



Unlocking investment opportunities in Mass Timber in East Africa

AN OPPORTUNITY NOTE

What Is Mass Timber?

Also referred to as structural timber, mass or massive timber is a category of engineered wood products, made from wood panels that are nailed or glued together to provide exceptional stability, elasticity, and strength. These compressed wood layers are significantly lighter and more eco-friendly than concrete and steel materials and are formed using adhesives, lamination, or fasteners. The term 'mass timber' comprises various products which differ in size and functions, with glue-laminated and cross-laminated being the most popular.

It is essential to mention the climate and ecological benefits mass timber can bring. Current construction techniques are a significant contributor to the global climate crisis and urgently need to be transformed. By substituting the carbon-intensive materials commonly used in construction with forest economy biomaterials such as wood, which sequester carbon, we can create buildings with reduced carbon emissions. The carbon dioxide absorbed from the atmosphere during tree growth is stored in the timber and locked up for decades by being made into long-life mass timber products incorporated in buildings.

How Mass Timber Can Solve the Growing Housing Demand in East Africa

The growing demand for housing can be linked to factors like rapid population growth and urbanization. This is where the use of mass timber plays a pivotal role. Using timber to build drastically reduces labor costs. Additionally, the entire construction process can be concluded much more quickly. This brings a geometric increase in the number of homes that can be built, and the number of new homeowners minted. It is also important to note that with mass timber, there is minimal to zero material wastage because the wooden elements are engineered explicitly according to specifications making it even more cost-effective. Overall, timber construction can be cheaper than using conventional materials such as steel and concrete. A recent study by Arup¹ has shown that timber construction in East Africa becomes more cost-effective as the environment becomes more conducive to the industries grown. Market investments in elements of forestry, timber-based manufacturing, policy, and timber safeguards and sustainability mechanisms would improve the competitiveness of timber construction.²

Understanding The Mass Timber Construction Value Chain

Simply put, the mass timber construction value chain involves the activities and actors required to bring a product, engineered wood in this case, from conception through the different production phases to delivery to final consumers. This can be broken down into three steps. At the Forestry stage, the emphasis is on the planting, sustainable management, and felling of trees. Wood then moves to the Manufacturing stage, which sees the timber being taken to the factory

¹ Arup established three scenarios that qualitatively describe the current and potential future enabling environments for the use of timber in construction in Kenya, Tanzania, and Uganda. These scenarios are i) Business as usual; ii) Timber Transition (conservative/realistic scenario); and iii) Timber Renaissance (optimistic scenario)

² Arup and Fractal Forest, East Africa Sustainable Timber Construction Supply/Demand Study, 2022

and processed into engineered wood products for commercial use. Then, the third stage is Construction, where these timber products are used in the built environment.

Building With Timber

Building with timber isn't just a futuristic idea - it has already begun to take root in East Africa. Construction companies such as [BuildX](#) and [Easy Housing](#) have demonstrated the possibility of timber construction projects. For example, Easy Housing and its partners, have built two carbon-negative sustainable and affordable houses, in Beira, Mozambique. Architecture, engineering and construction firm BuildX Studio in Nairobi have constructed a mass timber prototype exhibition and are currently developing a multi-story mass timber building.

This goes to show the viability of timber houses in East Africa. The good work being done by BuildX and Easy Housing validates the concept; what is needed now is the proper investment to stir the market toward accelerated growth and commercial profitability.

Benefits of Building with Timber for Investors

As the push for timber buildings begins to gather pace, and construction companies start making use of timber, innovative investors have a lot to gain. Investors can take advantage of this emerging industry in East Africa to address the growing construction demand and build profit pipelines. Below are some highlighted benefits investors stand to gain:

- **Speed of Construction:** It takes a shorter time to construct a building with timber materials than brick and blocks. It can also be erected despite the weather, unlike concrete work that might have to be paused in lower temperatures.
- **Cost of construction:** Timber construction is typically cheaper than other forms of construction because fewer laborers are needed on-site than in concrete or steel constructions. There is a decreased deadload on the foundation due to the light weight of the materials, which also reduces the cost of production. It is also possible to disassemble and relocate the timber frames at the end-of-life of the building or auction them to get back some of the capital invested.
- **Biophilic design:** Wood is more aesthetically pleasing than either concrete or steel. The beautiful feelings the wood evokes, from the colors to its textures and including the natural scent, rich acoustics, and other interior design elements, not just make it convenient for the occupants of the building but make it aesthetically pleasing to look at. This gives construction companies a strong marketing angle to sell to aspiring homeowners.

How Investors Can Play a Part

Based on current market growth, it is projected that green buildings will have a market share of 3% of all new residential and commercial developments in Kenya by 2040, with traditional construction practices still dominating the landscape. However, if changes are made to bring about a supportive enabling environment and growth in the green building market, future projections for this green building market share in Kenya could soar to 70% by 2040. Under such a scenario, by 2040, it is projected that the demand for mass timber and hybrid mass timber buildings in Kenya could account for up to 14% and 28% of all new residential and commercial developments, respectively.³

This is a vast market waiting to be tapped. The potential market share for mass timber could rise to USD 85-970M by 2040.⁴ Can investors take up this challenge of building for the future? By doing so, they can create profitable businesses and making an impact by helping solve the need for affordable housing, reducing carbon emissions, and plotting a new pathway for construction.

³ See note 2

⁴ See note 2

From the point of felling the trees to their delivery as constructed buildings, there are many opportunities for investors:

- **Forest Management:** As the demand for timber houses increases, there would be a need for a continuous supply of timber. The *Timber renaissance* is the optimistic scenario within the Arup’s supply model and assumes systemic change takes place within the enabling environment and supply chain. As a result, plantations within the region are projected to increase to approximately 900,000 ha by 2040. This is a 40% increase from the projected 668,000 ha of plantation that would be available in that period should business continue as usual.⁵ The opportunity herein lies in proper forest management. Investors can play in this part of the value chain by managing forests and providing the much-needed timber. From planting trees to providing security so as to reduce or stop illegal logging, investors can play a profitable role in the value chain.
- **Logistics & Supply Chain:** The timber will need to be transported, either from the forests to the factories or from the factories to the construction sites across East Africa. This offers a huge opportunity for investors to capitalize. The timber transport can be by road, rail, ship or a waterway. Depending on the region and distance, intermodal transport may be used. This is a significant potential business opportunity.
- **Construction:** Construction companies have a huge demand to fill for housing. There is a new demographic of younger people who are more open to change, are more climate knowledgeable, and could increase the adoption of timber homes. This demographic represents a new set of homeowners and a very attractive target market. Investors who grab this opportunity put themselves in a vantage position to reap profits for years. By 2040, it has been projected that 170-500 hybrid buildings and fully mass timber buildings could be constructed annually in Kenya to meet the housing demand, should a supportive enabling environment be fostered.⁶
- **Mass Timber Manufacturing:** Herein lies opportunities for manufacturing commercial timber in large quantities to meet the demand. With an increase in the demand for timber housing, there would be increased demand for mass timber products. Arup has projected that the demand volume of mass timber could increase to 470,000 m³/year in Kenya. Hence, about 17 to 25 large factories would be needed to meet the required volume of mass timber locally.⁷
- **Media & Marketing:** There is a need to push for mass adoption of timber as a major building material, not just being used for aesthetic finishes. This is where the need for investors who would play the role of evangelists come in. Construction firms that successfully build excellent marketing campaigns around timber houses become the automatic thought leaders in the market, which would translates into sales and business growth opportunities.

Conclusion

The mass timber industry could quickly become a significant market with many investment opportunities, help solve the growing housing demand and provide a more affordable alternative to concrete houses for aspiring homeowners. But this can only be possible with suitable investment and funding.

The technical capacity needed to carry out timber housing projects in East Africa is already underway. Investors need to act now to seize this sizeable investment opportunity.

⁵ See note 2

⁶ See note 2

⁷ See note 2