

Never again

Agenda for better industrial safety in RMG factories in Bangladesh

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As the clock ticks away, the survival prospects of hundreds of souls missing at Rana Plaza are getting dimmer. Let us say never again. Let us treat this as a human tragedy that could have been prevented, not a natural one that was beyond our control.

The catastrophe of Spectrum Garments in 2005 was mostly a failure of the building itself. The investigation report conducted by Bangladesh University of Engineering and Technology found that the owner had made changes to the design made by the structural engineers. He made the roof slabs thicker and columns thinner, inducing a sandwich effect.

The Tazreen tragedy had its roots in human failure. The workers were trapped in the inferno by gross human negligence. As the fire alarms rang, workers were told by the supervisors that the alarms were not working properly. Workers are generally put under lock and key to prevent pilferage. As many as 112 people were roasted alive.

The Rana Plaza mayhem is a combination of two failures. One is a failure of the building; the structure was designed as a commercial building with five stories but four more stories were built. This is a gross failure of the administration in ensuring public safety.

STRUCTURAL ASPECTS
Most buildings that are used as factories are not designed as



People gather close to Rana Plaza in Savar that collapsed on April 24, killing hundreds of workers in the nation's worst industrial disaster.

RMG factories. They are designed as commercial or residential buildings and rented out.

Factory buildings are designed with a higher factor of safety. Generally, commercial buildings are designed with a factor of safety of 2. Garment factory buildings are designed with a factor of safety of 3 to 5.

The live loads (weight of moving/movable objects) of storage areas or warehouses are designed with due consideration. The live load of such areas may be up to 5 times more than that of ordinary office buildings. The machines also

produce vibrations that are taken into consideration.

FIRE SAFETY

The garment industry is labour-extensive. Provisions are made for emergency egress in case of fire, earthquake or any other emergency. Emergency routes and especially stairs are of crucial importance given the fact that the raw materials are highly flammable.

ELECTRICAL SAFETY

The electrical systems are designed to adjust to the changing requirements of the production floor. Properly designed electrical systems and proper components are crucial to prevent failures that may lead to

fire hazards.

AIR QUALITY

For RMG factories, large floor plates enhance production flow and provide the flexibility required to allow for changes in machine layouts necessary for different types of apparel. But buildings with large floor plates are not easy to ventilate using natural means. Indoor air quality is often compromised in such factories. Fans and vents are a must in such situations. This poses significant long term health risks and fatigue.

ROLE OF GOVT

As for Rana Plaza, the government has failed to ensure that the building owners adhere to

approved plans. The local municipality has little power to ensure that the influential elite of the area stick to plans. This is true for almost all planning/permission agencies from the capital to the suburbs.

A dearth of competent code enforcers or inspectors adds to the nexus of undue politicking and corruption.

Rescue efforts also show the inadequacy of the disaster management agencies. The efforts of the common people show us once again who the real heroes are.

ROLES OF BUILDING OWNERS, FACTORY MANAGERS

The workers were forced to work on that fatal day despite cracks that appeared on some columns the preceding day. After the building collapsed, the owner was rescued by the local lawmaker himself, according to press reports.

The Spectrum, Phoenix and Tazreen incidents all have a common thread -- the blanket impunity of the management.

What makes the Rana Plaza tragedy more disturbing is that its owner felt that he could get away with anything as he is an active member of the ruling party. In the recent past, the owners of Spectrum, Phoenix or Tazreen simply got away with manslaughter.

The apparel association of the prized \$13 billion industry also acts with almost similar impunity for the owners of the buildings that failed. The workers simply do not have a voice.

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SAVAR TRAGEDY UK and companies 'must do more'

BBC ONLINE

COMPANIES such as Primark and the UK government need to do more to improve conditions for workers in Bangladesh, a British charity says.

Graciela Romero, of War On Want, says firms who use Bangladeshi products must "safeguard the life of these workers".

A factory complex collapsed on Wednesday on the outskirts of the capital Dhaka, killing some 350 people. Primark said it "accepts all its responsibilities in this disaster" and was providing assistance in the region.

A protest was held outside Primark's flagship store in London on Saturday following the disaster.

Romero, War On Want's Director of International Programmes, said businesses that employ people in Bangladesh "have the power to change the situation there and to basically safeguard the life of these workers and it's not happening".

"They need to act now, and the UK government needs to basically establish regulation to control these brands and then to protect the lives of workers in Bangladesh."

Primark occupied a floor of the collapsed building and workers there were suppliers to the brand.

A spokesman for the company said: "Primark shares 98% of its factories with other well-known retailers. Through the Ethical Trading Initiative, the company will continue to work to improve working conditions, as it has been for several years.

"The company accepts all its responsibilities in this disaster. It is providing assistance in the region, and will take further steps in due course."

A petition has now been launched by War On Want, calling for Primark and other retail brands which used the building's products to compensate the families of workers killed or injured.

Campaigners also want Primark, with Matalan and Mango, which have also used the building's products, to sign the Bangladesh Fire and Building Safety Agreement of firms, unions and non-governmental organisations aimed at ending the "appallingly unsafe factory conditions" in that country.

3D printing could herald new industrial revolution

AFP, Geneva

As potentially game-changing as the steam engine or telegraph were in their day, 3D printing could herald a new industrial revolution, experts say.

For the uninitiated, the prospect of printers turning out any object you want at the click of a button may seem like the stuff of science fiction.

But 3D printing is already here, is developing fast, and looks set to leap from the labs and niche industries onto the wider market.

"There are still limits imposed by the technology available today," said Olivier Olmo, operational director of Switzerland's EPFL research institution.

"But I'm certain that within 10 or 20 years, we'll have a kind of revolution in terms of the technology being available to everyone," he said.

The concept's roots lie in fields ranging from standard two-dimensional printing to machine-tooling.

First, a 3D digital design is created either from scratch on a computer or by scanning a real object, before being cut into two-dimensional "slices" which are computer-fed into a printer.

The printer gradually deposits fine layers of material -- such as plastic, carbon or metal -- and builds a physical object.

The product can be as hard or as flexible as you programme the printer to make it, and even include moving parts rather than being a solid block.

"In theory, anything that we have today can be produced through 3D printing. It may just alter manufacturing as we know it," said Simon Jones, a technology expert at global law firm DLA Piper.

In addition to the potential ecological impact of producing products right where they are needed, Jones said, 3D printing could make small-scale production of objects cheaper, rather than turning out huge numbers which may go to waste.

The uses go beyond easy replication of things that exist already.

"The technology offers possibilities that available manufacturing does not," said Carla van Steenbergen of i.materialise, a Belgium-based service that prints designs for users.

Van Steenbergen pointed to objects such as customised screws for broken bones which match a patient's specific anatomical characteristics and thereby cause less deterioration



Visitor looks at a 3D printer printing an object, during "Inside 3D Printing" conference and exhibition in New York on April 22.

than the traditional variety.

"It's the kind of thing that traditional technology won't allow. It's the kind of area where the big added value lies, making the impossible become possible," she underlined.

The technology has been around for longer than many would think: the first commercial 3D print technology, known as stereolithography, was invented in 1994.

It has taken time to inch into the limelight, however.

"It's honest to say that 3D printing is far from the mainstream, but it's a sign that something is happening," said Tristan Renaud of Prevue-Medical, a company that turns out models from 3D medical imaging data.

His technology chief Erik Ziegler said using online 3D printing services was likely to remain the norm for a while, given printer costs.

An alternative is provided by "Fablabs" -- short for "fabrication laboratories" -- a concept created by the Massachusetts Institute of Technology that offers grassroots access to small-scale manufacturing facilities.

But for those tempted by home-output, a handful of 3D printers have hit the consumer market, retailing for around \$2,000.

As with computers, the price is expected to fall over time as demand rises and technology advances.

Van Steenbergen said that at the industrial level, 3D printing is not set to take over from

classical methods, but rather go hand in hand.

"I think it will affect the manufacturing of some products, but it's never going to replace it," she said.

It also raises a raft of questions.

For example, would a car manufacturer be ready to let a neighbourhood mechanic print spare parts? And if such goods were produced under licence, what quality guarantees would be offered to consumers?

On the intellectual property front, what constitutes fair production of a replacement part for something you already own? And would designers of 3D objects be protected from an equivalent of file-sharing, bemoaned by the music industry?

"We'd tend to see an increase in commercial impact," said Jones. "It would be very difficult to prevent that once 3D technology got to a cost point that's sensible."

Francis Gurry, head of the UN's World Intellectual Property Organisation, underlined that the global 3D printing business is forecast to be worth \$3.7 billion by 2015.

In contrast, world merchandise exports were worth \$18.3 trillion last year, and commercial services, \$4.3 trillion.

Despite remaining small in global terms, Gurry noted, the value of 3D printing is expected to expand relatively fast, to \$6.5 billion by 2019.

China's 4G bonanza to shake up mobile gear vendor market

REUTERS, Stockholm/Paris

CHINESE telecom operators will start awarding contracts for super-fast mobile networks this year, kicking off the third wave of a global investment cycle that is reshaping the competitive landscape among telecom equipment makers.

China, the world's biggest mobile market with 1.1 billion subscribers, is likely to further alter the picture at the expense of European suppliers by giving a huge boost to Huawei and its smaller Chinese rival ZTE.

Huawei already took a chunk of Europe's fourth generation mobile contracts last year, so another big win for it could be especially tough for middle of the pack gear makers like Nokia-Siemens Networks and Alcatel-Lucent. Both have struggled to combat Chinese competition and generate steady profits since being formed in mergers in 2006.

"China will blow everything else away in terms of volume this year," said David Geary, head of Alcatel-Lucent's wireless division.

Sweden's Ericsson currently has the biggest slice of the global mobile equipment market with around 35 percent, while Huawei has 17 percent, NSN 15 percent and Alcatel-Lucent 12 percent. The first wave of 4G investments that began in 2010 in Japan and Korea favoured Ericsson and NSN, and saw the arrival of newcomer Samsung, while the second in the US went largely to Ericsson and Alcatel-Lucent.

But even vendors that have done well in 4G so far need a China boost given the weak outlook for network gear this year.

Research firm Gartner sees network equipment sales up 2.3 percent to \$79 billion in 2013 after a contraction last year.

China's three mobile operators - China Mobile, China Unicom and China Telecom - plan to spend a combined \$45 billion yuan this year on network upgrades. That includes investment in 4G, which multiplies mobile broadband speeds by up to five times for users of Apple Inc's iPhones or Samsung Electronics' Galaxy phones.

China Mobile will open the competi-

tion with a massive contract. It plans to plough 41.7 billion yuan this year into 200,000 4G base stations in order to provide services for its 710 million customers - more than twice as many as there are people in the US.

Whether Europe-based network providers can grab a sizeable piece of that depends largely on whether the process for awarding 4G contracts in China follows the pattern set for the 3G ones, say analysts. Then, Huawei and ZTE gained a massive presence in local carriers' networks in part because of implicit government pressure to support local companies.

Senior sector executives are also worried that foreign companies' bids to win China business could also be complicated by a brewing trade spat with the European Union about whether Huawei and ZTE benefit from unfair trade subsidies.

In past generations of mobile technology, telecom operators have often favoured bids from the gear vendors that already supply them because it simplifies the upgrades and reduces costs.

Ericsson, Huawei, and NSN have surged this trend, especially popular with Europe's cost-conscious operators, by offering multi-standard radio technology in which a single base station can handle 2G, 3G and 4G traffic.

Challengers including Samsung and Alcatel-Lucent, who have limited market share in 3G, are instead pitching so-called overlay 4G technology that is built from scratch on top of old networks.

How the competition between these products will play out in China, where the market is further complicated by the presence of two local standards known as TDD and FDD, remains to be seen.

But many analysts believe that Huawei and ZTE - already big suppliers of China Mobile since only 10-15 percent of 3G network contracts went to foreign vendors - will be winners, leaving the others to fight for smaller bits of the pie.

Michael Li, an analyst at China Everbright Research, predicted 60-70 percent of China's Mobile's 4G projects would go to Chinese because the bulk will be upgrades based on the current frequencies.