

# How can we make our buildings safe?

Dr AFM Saiful Amin, Professor of Civil Engineering, Bangladesh University of Engineering and Technology (BUET), talks to Nahela Nowshin of The Daily Star about the causes and ramifications of our failure to comply with the Bangladesh National Building Code, and more.

**What are some of the most common ways in which the Bangladesh National Building Code (BNBC) is violated?**

Defiance of the BNBC stems from the ways that it can provide immediate benefit to owners and often the users and the developers of buildings. For example, rules are violated to achieve maximum use of space when land itself is costly. To maximise land use, a building's ground coverage (footprint) is increased, allowing less horizontal clearance between the adjacent buildings or road perimeter. Buildings are constructed taller than permitted by the code to obtain extra floor space from the same piece of land. These exercises impair not only the owner's

often remain unserviceable or used beyond their expiry dates; fire drills occur in very rare cases even in high-rises. Use of low-quality materials coupled with low construction quality compromise much of the structural, electrical and fire safety. The requirements in the code for different occupancy types, number of occupants and building heights are not the same. Often a building designed and constructed for residential purposes is used for commercial or industrial purposes without addressing the additional demands that the code requires for such usage. Structural integrity as well as fire and electrical safety requirements are often compromised by changes in usage type without appropriate and authorised alteration to the original construction.

**What are some safety-related measures mentioned in the BNBC, including fire safety?**

The BNBC stipulates different precautionary requirements for fire protection depending on usage type, occupants and construction type. A building may not only need to have its own working system to detect and suppress a fire, but also fight a fire via fire extinguishers, sprinklers and even fire hoses directly connected to the fire pump and reserve water until firefighters reach the scene. Fire doors at the fire exits and fire chutes will keep the fire escapes free from smoke so that people can evacuate safely and promptly when everyone gets to know about a fire incident through command centre announcements or spontaneous activation of fire alarms.

However, operational efficiency in dealing with these hazards in extreme situations depends on the preparedness of the occupants in a building and their fire safety plan. In the regular fire drills stipulated in the BNBC, occupants must not only learn about the uses and necessities of these measures but drills must also familiarise them with such hazards and their means of escape at their premises. They are supposed to learn about the system and the operational capacities of all equipment, devices and means tested onsite during the drill. They must know to use the stairs and that elevators mustn't be used.

In our society, because of public safety issues, most of the collapsible gates in the lone stairs of a building are found locked. This means that occupants may not have the chance to escape a building in the event of a fire if they don't have access to the keys. The basic issues of civil defence in regard to safety during fire, earthquake and electrical hazards should be a part of general primary education.

**There are numerous buildings in the city of Dhaka, like FR Tower, which have built extra floors without permission from Rajuk. Demolition of these extra floors does not seem practical. How can this issue be addressed?**

The Building Construction Act for the city of Dhaka has seen several revisions since 1952. Dhaka Imarat Nirman Bidhimala 2008 had been introduced after enacting the BNBC which was drafted in 1993 and endorsed as law in 2006. Addition, alteration or modification of an existing building must meet the requirements of the prevailing code and also conform to those required for a new building under the applicable code. Evaluating the compliance of an existing building may require referring to its construction history. Bangladesh's building code has no provision to declare an unsafe and noncompliant building a safe and compliant one or permit its usage without it undergoing certain modifications or alterations such that the noncompliant building meets the code requirements, viz. ground coverage, height, structural integrity, fire, plumbing and electrical safety for a particular usage. Conversion of a building to low-demand usage might also be an option in some cases. Owners and users are not usually interested in these modifications and alterations for the fear of costs and interruptions in rent or business unless they are essentially forced to do so.

Modifications to meet the ground coverage, height and fire escape requirements are the most challenging tasks for the engineer and the architect, while structural integrity can be restored through appropriate strengthening methods. Equipment like

fire extinguishers, sprinklers and fire hydrants can be skillfully designed and quickly installed, but will require regular inspections to ensure they remain active and operational when a fire incident takes place. With the depletion of groundwater, water scarcity in Dhaka and disappearing lakes, it is becoming a daunting task to fight a massive fire unless it is extinguished at the source with intelligent detection technology, such as smoke and fire detectors coupled with water sprinklers. Ensuring electrical safety and safe storage of flammable and toxic substances will drastically decrease fire incidents and related injuries.



Dr AFM Saiful Amin

**What are the government agencies responsible for overseeing the BNBC and involved in the process from design to construction of a building?**

At this moment, no exclusive regulatory authority exists to check the compliance of buildings per the BNBC or other government regulations. Rajuk has been given responsibility for Dhaka city and Chittagong Development Authority. Local pouroshovas and other local bodies look after matters in the rest of the country. However, while all these bodies have several other responsibilities and services to deliver, they often lack enough skilled manpower to inspect the huge number

of buildings in their respective jurisdictions to enforce compliance. Misinterpretation and manipulation of the code are common due to ignorance or other vested interests, besides malpractice (ignoring a noncompliant building). In such situations, many countries around the world depend on regulatory authorities who train to prepare certified inspectors to conduct inspections, issue and regularly validate occupancy certificates, and submit regular reports to the authorities in case of violations for appropriate action to be taken. The inspectors have adequate knowledge of building laws and consequences, architecture, surveying, quality control and the required specifications, and are trained well enough to read the drawings produced by qualified designers. The cost of such inspections can be covered by city taxes. To make the system accountable and workable, certified building inspectors can work under the direct supervision of a few private licenced corporate bodies which will be directly accountable to the regulatory authority of the government.

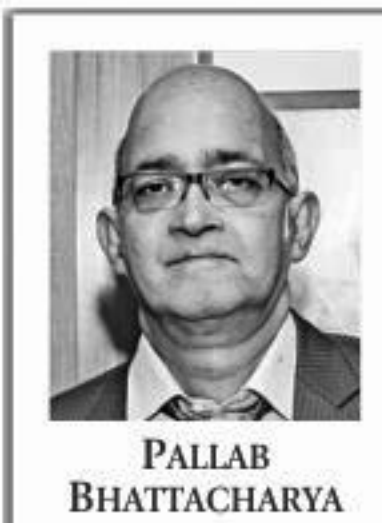
This regulatory authority will then be substantially able to reduce its workload for regular decisions, delegate authority to capable hands, hold them accountable for their actions, and concentrate only on more critical issues and large projects. This can ensure quality service for city dwellers, and reduce harm from deliberate malpractice and corruption through adequate enforcement of the law. All coexisting laws, acts, regulations and guidelines need to be compared and streamlined to make all these actions more efficient and convergent. Professional bodies for engineers, planners and architects, viz. Institution of Engineers, Bangladesh, Institute of Architects, Bangladesh and Bangladesh Institute of Planners, need to be strengthened so that qualified and capable professionals can be made directly accountable for their designs. Design clauses in the building codes can be updated by these professional bodies in quick intervals as is practised around the world.

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building, but adjacent buildings too become less serviceable because of limited access to daylight and there are privacy issues as well. Future widening of adjacent roads is restricted also. These buildings become more vulnerable to extreme events like earthquakes and fire hazards. To increase the useable floor space, smaller column sizes and narrower emergency escapes are often preferred that reduce structural and operational safety in extreme situations.

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## Rahul Gandhi goes south to revive Congress



PALLAB BHATTACHARYA

**R**AHUL Gandhi's decision to contest from a second parliamentary constituency—Wayanad in the southern state of Kerala besides his traditional constituency of Amethi in Uttar

Pradesh in the north—in the coming national elections is an emphatic statement of his long-term strategy to rebuild his party and bring it back to power.

Conventional wisdom suggests that when the top leader of a party fights polls from a constituency, there is a strong political motive behind it and it has implications for the entire state in which the constituency is located. In the previous parliamentary polls, Narendra Modi had contested from two seats—one from his home state of Gujarat and the other from Varanasi in Uttar Pradesh. And look at the stunning result his contesting from Varanasi produced for Bharatiya Janata Party (BJP) in ground zero of the national poll battle with the highest number of seats; the party won 72 out of a total of 80 that helped it secure a clear majority in the 543-strong Lok Sabha for the first time for a single party in three decades.

Similarly, Rahul Gandhi's choice of Wayanad is highly symbolic. Kerala is now ruled by the Communist Party of India (Marxist)-led Left Front and the state has never returned a ruling party or alliance for a second consecutive term. The result: it has swung between the Congress and the Left every five years. Senior Congress leader from Kerala AK Antony pointed to the geographical importance of Wayanad which is located in Kerala but is very close

to the borders with neighbouring Karnataka and Tamil Nadu—hinting that the Congress' quest for return to power will be through southern India where the BJP's presence is limited.

And history bears testimony to Antony's remarks. Every time the Congress had faced challenging times in the past, it looked to south India for a comeback. Soon after the defeat in the general elections in 1977, in the wake of the infamous Emergency, Indira Gandhi had won the parliamentary by-election in Chikmagalur in Karnataka in 1978. That had signalled the return of Congress to power which finally happened in 1980 under her leadership. In fact, in the 1980 national polls, Indira Gandhi had contested successfully from two constituencies and one of them was in south India—Medak—in the then

Karnataka, being the principal challenger to the Left in the former and the BJP in the latter. Rahul Gandhi may have chosen Wayanad keeping in mind that fresh assembly elections in Kerala are just two years away and his contesting from there would make the right statement regarding his party's intent. He is also aware of the fact that Kerala has a history of never returning the same party or alliance of parties to power for more than one term.

In Tamil Nadu, Congress is a fringe force after its steady decline—having lost its supremacy to caste-based Dravidian parties—and is going to contest the forthcoming national polls as a junior partner of an alliance led by regional party Dravida Munnetra Kazhagam. The bifurcation of Andhra Pradesh and the creation of a separate Telangana state have no doubt put the Congress in a messy

of jobs for landless farmers, and pro-poor and pro-minority causes. It is an overwhelmingly rural constituency whose people are largely dependent on agriculture as a source of livelihood, and it has a sizeable Muslim (45 percent) and Christian presence amongst the total population.

While it remains to be seen how his contesting from Wayanad pans out as far as the Congress' prospects in south India are concerned, two political fallouts stemming from his decision have become obvious.

First, the BJP has already attacked Rahul Gandhi claiming he is scared of losing in Amethi, where his principal challenger once again is the saffron party's leader Smriti Irani who had lost to the Congress chief in the previous parliamentary polls five years ago. The Congress may have also reckoned that given Irani's frequent visits to Amethi as part of her efforts to nurture the constituency, it is politically safer to have an additional constituency for Rahul Gandhi as a fallback arrangement in the event of a setback in Amethi.

Secondly, Rahul Gandhi's selection of Wayanad has already prompted the BJP to resort to its favourite political weapon of a polarised narrative against its rivals by pointing to the fact that the constituency in Kerala is dominated by religious minorities.

In opting for Wayanad, Rahul Gandhi has opened himself up to the charge of doing little to amp up anti-BJP unity. The CPI(M) is livid at his choice of Wayanad as evident from sharp reactions from the Marxist party's top leaders Prakash Karat, his wife Brinda Karat, and Kerala Chief Minister Pinarayi Vijayan—all of whom have vowed to work towards the defeat of the Congress president in the parliamentary polls. The reaction of the Marxist party is surprising given the fact that the Left and the Congress have always been rivals in Kerala, much like in West Bengal where, too, the two sides failed to form a tie-up to take on the ruling Trinamool Congress and an emerging BJP in the state.

Should Rahul Gandhi be more concerned about opposition unity or about strengthening his own party? It should not be forgotten that all key regional parties across India have either broken away from Congress or grown at the expense of Congress. Rahul Gandhi has signalled his intent to emerge from the shadows of his mother who was more into coalition-building. Wayanad could be the new way forward for the Congress Party and Rahul Gandhi's southern pitch could be the new tune for the party.



President of the Indian National Congress Party Rahul Gandhi addresses the 48th Congress plenary session in New Delhi on March 17, 2018.

PHOTO: AFP

undivided Andhra Pradesh state. The other constituency she won in that year was Raebareilly in Uttar Pradesh. Again in 1999, when the Congress was out of power at the Centre, Sonia Gandhi, who was new to the post of president of Congress and was in her first parliamentary poll contest, had won in the iron ore mining district of Bellary in Karnataka after a stiff fight against Sushma Swaraj. Now, Rahul Gandhi seems to be treading on the beaten track of his grandmother and mother.

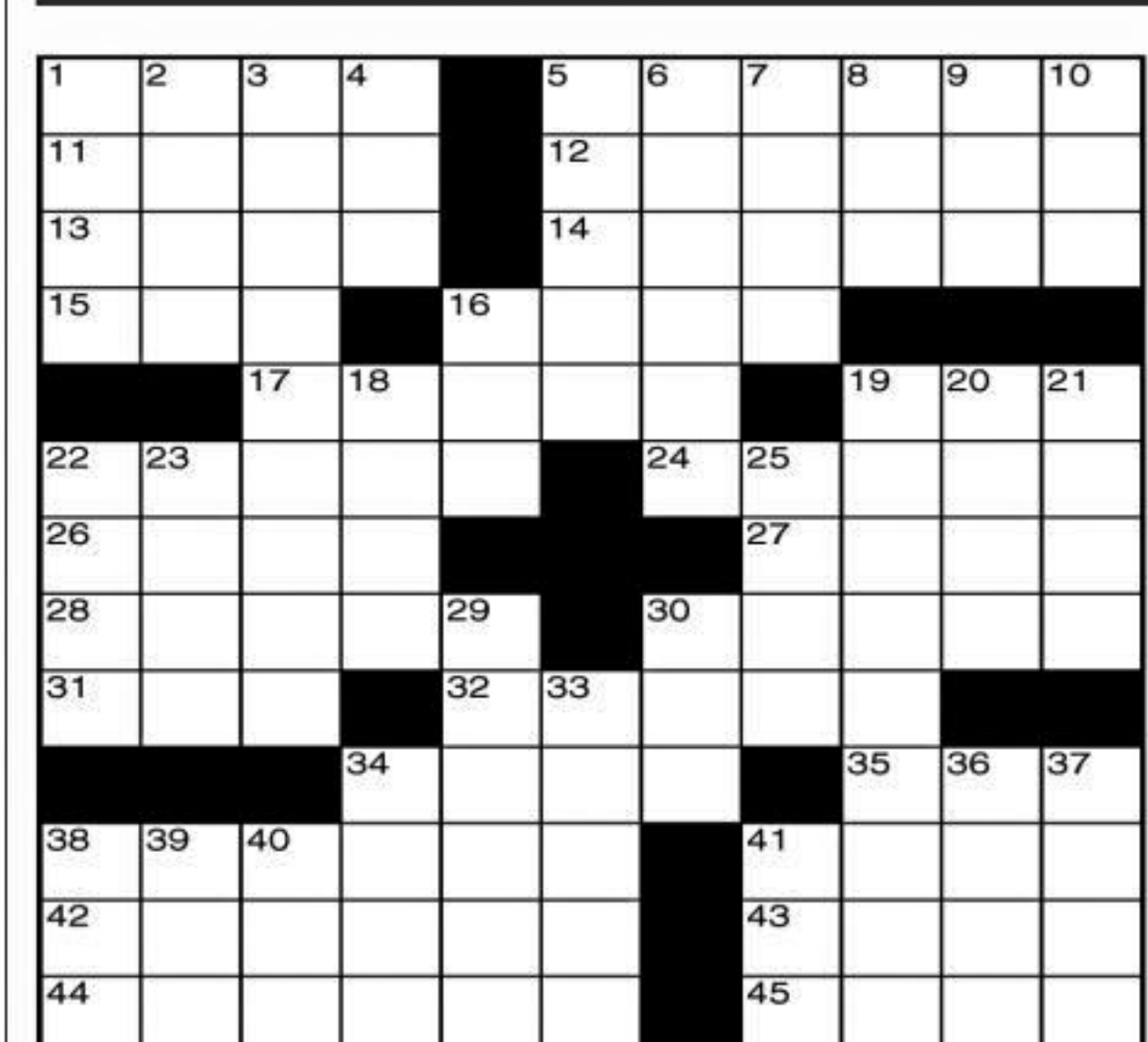
Karnataka, Kerala and Tamil Nadu together account for 87 Lok Sabha seats and the number goes up to 129 if one were to add 25 seats in Andhra Pradesh and 17 in Telangana states, both of which are also south of the Vindhya Mountain Range—that is the geographical dividing line between north and south India. The Congress is strong in Kerala and

situation in both places, but the party remains a force to reckon with there despite the emergence of regional parties like Jaganmohan Reddy-led YSR Congress Party (YSRCP), a breakaway outfit of the Congress, and Telangana Rashtra Samithi (TRS). Last year, Congress lost in Telangana assembly polls against TRS which returned to power. In Kerala, Congress is sensing victory in the next assembly polls given the state's electoral history of swinging between the Congress and the Left and hopes to put up a strong show in Andhra Pradesh where ruling Telugu Desam Party, headed by N Chandrababu Naidu, is battling anti-incumbency.

Another reason for Rahul Gandhi selecting Wayanad constituency is that it will amplify the main components of his campaign narrative against the Narendra Modi government: farm sector crisis, lack

### CROSSWORD BY THOMAS JOSEPH

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|-------------------------|-----------------------|----------------------|
| <b>ACROSS</b>           | 32 Wield, as power    | 10 Young fellow      |
| 1 Mob pursuers          | 34 Rural spread       | 16 Distant           |
| 5 Sound of delight      | 35 Air gun ammo       | 18 Corn Belt state   |
| 11 Egg outline          | 38 Split start        | 19 Robin's-egg, e.g. |
| 12 Dawn goddess         | 41 Airplane wing part | 20 Stocking color    |
| 13 Grant of films       | 42 Bureau             | 21 Abound            |
| 14 Like many lifeguards | 43 Continental coin   | 22 Lockup            |
| 15 Printer's supply     | 44 Gallows sights     | 23 Take apart        |
| 16 Evergreen trees      | 45 Bit of rind        | 25 Substandard       |
| 17 Enormous             |                       | 29 Spooky gathering  |
| 19 Rent out             | <b>DOWN</b>           | 30 Skirt edge        |
| 22 Panel member         | 1 Ellipse points      | 33 Clinic shots      |
| 24 Cumin or coriander   | 2 John, in Wales      | 34 Stadium group     |
| 26 Over again           | 3 Hunter, e.g.        | 36 Lockup feature    |
| 27 Fairy tale monster   | 4 Cunning             | 37 Set eyes on       |
| 28 Notions              | 5 Gown material       | 38 Outlaw            |
| 30 Boring               | 6 Gallon divisions    | 39 In the past       |
| 31 Horror's Chaney      | 7 Coffee dispensers   | 40 "The Matrix" hero |
|                         | 8 Long time           | 41 Turkish topper    |
|                         | 9 "You -- Here"       |                      |



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