wangige, Nairobi, Kenya. The project aims at being innovative in the use of sustainable design principles as well as alternative building materials and technologies.

The design is based on modular layouts to allow an easy-to-build and replicable design, intelligent design principles to optimise material use and minimise waste, low-carbon design with defined targets for environmental performance, as well as the application of inclusive and community design approaches.

The Ask: Bulk offtake for 20 homes



Key aspects

The Zima pilot is EDGE Certified with energy savings in the range of 23% to 33%, water savings of 29% and embodied energy savings in the range of 49% to 51%. Going forward, the aim is to deliver net zero carbon Zima Homes.

Zima targets the population of young Kenyans within the bottom 40% of Nairobi's population who can afford a monthly housing budget of up to Ksh 27,500 (US\$256). Based on full occupancy, it is estimated around 350 people will live in the 137-unit development in Wangige.

BuildX has partnered with Reall, an innovator and investor in climate-smart affordable housing across Africa and Asia, to build 10,000 affordable Zima Homes in Nairobi and its environs by 2030.

Affordable housing investment summary

Talik Investment Limited, Crescent Garden Court, Abuja, Nigeria

Talik is active in Nigeria's affordable housing space. The organisation's ability to reach down market is unlocked by housing developments that use construction designs that are more affordable while creating a positive impact on the climate and preserving the natural environment.

Email Monsurat Muhammed: buks831@yahoo.com

www.talikinvestmentlimited.com

Garden Crescent Court Development: Seeking US\$ 5.5 million to develop 400 units in Nigeria

The development is situated in Bamishi District, along Kuje /Airport corridor adjacent to the Centenary Free Trade Zone, Abuja Nigeria. It is 15km from Nnamdi Azikiwe International Airport; 29km from the Central Business District Abuja; 33 km from the University of Abuja Teaching Hospital Gwagwalada Abuja. Garden Crescent Court has 150 units of 2 bedroom apartments; 150 units of 3 bedroom apartments; and 100 units of 3 bedroom town houses/terraces.

Key aspects

The development is an affordable urban housing project that creates a positive impact on the climate and preserves the natural environment. The buildings have both passive and active solar designs; solar powered submersible pumps; house types designed with adequate ventilations using double paned windows; energy efficient lighting system within each apartment; solar powered street lighting; and double paned windows to aid cross ventilations.

Benefits to subscribers

- Utility savings of, on average, US\$2,000 per annum. (which is the average cost of running diesel/petrol generators)
- Savings of US\$20,000 over a period of 10 years mortgage plan.
- Serene and standard living environment.
- Reduced noise pollution and carbon emissions from generators.

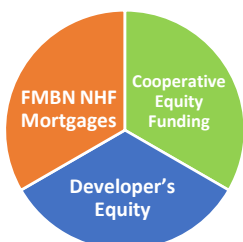


A 3D rendering of how an apartment block will look. Source: <https://www.auhf.co.za/auhf-conference-2022-a-green-urban-future-for-affordable-housing/>.

Projected selling cost/profit

HOUSE TYPE	COST OF CONSTRUCTION (USD)	COST OF RENEWABLE ENERGY (SOLAR) (USD)	TOTAL COST OF HOUSE (USD)	SELLING PRICE (USD)
2 Bedrooms Apartment	15,000	5,285	20,285	25,285
3 Bedrooms Apartment	18,000	7,285	26,285	31,285
3 Bedroom Terrace Duplex	23,000	9,500	33,500	40,500

Project funding avenues



Project funding cost

USD 10 million



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Affordable housing investment summary

Kubik, Addis Ababa, Ethiopia

Kubik has technology that helps countries reduce their carbon and plastic footprint – all the while making safe, durable, and affordable buildings. The low-carbon, ultra durable buildings remove plastic waste from the environment. Kubik builds residential, commercial and public facilities. The organisation has trademarked products that keep construction eco-friendly, modular, and affordable. Email Kidus Asfaw: kidus@buildkubik.com

<https://www.buildkubik.com/>

Kubik building technology: Seeking US\$1 million to scale up production in Ethiopia and explore additional markets

African cities are growing at a rapid pace. So too is their environmental footprint with 70 million tons of plastic found in landfills and streets every year. Kubik therefore seeks to bring environmental dignity to growth by making safe, affordable, and durable buildings.

Kubik is turning hard-to-recycle plastic waste into low-carbon, low-cost building materials. The company picks plastic waste off landfills and the streets, recycles it and makes building material from it. The material produced is brick made from 100% recycled plastic waste.

Key aspects

The bricks are interlocking and no other materials such as cement, steel or concrete to reinforce the structure are needed during construction. All one needs to build a house, are the interlocking bricks and a hammer. The interlocking bricks cost less than the traditional bricks, and yet they are 10 times stronger and very durable.

Kubik's building technology will eliminate 15,000 tons of plastic waste every year and reduce the cost of building materials by at least 40% compared to conventional materials. This impact and reach will get bigger as Kubik grows and expands into more African markets beyond Ethiopia. These traits have gained Kubik significant recognition and landed them the Start-up of the year 2021 Award.

Kubik's technology is reliant on the labour of waste pickers whom are often exploited by brokers. In many cases, waste pickers lose up to 85% of the market value of their pickings by selling to brokers at reduced prices. Kubik in turn seeks to restore the dignity of waste pickers and empower them with an equitable pay and safe working conditions. Not only is

Kubik's impact on the building side, but it is also on the human and social side of development.

40%
Cheaper

100%
Plastic
Waste

Easy
Assembly

Good
insulation

Non-toxic
and fire
retardant

10x
stronger
and 5x
less CO₂



The pictures above are a render of how structures built with Kubik material could look. At the top is a house and at the bottom is a school .

Source:<https://www.buildkubik.com/>



Affordable housing investment summary

Elyope Global, Zimbabwe

Elizabeth Mutasa's (the founder) intrinsic understanding and experience as a qualified Accessibility Assessor (and Occupational Therapist) of how the human body functions in space and place, gives her the edge in identifying problem areas faced by a public including the persons with disabilities. Elyope has worked with people ranging from 10 to 100 years of age, with different abilities, needs and varied physical, cognitive, perceptual, and neurological presentations. Elyope's housing project seeks to cater for all.

Email Elizabeth Mutasa: liz@elyopeservices.com.au

www.elyopeglobal.com

Elyope Living: Seeking US\$ 3 million investment to develop 100 units in Zimbabwe

The development is still in its conceptual stages. The 3 year road map is as follows:

- Consulting/Designing/Certifying Accessible Homes Research and Development – Designing and building permanent homes using hemp.
- Grow and manufacture hemp for construction materials locally, significantly cuts the costs and boosts employment.
- The cost estimate is 50% for construction, 15% for finishing and 35% for the shell materials.
- Secured land and currently designing and preparing the first home (display home). The intent is to roll out more homes over the next year (including permits, zoning, surveying and ongoing R & D).
- Increase affordable and accessible housing by 15% in 3 years. Payments via rent-to-buy, microfinancing, shared ownership.
- The projected timeframe for the first phase is June 2023 –June 2024.

Key aspects

The development will see the construction of 100 homes in the next 3 years.

Prefabricated homes

- Open and close circuit
- Flat packed pre-engineered

Accessible Design

- Accessible to persons with disabilities
- Housing at the centre of inclusive urban development
- Measurable and can be regulated

Eco-friendly

- Engineered hemp for Lumber and Panels



The pictures above show the hemp plant and a warehouse where the pre-assembly of units would take place. Source: Elyope presentation.
<https://www.auhf.co.za/auhf-conference-2022-a-green-urban-future-for-affordable-housing/>

Impact of development

UNSD Goal 11 has highlighted the need for accessible and inclusive homes as the pinnacle of creating inclusive cities and communities. The Elyope Living initiative seeks to achieve just that with homes that accommodate people of different ages, abilities and incomes - inclusive homes. Currently, Elyope is at 85% completion with the Design of their first accessible home in Zimbabwe and they already had two families with people with disabilities interested in the project and would like Elyope to help them build suitable homes. The investment opportunity comes along with a social impact and the opportunity to collaborate with government.



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Affordable housing investment summary GreenLiv Design Studio, Jinja, Uganda

Greenliv focuses on the sustainable field of construction, technology and business. The organisation is striving towards harnessing multiple innovation technologies and skills to provide low-cost housing alternatives. GrinLiv engages at every scale and step of the design and construction process, working with local communities upfront on land use issues and devising efficient delivery methods. Email Doreen Arinaitwe: doreen@greenliv-build.com

<http://greenliv-build.com/about.html>

Eco-Nyumba development: Seeking US\$400 000 to build a 30 unit pilot, and later, there will be an investment opportunity for 500 units per year

Eco-Nyumba is GreenLiv's affordable housing development that will be constructed in Jinja, Uganda. GreenLiv is looking to build 15-30 homes at first, each projected to cost US\$10,000-US\$13,000 (Ugx 37,000,000 - 48,100,000) then later at least 500 units per year. The primary funder of the Econyumba project is Empowa.

Eco-Nyumba is an initiative to finance and deliver mass-market affordable, sustainable housing with priority given to first-time women home buyers in Uganda. Another targeted market segment are low income regular Ugandans that earn less than \$400 per month. Many of them have unstable incomes and the \$400 is never expected every month. They do not qualify for mortgages and therefore cannot afford decent affordable houses.

The need for Eco-Nyumba

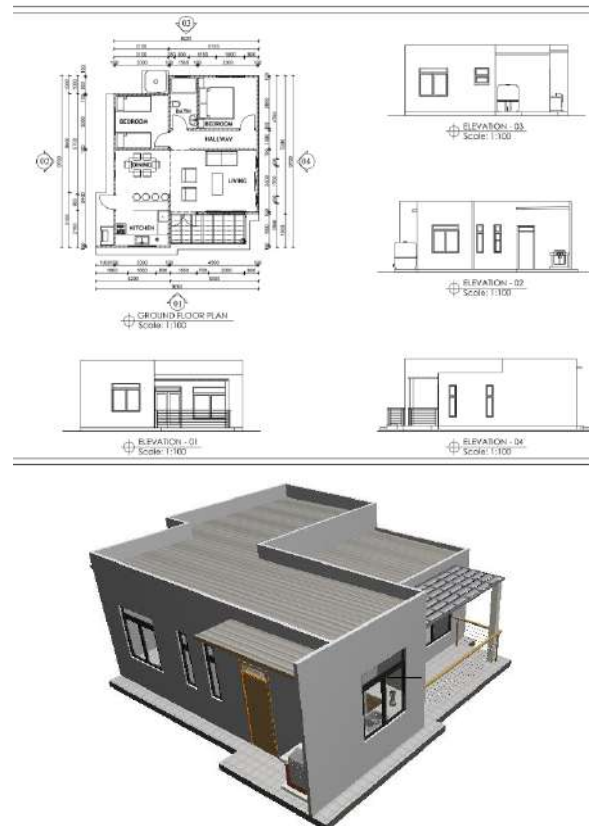
Uganda has a housing deficit of around 2.4 million units, which grows by an additional 200,000 - 300,000 units each year. There is also an estimated 900,000 units that are substandard and are in need of replacement or upgrade. Without support from the government, the affordable housing crisis falls onto charities and initiatives like Eco-Nyumba which bring together a coalition of non-profits, international agencies, communities, and developers to re-imagine the affordable housing supply chain.

Key aspects

While quite a lot of houses in Uganda are built with either concrete and/or other toxic materials that are expensive have a short life span, and cannot be reused, Eco-Nyumba is looking to use bio-based materials where possible and always use innovative techniques to reduce the development's carbon footprint. They are also exploring

innovations in construction such as, EPS building system, hempcrete, modular designs and interlocking blocks. Eco Nyumba yields a triple bottom line solution to affordable housing by minimizing the environmental impact and costs, and maximizing social equity and profit margins.

Another component of the Eco-Nyumba initiative that sets this project apart from others is the women's investment circle where Ugandan women will pool their money to buy land for housing development. These are middle and upper middle class women, often in the construction industry itself, with a personal as well as professional passion for development who want to put their money to work and help other women achieve their dream of owning a home.



The images above show a plan, elevation drawings and 3D sketch-up of a typical Eco-Nyumba house. Source: GreenLiv presentation.
<https://www.auhf.co.za/auhf-conference-2022-a-green-urban-future-for-affordable-housing/>



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Affordable housing investment summary

Atenu Developments, Keetmanshoop, Namibia

Atenu Developments is a Namibian building contractor engaged in the construction of residential, commercial and infrastructure developments. Atenu also seeks to empower the communities in which they work through life skill education and training; economic development by supporting local suppliers and business owners; and youth and women upliftment by employing and sub-contracting some work to them. Email Samuel Akinin: samuel@fundroof.com

<http://atenudevelopments.com/>

QuiverTree: Seeking US\$5 million to develop 118 units in Namibia

The QuiverTree Estates project is located in the neighbourhood of Westdene, a fast growing middle income neighbourhood in Keetmanshoop, Namibia. The development offers a selection of multi family buildings, consisting of 2 to 3 bedroom units, accommodating to different clients' needs. The roads and buildings accommodate to the steep terrain, optimising the views to the city, as well as lowering the price of road construction.

Key aspects

The development will constitute 35 buildings, with a total of 118 apartments meaning QuiverTree will be home to a community of at least 118 families. There will be 1 central multipurpose green area and 4 recycling centres. Essentially, there will be four building typologies in the development; **Quiver** (14 buildings): 2 floors, 4 apartments (2 bedrooms, 1 kitchen, 1 bathroom); **Acacia** (10 buildings): 2 floors, 2 apartments (2 bedrooms, 1 kitchen, 1 bathroom); **Baobab** (10 buildings): 2 floors, 4 apartments (3 bedrooms, 1 kitchen, 2 bathrooms); **Mopane**: 2 floors, 2 apartments (3 bedrooms, 1 kitchen, 2 bathrooms).

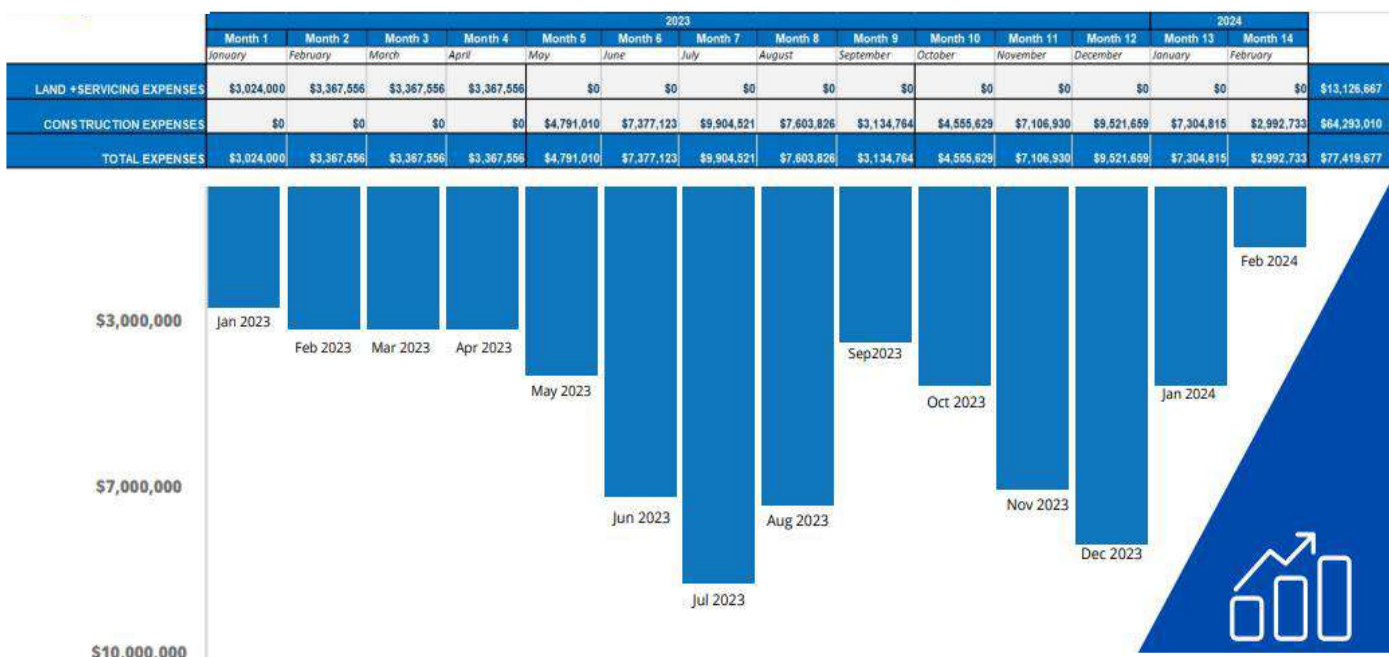
Green components

The QuiverTree development will have multiple green elements that will make the development more sustainable.

1. Centralised recycling system with advanced HDPE/IDPE plastic recycling.
2. Water saving fittings and perimetral rainwater harvesting system for each unit.
3. LED light bulbs and solar sourced public street lighting.
4. Single panel roof & ceilings to increase the height of the ceiling of the second floor, maximise ventilation, and minimise materials wastage.
5. A brick making machine will be allocated to the construction site, to reduce the carbon foot print of brick manufacturing and transportation.

FundRoof

In partnership with FundRoof, home loan applications are processed and fast-tracked for QuiverTree homebuyers. FundRoof is powering the mortgage market with the creation of a dynamic and easier digital application process.



<https://www.auhf.co.za/auhf-conference-2022-a-green-urban-future-for-affordable-housing/>



Affordable housing investment summary

Casa Real, Beira, Mozambique

Casa Real's main offering is quality homes at prices that suit every income segment. The hallmark of Casa Real's offering are their evolving homes, where one can buy a fully serviced and legally registered starter home that can grow and adapt over time as one's needs and income change. Through partnerships with financial institutions, Casa Real also offers financial packages to fit the customer's financial capability.

Email Richard Bahumwire: richard.bahumwire@casarea.co.mz

<https://casareal.co.mz/>

Maraza affordable housing development: Various investment opportunities ranging from US\$100 000 to US\$750 million

The innovation is based on a partnership between two pioneering organisations. Casa Real innovating on the supply side and Empowa on the offtake side of the housing value chain. There are other stakeholders involved in the greater scheme of the project and they are mentioned further down the page. Casa Real delivers incremental, affordable and climate-resilient housing projects at a community level, enabling well planned communities to develop. Families from different income-levels can live together and immediately move into a starter home that can be renovated and extended at the client's own pace. Empowa is a pioneer in providing affordable and longterm home loans for the financially excluded. By using new technologies and new thinking, Empowa accelerates investment into climate-proofing communities. Empowa prioritises investing into people that are at the frontline of requiring climate adaptation.

Key aspects

The development will see a total of 25 000 units constructed over multiple phases in Beira, Mozambique. Construction is scheduled to start mid 2023 and, given the enormity of the development, the whole project is expected to take up to 15 years with a completion date of 2038.

This is a large scale project with several stakeholders involved including Casa Real who will develop the initial phases of the project; SDUBeira who will work on the land development of the project; the Municipality of Beira who own SDUBeira and will provide local government support to the project; Empowa will provide home loans to end users purchasing the homes at Maraza; and the Dutch government through overall support on various issues.

A vital aspect of this project, considering Beira's recent challenges with high-magnitude tropical cyclones, is climate

resilience. While many houses in Beira are built on low lying areas and with poor quality materials (often self-help), the Maraza development especially seeks to use quality local and imported materials that are up to code, building methods that will ensure strong and durable structures, and the development will be on carefully identified land where the structures would be less susceptible to floods. Natural ventilation is another important component of the units in the face of Beira's rising temperatures and humidity levels.

Overall, the project is expected to cost about US\$500 million to complete. The affordable housing segment is targeting households with monthly incomes between US\$250 and US\$700. There is also a lease to buy scheme which caters for a market that otherwise would not be able to afford the homes with cash or with a conventional mortgage facility.

Gradual approach of development:

Total area:	450 hectares	~ 25,000 units
Pilot area:	50 hectares	~ 2,100 units
Mini-pilot area:	3 hectares	~ 300-500 units
Showcase area:		initial 5-10 plots/ first apt. block

Initial focus for housing development



The map above is a site plan of the project. The outline delineates the entire site while the yellow outline marks the pilot site. Source: Casa Real presentation. <https://www.auhf.co.za/auhf-conference-2022-a-green-urban-future-for-affordable-housing/>