

## Building Smart for a Cooler Bangladesh

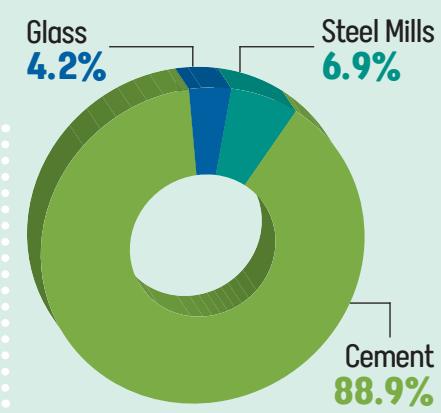
## CARBON DIOXIDE EMISSIONS

by industry



## BRICK KILNS

» 17% of the country's total CO<sub>2</sub> emissions  
» 7,086 brick kilns are operating, of which 4,505 of them have no clearance



SOURCE: DEPARTMENT OF ENVIRONMENT (2024), MINISTRY OF ENVIRONMENT, FOREST AND CLIMATE CHANGE REPORT (2023)

## FROM JI

Modern techniques such as geopolymers, rapid-hardening cement, and bamboo composites can cut construction emissions by 40 to 50 percent compared to conventional methods.

In flood-prone areas, the innovation is even more striking. A recent project named "Amphibious house" was built with sun-dried mud blocks that float when water rises, avoiding kiln-fired bricks altogether. These ideas show that sustainable building can be practical, affordable, and climate smart.

## LOCAL MATERIALS, LOCAL GAINS

One quick win is replacing high-carbon materials with greener alternatives. Engineer S.M. Khorshed Alam, president of the Bangladesh Association of Construction Industry, urges moving away from fired bricks toward options such as compressed stabilized earth blocks, interlocking CSEB, hollow concrete blocks, thermal blocks, aerated concrete and ferro cement panels. A recent project like "Swaner Bari" - the amphibious house for floods - uses sun-dried mud blocks instead of kiln-fired bricks, cutting embodied emissions. Innovations like geopolymers (non-Portland) cement, rapid-hardening binders and bamboo composites can lower construction and housing emissions by roughly forty to fifty percent. Local sourcing also matters a lot. Because Bangladesh imports

crushed stone aggregate, locally produced compacted earth blocks and ferro-cement panels reduce transport emissions and costs. Reusing waste materials in mixes further shrinks the carbon footprint. In short, switching materials through proven alternatives, recycled inputs and local manufacture is one of the fastest and most scalable ways to cut construction emissions.

## WASTE REDUCTION AND RECYCLING

Another lever is waste management. Construction and demolition generate huge waste streams worldwide, and Bangladesh is no exception. Allowing demolition debris, scrap steel and leftover concrete to be recycled in new projects can cut demand for new cement and steel, saving energy and emissions. Experts call for "life-cycle analysis" in project planning: building longer-lasting structures may cost more upfront but pays off by avoiding future rebuilds. Professor A.F.M. Saiful Amin of the Department of Civil Engineering, BUET, points out that a growing recycling industry could fundamentally change construction: "Gradually, many recycling industries will develop to recycle polymers, steel, bricks and concrete and to help grow recycling-based startups. These businesses will transform the construction sector by reducing its carbon footprint." Bangladesh has only just begun to incorporate demolition-reuse policies, but researchers and

industry leaders agree this could be a big opportunity to trim the sector's emissions without sacrificing growth.

## POLICIES AND PARTNERSHIPS FOR CHANGE

Beyond individual projects, government action is key. Bangladesh has started introducing rules to favor green construction. For example, a recent amendment to the Brick Kiln Act now bans the use of toxic topsoil and firewood in brick-making, effectively phasing out the dirtiest kilns. The forthcoming building code and incentives from regulators will further shift the market. Development banks and donors are also engaged with several international grants that support workshops for masons on alternative bricks and link producers with finance.

The construction industry in Bangladesh holds great potential to shrink the nation's carbon footprint. From using low-carbon materials and better insulation to recycling waste and enforcing green standards, every step can make a difference. Sustainable construction is not only good for the planet but essential for people: only by becoming more environmentally conscious in all aspects of building can future generations continue to enjoy life as we were able to once. With bold measures and cooperation across government, builders and financiers Bangladesh can indeed build its future brick by brick, and leave a much smaller carbon footprint.

## The Fine Glass Maker

**AkijBashir Glass Industries Limited** is one of the leading Bangladeshi manufacturers dedicated to producing one of the finest architectural glasses for both domestic and global markets. Positioned as 'The Fine Glass Maker', the company delivers products of exceptional clarity and premium quality that meet stringent European standards.

The Daily Star (TDS): What inspired AkijBashir Glass to enter Bangladesh's glass industry?

**Mohammad Khourshed Alam (MKA):** Our entry into glass manufacturing originates from a vision to make Bangladesh self-reliant in premium building materials. For years, the country depended on imports for quality architectural glass. As AkijBashir Group carried forward the legacy of building materials industry, AkijBashir Glass was established to deliver world-class float



**MOHAMMAD KHOURSHED ALAM**  
COO, AkijBashir Group

**MKA:** Introducing one of the clearest glasses in Bangladesh, with an ultra-low iron content of only 700 PPM for unmatched transparency, previously available only through import. This bubble-free, perfectly flat glass offers over 91% light transmission, enhancing aesthetics and energy efficiency. Ideal for modern architectural projects, it meets EN 572-2:2012 standards.

**TDS:** Are there any upcoming innovations or new product categories that will redefine how glass is used in construction and modern architecture?

**MKA:** We are continuously investing in research and development to introduce Low Emissivity glass tailored to the needs of Bangladeshi consumers

At AkijBashir Glass, sustainability is a core principle. We generate 71% of our energy from renewable sources like solar panels and steam turbines. We also have fully equipped WTP and ETP systems to ensure that water discharge is safe and does not harm the fertile lands nearby.

and the local climate. This next generation glass will significantly enhance energy performance, promote sustainable living.

**TDS:** How is AkijBashir Glass contributing to future-ready construction in Bangladesh?

**MKA:** We view glass as more than a construction material; it's a catalyst for innovation, energy efficiency, and sustainable design. AkijBashir Glass empowers architects and developers to create smarter, safer, and more climate-friendly structures. Our range from clear glass to reflective, Copper Free Silver Mirror and Tempered variants deliver exceptional clarity, durability, and energy performance while meeting European standards.

**TDS:** Your 700 PPM Clear Glass has been widely discussed. What makes it unique?

Key challenges in Bangladesh's glass industry include high energy costs, raw material shortages, excessive duties and taxes, limited technical expertise, and low consumer awareness about quality glass. Recently, the Department of Environment banned the extraction of all types of sand, including silica sand, the primary raw material for glass. The industry must rely on importing sand if we stop getting the only vital raw materials for glass making, which will significantly cause foreign currency outflow. Ultimately, the production cost will rise by many folds.

## NASIR FLOAT GLASS

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