

## Lack of authority makes building code ineffective

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The limitations and failure of among others Rajdhani Unnayan Karttripakhya (RAJUK), Dhaka City Corporation (DCC) and its Ward Commissioners, Civil Aviation Authority (CAA), Dhaka Traffic Control Board (DTCB), Fire Service and Civil Defence, Dhaka WASA, Dhaka Power Distribution Company and its predecessors, and Department of Environment (not in that order or extent) in harnessing improper building activities have compelled ideas in the past to emerge from professionals seeking to ameliorate the rapid deterioration of our urbanscape.

Bangladesh's own building code was a great start in the early 1990s but BNBC 1993 failed to switch to a higher gear in over two decades, although efforts are on for a revised version dated 2010. Nor has the code been taken up in earnest by architects and engineers mainly due to the lack of a guardian to oversee its implementation, penalise violators and amend provisions in line with growth and technological developments. Indeed any professional engaged in the building industry will tell you that the BNBC 1993 was made a law in 2006, and then in all probability smirk at its ill and orphaned state.

The stipulation of a One Window Service Cell for the benefit of building owners and developers under Dhaka Metropolis Building Construction Rules 2006 stumbled on commencement and was removed from

the now effective 2008 Rules, primarily because the small windows could not become the big Window. The 2008 Rules require four stages of clearance and is overseen by at least three statutory committees.

Engr. Syed Azizul Haq, PEng., argues in favour of a Building Regulating Office to coordinate owners, design professionals, developers, contractors, service providers, building material manufacturers and suppliers, financiers, and occupants with a bid to making the built environment more liveable, better constructed, well maintained and serviced by latest information appropriate for our economy and land. The author however stops short of calling the proposed office an 'authority', one would assume not to upset prevalent authorities (some toothless by choice), and yet that is what is most lacking in our collective desire to impose our home-grown building code.

The code is seeking a guardian and should be granted one.

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Rangs building being demolished yielding space to a link road.

PHOTO: ANISUR RAHMAN

# Building regulating office: The need of the times

SYED AZIZUL HAQ, PENG.

Building is an infrastructure built permanently or semi-permanently for the use of various characters of occupancies in safe, comfortable and good environmental condition. For sustainable development of building infrastructures various acts, rules, regulations and guidelines are made for strict compliance in addition to setting codes for its safe construction and maintenance practices. In 1993 Bangladesh National Building Code (BNBC) had been published for bringing unanimity in planning, designing, construction, maintenance and even in demolishing practices in the country considering its socio-economic, cultural, religious and environmental conditions. The code was supposed to be followed by all concerned as a good practice. Unfortunately, irregularities in every aspect of building development went on unabated. As a result, serious failures of varying magnitude from tilting to pancake collapse of buildings were experienced. The number of such occurrences of various types of building failures is increasing. With a view to ensuring safe buildings BNBC was made legally binding in 2006 by amending the Building Construction Act. Provisions for punishment were also prescribed for the violators, though instances of punishment for building code violation are at best rare. But the burning question remains: who will administer BNBC?

### Building development partners and stakeholders

The development of safe building and maintenance under occupancy demands active involvement of owner, regulatory authorities, professionals, constructors, service-providers and occupants. All the parties have vital roles to play, as stated below.

**Owner:** A building may be owned by three categories of owners like 1. Private, 2. Public and, 3. Foreigner. In such variable conditions how the owners of the building are to be brought under a common framework of rules and regulations towards ensuring safety needs to be worked out. In some cases there might be more than one owner of a building, and fixing liability may be an issue. An independent administrative office might be the option.

Owners have to bear several responsibilities for development and maintenance of a building. For new construction the Owner has to take permission from a local building permitting authority. Owner shall have to select competent consultant for the project. It is to be decided for what scale and type of building construction there might be exemption from engaging any consultant. The Owner shall be responsible for obtaining necessary permission from the utility service providers to avoid any damages to their components if any under or adjacent to the construction site. The Owner shall also be made responsible for not keeping and maintaining all sorts of safety measures in the building when development activities are carried. For this purpose some sort of monitoring and certification will be needed.

**Development agencies:** Buildings are developed by a team of professionals, technical personnel, skilled and unskilled labour. These personnel may work under some agencies or individual. The agencies involved in the building development process may broadly be categorized as follows:

**Consultant:** Consultants are engaged for preparing all necessary documents either in hard, soft or in both forms for implementing the building development project.

Consultants are sometimes given the responsibility of getting the work done by the contractors properly on behalf of the owner. According to the volume of work and complicity in design and construction of building, qualification and experience of the consultants and its concern personnel shall be well defined. Consultants shall be categorized or classed basing on their experiences and satisfactory performances. Capacity and strength in terms of manpower of classified consultants in handling particular class of jobs shall also be formulated. In some cases foreign consultants are found to be engaged in some private and public projects. There shall be exclusive regulations regarding employment and regulating foreign consultants.

**Contractor:** Contractors are engaged in accomplishing construction, repair, demolishing and maintenance of buildings and its supporting services. Contractors are generally held responsible for construction quality and site safety, and made liable for any failure, misappropriation and damages, etc. developed in the structure or its components within about one year after completion of a job. In some cases contractors are allowed to procure the construction materials involved. In public projects concerned engineers are generally made liable for any misappropriations done by the contractors. In case of any damage or failure of any public building the responsibility to be shared between the responsible public officers and contractors shall be formulated.

**Developer:** Developers are those who carry out the whole process of building construction including financial investment. A developer may be also the Owner of the building. They combine the tasks of consultant and contractor, which is not ideal for quality. In case of any misappropriation it will be necessary to find out whether the developer or its engaged personnel were responsible.

In most cases safety in building stands for structural safety but virtually total safety in building is a multidimensional issue. When building size goes too high and too large then safety against hazards from installation and maintenance work of electromechanical equipment and machineries, vertical or horizontal transport systems, plumbing and sewage disposal system fall within building services, also become equally dominant. According to the volume of work, uniqueness, skill and risk involved in the development practices of buildings, it should be categorized in various classes to fix up the qualification of consultants and contractors and experience of their working personnel for particular class of jobs to shoulder the task and responsibility. Categorization or classification of works are also necessary to evaluate capacity need and fix up the qualification and experience required for positioning officers and chartering respective duties at various levels of administration in building regulatory office.

**Permitting authority:** One can only have a dream of having building at a particular place for a particular purpose. Proponent of a building may find it beneficial for the purposes it would be planned but truly it may not be right in socio-economic or environmental context. In these perceptions one need to have permission for constructing building of approved occupancies, size and shape, from an authority who actually supposed to know where and what type and size of building could be allowed to construct. In fact permitting authority examines the sustainability of the proposed building in the context of

prevailing and future anticipated socio-economic and environmental considerations. Generally authorities responsible for urban development planning can be authorized to give those permissions. Building development regulatory authorities will be checking the authenticity of permission given by the permitting authority only.

**Financial organizations:** Financial organizations provide fund as an investment for developing or procuring building, and realize the money back along with some interest. These institutions are supposed to get their money back by instalments from the borrowers. Borrowers pay back the instalments usually from the rents they get or business they make using the building within a time boundary. But if the buildings any how lose its usability for any reasons both the borrowers and the investors fall in heavy financial loss. To avoid occurrence of such an undesirable situation the financial institutions need to ensure that the buildings were developed by professionals. So if any regulatory office could ensure or certify the appropriateness of the building development and construction then

quality of used materials in building development. Building regulating office shall be taking effective administrative measures in case of finding use of unspecified building materials and subsequently will initiate formalities for taking legal action against the responsible persons or enterprises involved.

**Occupants:** Occupants in a building play vital role in keeping a building in safe condition. Some undue and wrong doings by the occupants overstress the structure causing its instability that may lead to failure of structural elements and finally may cause collapse of building. Some activities may impair fire or other safety. The effect of such unwanted activities may emerge after a long period as a result the occupants responsible could not be booked for the legal purpose. So keeping records of occupants of buildings shall be an important job to be administered. In some cases occupants are allowed to do some minor repairs or changes as per agreement made between the owner and the occupant. The scope of such minor works shall be guided and regulated otherwise some fatal incidences may take place.

administer by the same regulatory office.

In recent days demolition of old buildings for development has become a common phenomenon in addition to demolition of any risky or illegally constructed building or its parts. The tragic loss of life of 12 workers during the demolition of the 10-storeyed Rangs Bhaban highlighted once again that demolition is to be taken with all care and technical correctness. Demolition of buildings shall be carried out under the same regulatory office.

Heritage buildings are highly valued. Modification and dismantling of such important buildings are being highly criticized. Renovation by defacing the original character cannot be accepted. Streamlining and managing these highly specialized, sophisticated, and skilled jobs needs to be regulated by one office.

In case of any catastrophic failure of any building or its any elements during its construction, occupancy, maintenance, or demolition, the root cause of failure shall be investigated. The investigation, in many cases will be troublesome, cumbersome, highly analytical, and complex laboratory test dependent. This type of rigorous investigative work was rarely carried out in the past. Building regulatory office shall have to undertake such investigative programme to unearth the causes of any failure or accidents in buildings, and will have to identify the cause the person responsible.

Building development activities are also accomplished by some public organizations. All the public organizations excepting Public Works Department execute building development projects by their own construction cells or wings. Incapacitation of various public organizations in building development activities may initiate the cause of many untoward incidences. There is no provision of regulating the building development activities run by the public organizations.

So to ensure safety in total building industry all these multi-department and interrelated multidisciplinary activities of all the partners and stakeholders are to be regulated by an exclusive, unique, and independent authority proficient in building technology related activities. This authority will be solely entrusted for ensuring total safety of all concerns inside and outside the buildings at every corner of the country.

### Expected activities of building regulating office

As building development involves various professionals, workforce, technologies, materials, machinery, and testing, the building regulating office will have to perform various activities. Followings are some major and mandatory activities to be performed by a building regulating office:

1. Regulating and controlling building development activities according to Bangladesh national building code.
2. Policy formulation for regulating building development.
3. Regulating safety and environmental aspects of buildings and its surroundings.
4. Updating rules, regulations and policy formulation.
5. Certifying about the safety, capacity of occupancy, usability and living environment of building.
6. Categorizing the consultants and contractors with respect to their work experience, manpower, equipment and financial capability etc.
7. Investigating the cause of any faults, failures or accidents and fixing liabilities of the concerns.
8. Categorizing the offences and fixing corresponding penalties or

punishment. 9. Taking preventive or punitive action against any violation of codes and regulations.

10. Preparing and providing documents to carry out legal proceedings against any accused individual or group.

Besides, a building regulating office may be expected to perform the following tasks:

1. Awareness building.
2. Establishment of sustainable green building.
3. Regulating construction of structures other than buildings.
4. Updating National Building Code continuously.
5. Preserving drawings and other related documents.

Activities of building regulating office can also be categorized in the following three perspectives.

**A. In-house activities:**

1. Checking permits of building construction taken from development authority.
2. Vetting architectural, structural and building services elements design.
3. Approving construction and occupational safety health and environment (OSHE) management plan.
4. Vetting alteration plan, design and activities.
5. Vetting maintenance program and retrofitting design.
6. Vetting demolition permission and demolition plan.
7. Preservation of documents.
8. Building occupational capacity fixation.

**B. Out-house activities:**

1. Construction supervision.
2. Monitoring occupancy changes.
3. Supervising and monitoring alteration, maintenance and retrofitting works.
4. Supervising and monitoring demolition work.
5. Supervising and monitoring OSHE management.

**C. Activities related to legal matters:**

1. Policy and guideline formulation for taking preventive, punitive and legal actions.
2. Investigating the cause of any faults, failures or accidents and finding out the causes and the responsible bodies or personnel.
3. Taking preventive and punitive actions or carrying out legal prosecution.

### Concluding remarks

Buildings shall be made safe for all; those living inside and those outside. Bangladesh National building Code 1993 has been made obligatory to follow in all building development activities for the purpose of quality, and safety. Enforcement of BNBC without having any enforcing and regulating authority has proved ineffective. Establishment of a building regulating office has now become necessary. All stakeholders and associated partners of building industries shall be brought under the regulatory mechanism of this office. This authority shall work under one umbrella for all sorts of buildings all over the country. Building regulatory office shall have to perform various activities ranging from ensuring safety to taking legal measures for any deviation from the provisions of rules and code. Establishing a building regulatory office with a narrow vision shall not be effective. To ensure good practice and safety in the building industry, an independent building regulatory office manned by multidisciplinary technical personnel related to building development should be established without delay before any further catastrophe.

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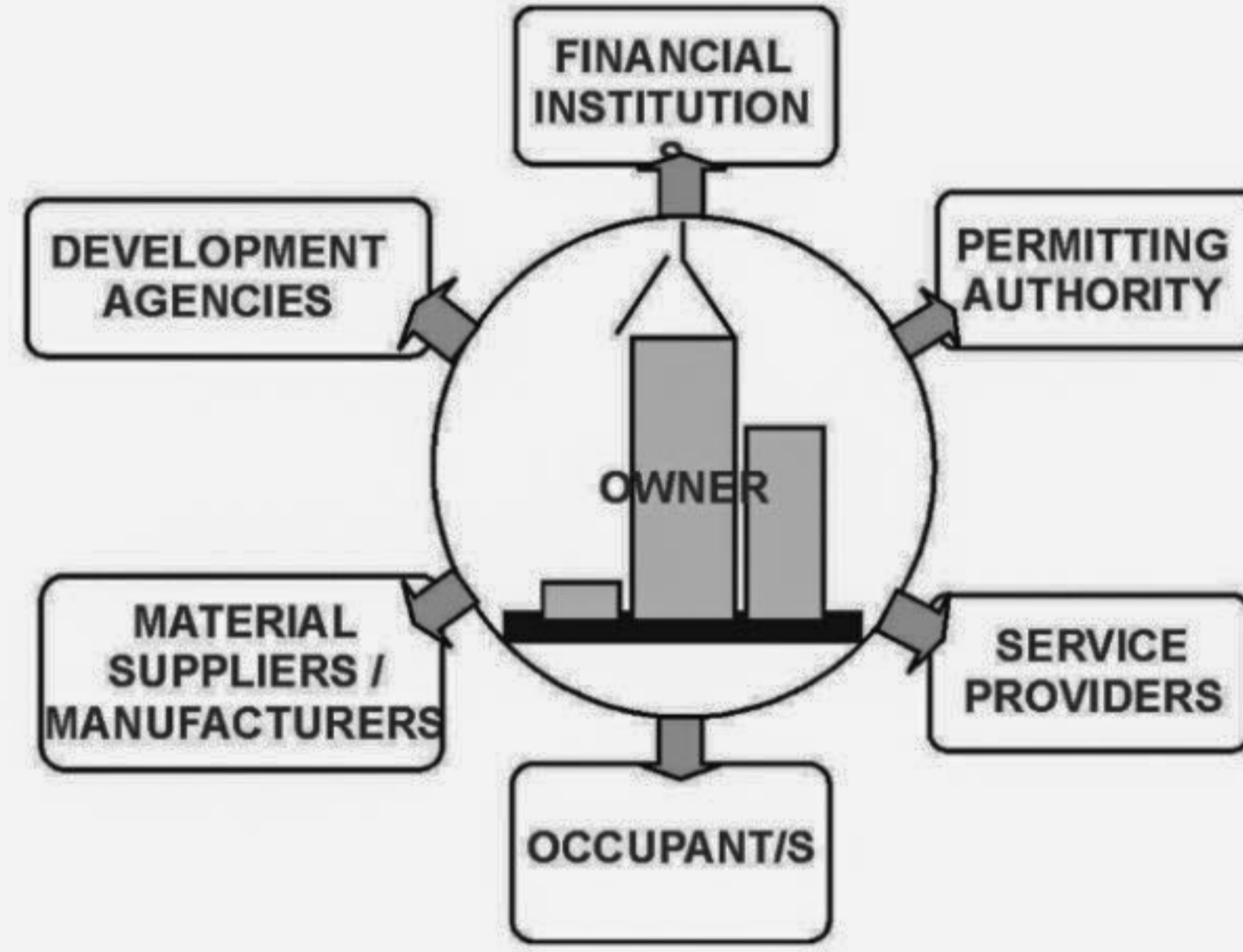


Figure 01: Partners and stake holders in building development.

the financing institutions would be relieved of shouldering the responsibility of checking or monitoring the building process.

**Service providers:** Buildings require services like water, gas, electricity, waste disposal, and storm drainage. Different organizations are responsible for providing different services required for occupation of a building. Building occupants and the owner should be monitored and regulated so that they do not waste or misuse these services and resources. A building regulating office may also take up awareness developing initiatives to educate building owners and occupants to ensure minimum wastage and abuse of resources.

**Building material suppliers and manufacturers:** It is found that about 250 items are required in building construction and maintenance. Their quality shall be ensured before using in the building. Bangladesh Standard Testing Institute (BSTI) is responsible for ensuring the quality of all manufactured and imported products or items. Nevertheless some substandard and adulterated materials are easily available in the market. Material suppliers or the buyers are knowingly or unknowingly becoming victim of the circumstances. Identifying and fixing liabilities of responsible person/s in these regards would be a challenge but must be done very carefully, impartially and judiciously. Capability and integrity of available testing facilities is also an important factor in determining the

### Necessity of a regulating authority

Building development activities are going on almost unregulated way in all corners of the land. Though the problem of safety related issues in buildings is very acute in the capital city but similar nature problems are being felt in other parts also. With the passage of time these problems are magnifying, new problems are emerging and the boundary of problematic areas is enlarging. Besides there are various other issues, other than building development partner and stake holders related issues, those shall be equally addressed for achieving totality in regulating building development.

Buildings are approved for specific purpose and occupancies. Change in occupation of a building brings change in load pattern and load path in the structural elements which may impair structural safety. Change in occupation may also invite alternative approaches for mitigating fire safety, waste management and various other issues. In this case permission from both the permitting and regulating authorities will be necessary.

Retrofitting of buildings, vulnerable to anticipated natural disasters, is highly technical and specialized nature of job may need performance guarantee of the works done in these contexts. Testing the performance, authentication and certification regarding performance after repairing or retrofitting might also be needed to