

# Steel market providing a solid foundation for national growth



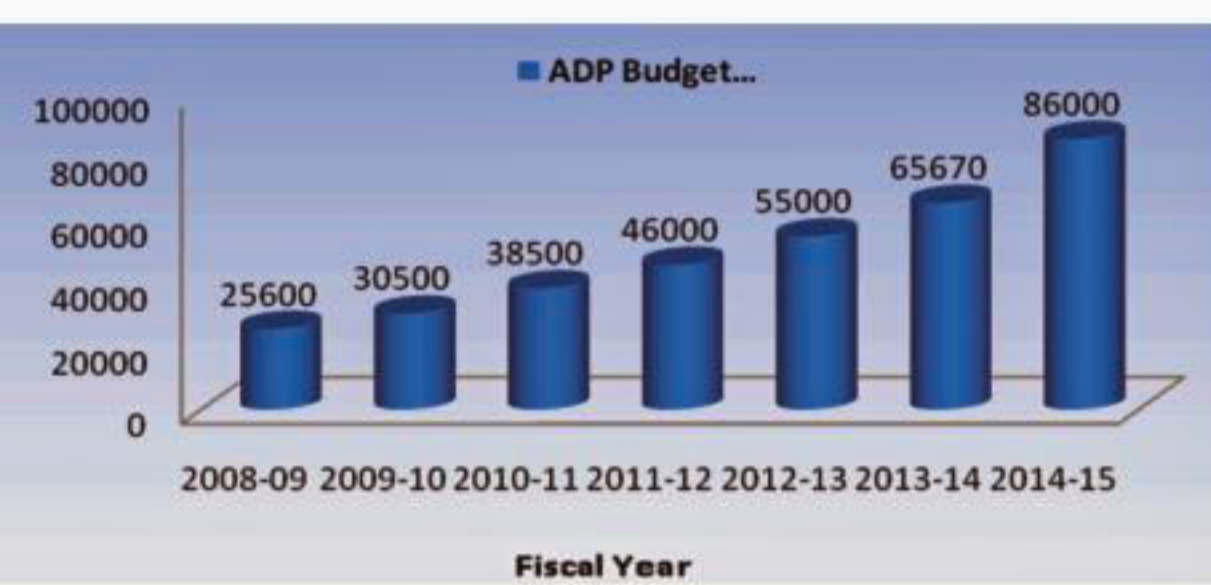
Colonel Md. Ashfakul Islam (Rtd.)

**B**ANGLADESH is on a steady road to progress. Now, it may not appear so at a first glance. For instance, Per Capita income of Bangladesh for the fiscal year of 2013-14 was \$1190. If we compare this with the other developing and developed countries, it is much lower. However, closer inspection reveals that Bangladesh is actually improving economically. When we evaluate our gradual economic improvement of the last 10 years, Per Capita income has increased significantly. The growth rate has been a healthy 14% a year. Bangladesh has also been included among the Next Eleven or N-11 of Goldman Sachs and D-8 economies.

Let's take a look at the annual development program (ADP) budget of Bangladesh given by the Planning Ministry. For the fiscal year 2014-15, the government has allocated Tk.86,000 crore BDT for the Annual Development Program (ADP). This is the largest allocation in Bangladesh's history.

Figure -1 shows the budget size for the fiscal year of 2014-15 compared to previous years:

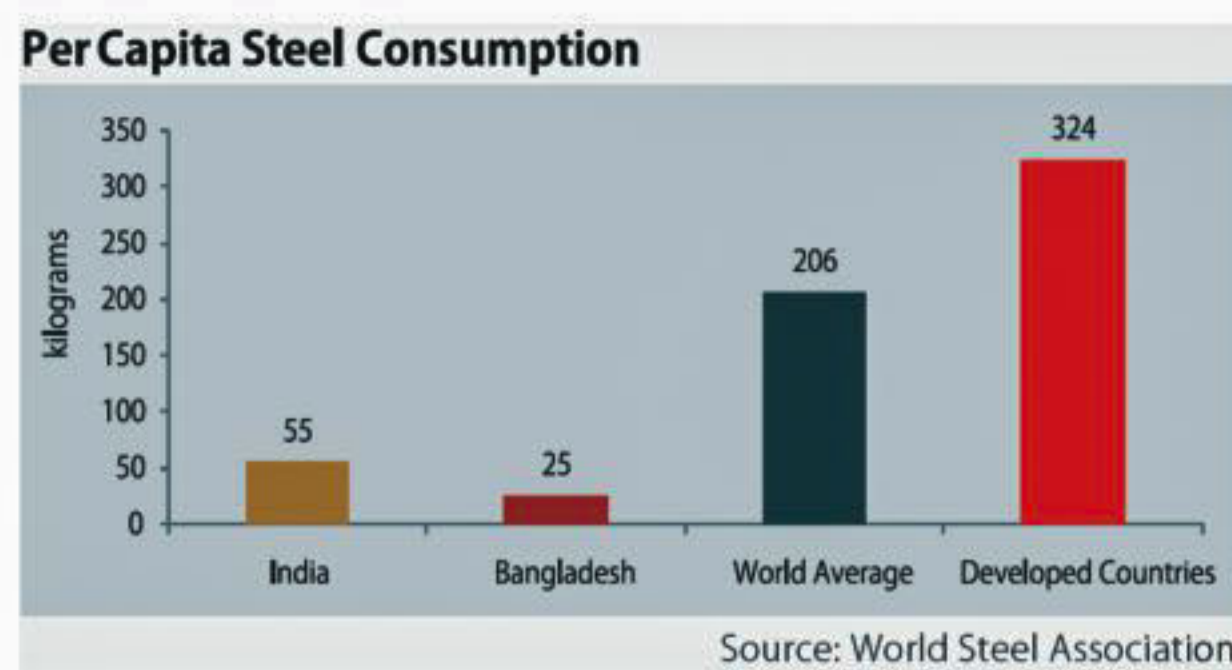
Figure -1  
If we make the necessary calculations, we can see that the



average growth rate of the budget is above 22.46%. This is lower than the inflation rate. This gives the clear indication that development work in the country is increasing.

The ADP is basically involved with infrastructural development where more than 90% of the budget is being spent for civil construction. Huge amounts of construction materials are needed for those activities. Among the basic construction materials i.e. cement, sand, stone, bricks and steel, of these the requirement and cost of steel is the highest. Thus, the volume of steel consumed has been the barometer for measuring development of infrastructure and economic progress. Whether it is construction or industrial goods, steel is the basic raw material.

The movement towards a progressive national economy thus, partially but strongly depends on how we make



steel and produce deformed bar and other by-products.

## A look at the national steel industry

The art of steel making and shaping has long been a part of Bangladesh's proud history. The industry has emerged as a major contributor to the national economy meeting total local requirements; manufacturers are saving billions of dollars in foreign exchange. Not only that, the industry has been a great provider of employments. The sector has created direct jobs for about 10 lakh people. According to local steel manufacturers, Bangladesh consumes 4 million tons of steel per year and per capita steel consumption is 25 kilograms, which is less than half of per capita steel consumption in India (shown in fig-2).

Figure - 2  
More than 400 steel mills of different categories and sizes currently operate in the country. Together, their combined production capacity stands at 8 million tons. The industry as a whole has a net worth of about BDT 300 billion. But half of today's steel grades were not available ten years ago. For example, the most commonly used steel - rods or bars, used as reinforcement material with cement concrete. It used to be plain bars even in the sixties. They were followed by ribbed bars, and the ribbed bars were succeeded by the cold twisted deformed bars and now it is 'Thermo Mechanically Treated (TMT)' bars. Each development has added to the strength of construction. However, concerning the quality assurance aspect, all materials must conform to the ACI & BSTI standard. People of Bangladesh should be more conscious regarding quality assurance. Engineers, contractors, workers and general people are apathetic in this particular issue. To the utter surprise, people of Bangladesh even do not even go for testing of materials; rather they just listen from someone and go for using the untested materials.

## Bracing Against Disasters

Bangladesh has not yet faced catastrophes like Japan, New Zealand, Haiti, Indonesia or Philippines have, where they suffered severe earthquakes and tsunamis causing not only losses of billions of dollars but also millions of lives. They have learnt their lesson from the consecutive disasters. It is interesting to know that, owing to the latest Japanese construction standard, material quality assurance and their extensive experience, not a single building was damaged due to the severe earthquake in Japan, 2011 (Richter scale reading was 9.0). According to the

author who was in the Tokyo University, Japan at that time, only a few chunk of concrete had fallen down from civil engineering building of Tokyo University.

Now, Bangladesh is also capable of producing world standard cement and reinforcing steel (deformed bar). If people have in-depth knowledge and cautiousness regarding the use of quality product, then quality products would be available in the market and at the same time industry would also be forced to continue to do improvement of their product. Concerning steel, it can be said that, steel, which are produced from ingot or scrap must not be used. For major frame-structures, steel, produced from virgin billet, must be used and all the quality check tests are required to be carried out before use. One must not be misguided by the jargon advertisement. Consulting qualified experienced engineers can save the contractors and other entrepreneurs in many fields.

Riding on government programs centering vision for 2021, the local manufacturers believe that steel industry should continue to grow above 12% in the next few years. The ongoing major projects like 'Padma Bridge', 'Dhaka-Chittagong Access Control Highway' and the upcoming major projects like 'Dhaka Elevated Expressway' and the 'Deep Sea Port' would be requiring huge quantity of quality construction materials. Successful implementation of these projects holds a very good potential for top line growth, as steel and steel rods in particular feature prominently as raw materials of these projects.

Thus we can hope that the demand of MS rod will continue to grow at an increasing rate. We hope steel industry in Bangladesh will grow with quality products for the next generation.

The writer is Head of Corporate - Dhaka -KSRM Steel Plant Ltd.  
E-mail: ashfak@ksrm.com.bd



# All about bricks

ANWARUL HAQUE

**A**CCORDING to history, bricks were first fired around 3500 BC, in Mesopotamia, present-day Iraq, one of the high-risk seismic areas of the world. The ziggurat temples at Eridu, possibly the world's first city, have withstood not only earthquakes but also wars and invasions. From Roman aqueducts and public buildings to the Great Wall of China, from the domes of Islamic architecture to the early railway arch bridges, from the first 19th century American tall buildings to the 20th century nuclear power plants, bricks have been used as structural material in all applications of building and civil engineering. The most commonplace use of bricks worldwide throughout time is in residential dwellings. The shape and size of bricks can vary considerably, and similarly the mortars used depend on local material availability, but the basic form of construction for houses has minor geographical variations and has changed relatively little over time. The worst death toll from an earthquake in the past century occurred in 1976 in China (Tang Shan Province), where it is estimated that 240,000 people were killed. Most of the deaths were due to the collapse of brick masonry buildings. In more recent times, seismic codes place substantial constraints on unreinforced brick masonry construction in earthquake-prone areas, limiting the allowed number of stories.

Construction of load-bearing unreinforced brick masonry structures has dwindled in these countries, and alternative forms of construction such as confined masonry or reinforced masonry, considered less vulnerable, have been developed instead.

Brick is one of the essential components in most construction works in Bangladesh. We can see brickfields almost everywhere burning clay to make bricks of different shapes and sizes. It may look like a simple technology but in reality it is not, especially if we want to have high quality bricks for using in highrise buildings, bridges, roads, commercial buildings, residential houses etc. As there is no other alternate source of material, such as stone, we in Bangladesh are heavily dependent on bricks for undertaking all kinds of construction works. It is surprising indeed that brick manufacturing is not yet recognized by the government as an industry.

According to researchers demand for bricks is rising at about 5.28% per annum. There are about 6500 brickfields in the country producing about 17 billion bricks per annum. It is essential to increase production of bricks to meet the rising demand but there is a negative side to it as well. Despite ban, many brickfields are using wood as fuel to burn in their kilns which pollutes environment to a great extent. It has been reported that brickfields are being set up near reserve forests from where owners cut trees to take to their kilns. This result is deforestation of the country. The smoke that is being emitted by the kilns causes other trees to die gradually and it also affects the health of people and animals nearby.

As brick is one of the most essential components of construction in this country, therefore, the government should immediately come up with effective solutions so that the industry gets due recognition and also the brickfield owners comply with the laws regarding pollution.

# Cementing the development revolution



Mohammed Alamgir Kabir

**T**HE amount of cement consumed by a country is an important indicator for identifying its economic progress. Bangladesh, by that matter is no exception. The cement industry of Bangladesh has witnessed significant growth in the past two decades. As of today, the industry comprises of 95% Grinding Projects and 5% Integrated Projects. The demand of Cement (Approximately 20 million MT) is still lower than the industry capacity of 33.2 million MT. Although, we are yet to utilize the full capacity of the industry, it is a sign that Bangladesh is ready to receive the wave of much anticipated development in terms of public infrastructure, communication and housing facilities. According to The Global Cement Directory (2014), the Chinese cement industry consists of 802 integrated cement plants with a combined production capacity of 1.34Bnt/yr. It is a burning example of what is in store for cement brands operating in countries with a genuine developmental focus. Bangladesh fits the descriptions just right. So, in a way, the cement industry of Bangladesh is headed for a revolution.

Abundance of minerals does not grantee a country's development. Countries like Indonesia, Russia and many African countries are rich in resources but have not reached the peak of development as expected. In contrast, Japan, Korea and Singapore are some countries possessing relatively less mineral resources but have achieved a higher rate of economic development by focusing on technological innovation by utilizing human resources. Likewise, human resources are a key resource for Bangladesh. The Country's cement sector employs over one lac people, both directly and indirectly, who possess the capability of presenting Bangladeshi cement in the international market in a competitive manner.

China, Saudi Arabia, Singapore and few other developed countries are hovering around per capita cement consumption between 1000

Kg to 1700 kg per year, with certain outliers like Qatar-3023 Kg (2012). The relationship between GDP and cement consumption, plotted by multiple sources and years, shows a general inclination towards cement consumption of 600kg per capita or less in nations with per capita GDPs in excess of US\$25,000. In recent studies, the per capita cement consumption of Bangladesh was found to be 107Kg, which is behind India (210 Kg), Pakistan (265Kg), Sri Lanka (310 Kg) and Korea (570 Kg). High density of people in cities, unplanned urbanization and rapid economic development are likely to expand cities vertically rather than horizontally to achieve maximum utilization of available space and to ensure future food security by not urbanizing fertile land. To achieve this there is no alternative to cement. A tunnel from Bir Shrestha Shaheed Jahangir Gate to Agargaon Rokeya Sarani is a promising future project, indicating the city's vertical expansion, in this case vertically down. The proposed Dhaka- Ashulia Elevated Expressway is another example of vertical expansion apart from the many flyovers, which have already been completed.

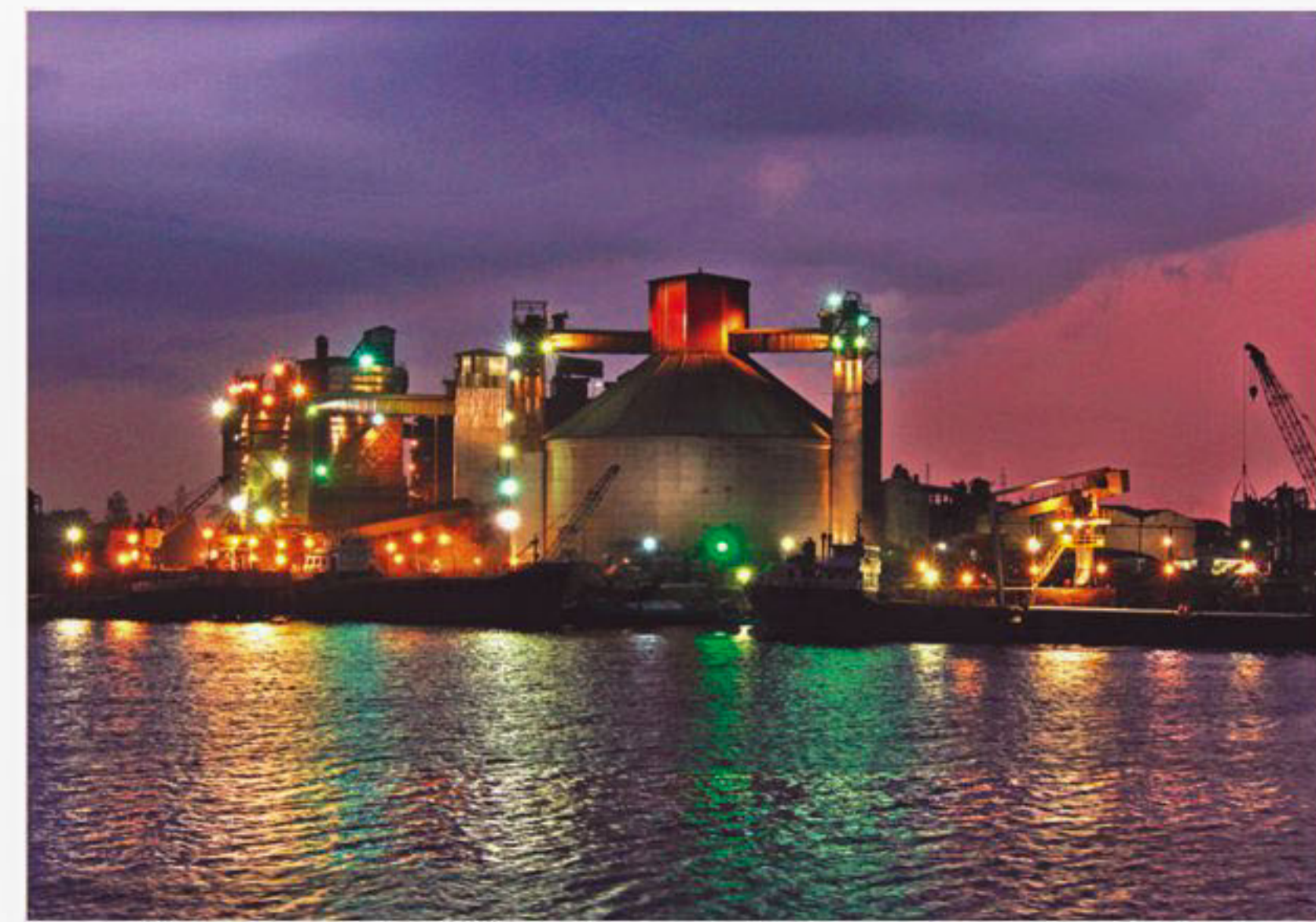
The tropical climate of Bangladesh is unfriendly for traditional asphalt roads. Asphalt roads here get damaged by corrosion from water and flood every year and cause communication difficulty, fatal road accidents and unprecedented repair cost. With around 40% increase in construction cost, it is possible to use RCC to construct roads and increase its durability by a minimum of 20 years

which, at the same time, reduces the real cost of construction by 19% over the same span of time. Climate of Thailand is similar to Bangladesh and nearly 80% of roads there are built with RCC and RCC is increasingly used in India, Malaysia and some African countries. RCC can be used to construct blocks or walls to protect riverbanks; currently weaker and less durable CC blocks are used for this purpose in Bangladesh.

Before 1995, Bangladesh imported cement and started exporting it in 2003. The brand that pioneered export was none other than Bangladesh's own, Crown Cement. Till date, Crown Cement competes internationally to maintain 45% of the cement export market of Bangladesh and significantly contribute to country's economy by earning foreign currency. By taking a Bangladeshi product beyond borders, Crown Cement is the only brand to be awarded Export Gold Trophy twice in a row (2008-2009 & 2009-2010) from the Honorable Prime Minister of Bangladesh.

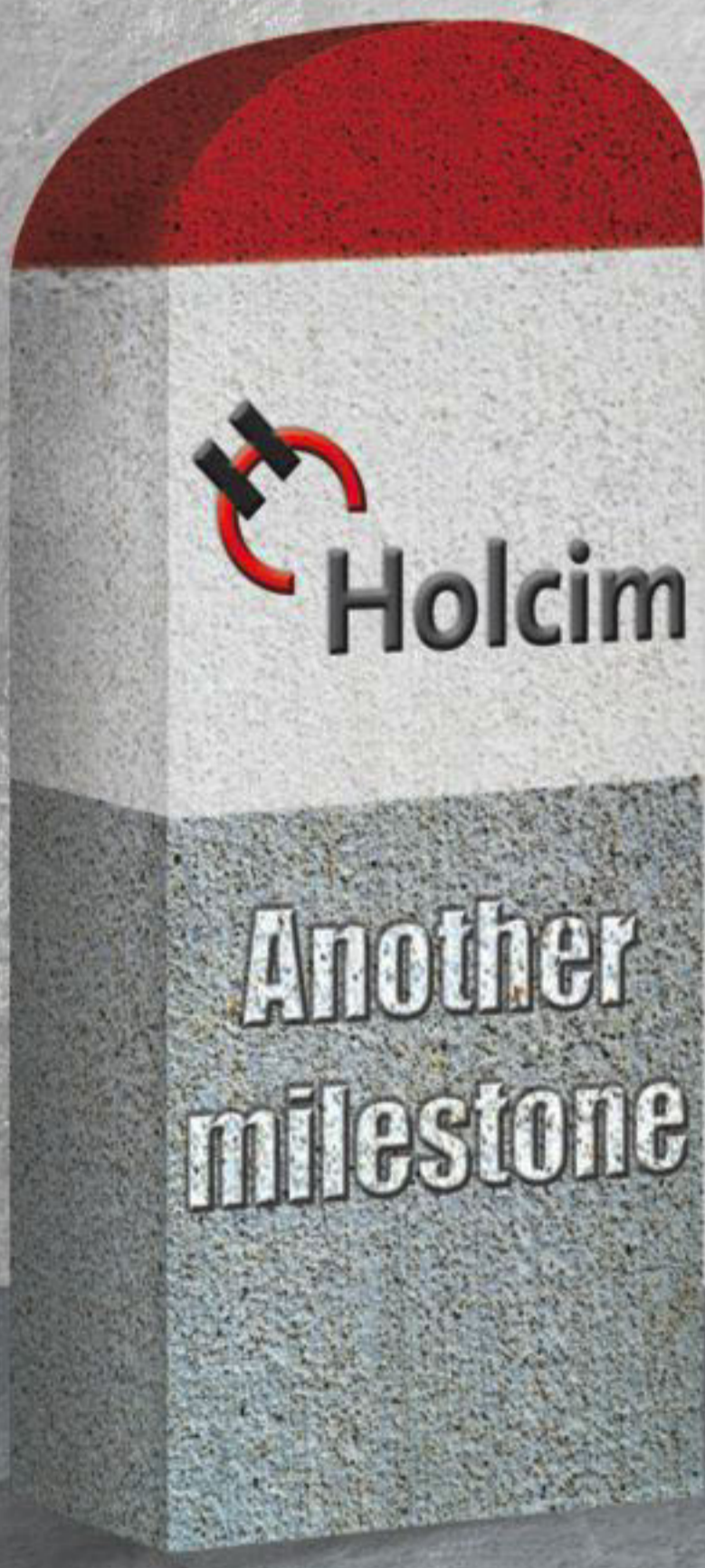
As mentioned earlier, cement consumption symbolizes development and economic growth. Just like Crown Cement, brands like Seven Circle, Premier Cement and other growing cement brands in Bangladesh are likely to compete in the aggressive international market by ensuring top quality and standards. Only then can we truly attain development of the country and its people.

The writer is the Vice President, Bangladesh Cement Manufacturer's Association (BCMA).



The factory of MI Cement at West Mukterpur in Munshiganj district.

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Tejgaon, Dhaka-1208, Bangladesh  
Phone: +88 02 988 1002-3  
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