

## Rooftop Innovation: A potential growth industry

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HAVING had the occasion to be on the 12th floor of an apartment building in Dhaka, I was taken in by the panorama that was both breathtaking and dispiriting. Breathtaking because one can see the expansive growth of what is now regarded as a megacity. The extent of resources that must have gone into creating this sprawling city provokes the imagination of how well the country has done economically in recent times. There is just construction everywhere. The dispiriting part stems from the observation that much of this growth seems to have been mindless, disharmonious, and very ill-conceived.

The buildings are mostly in poor alignment –a veritable eyesore – reflecting the lackadaisical spirit of both builders and government agencies that authorise designs and building orientations. Standing next to each other, these buildings have no consistency of design relative to each other, either in shape or size, and their orienting angles are quite discordant, painting a pathetic and chaotic visual picture. It is as if structures were built merely to house people; no one seemed to care about aesthetics... or economics!

The colour combinations are also a free-for-all array of choices. The interplay of clashing colours can often repulse one's aesthetic sensitivities. Maintenance of these structures is another eyesore that screams a “third world” ethos. City planners, if there are any, need to be taken to task for the city they have helped configure. To me, personally, they deserve a failing (F) grade.

The most glaring problem, however, is that the buildings that have replaced greenery, especially the resplendent trees and their glorious foliage, and have rooftops that are for the most part starkly bare. The concrete sea that meets the eye absorbs solar heat or moisture that most assuredly affects the quality of life within these structures. In addition, the concrete mass assuredly affects weather patterns over the city, the after-effects of which are by themselves a subject of research that has seemingly received scant attention.

It is these expansive, empty, drab, useless, and eye-displeasing spaces that suggest the need to give serious attention to rooftop innovations. It is to be noted that in some European countries such as Switzerland, there are laws that require new buildings to be designed such that the green

space they occupy must be relocated to their roofs. For existing buildings, the laws require that at least 20% of the rooftops must be converted to green space.

Clearly, Dhaka's rooftops represent a great opportunity to bring significant change on a number of dimensions. As a collective enterprise, perhaps with the help of some legislation, it can improve the oxygen index, thereby contributing to human health. The kind of plants or foliage selected for nurture can contribute to visual beauty or even consumption needs, thereby reducing one's exposure to harmful injected chemicals that have disturbed the trust between consumers and the fruit or vegetable supply chain.

In addition, rooftop greens can lower air conditioning demand, thereby decreasing the production of greenhouse gas emissions and associated air pollution. They can also ameliorate the effects of air pollutants through carbon sequestration and storage.

Rooftop greening can certainly develop into a new and vast industry of horticultural products, tools and implements, a container industry, and advisory services that ought to have a sizeable impact on the economy. In addition, it could provide employment to a vast number of aspiring horticulturalists and entrepreneurs to build/nurture fascinating and innovative rooftop enterprises.

The really imaginative entrepreneurs could organise contractual agreements with a block of residents whereby each participating building could earn 25-40% of the revenues which could go directly to the pockets of the owners to supplement a variety of needs and enterprises.

If the government really cared, it could offer innovation awards for rooftop solutions by having designated blocks of households compete with each other. Such rewards may not flow to individuals, but winning blocks could be provide many collective benefits such as upgrading of schools, fixing potholes in the areas, providing increased security or traffic management, assuring health services and a plethora of additional benefits that the blocks may choose from or even be allowed to propose within a budgetary framework.

Additional innovations are certain to emerge -- from solar solutions to rain water harvesting and groundwater recharging, since the rainwater runoff from the rooftops can be quite substantial. The innovators may be given special awards and may even be provided technical assistance (perhaps in collaboration with technical universities, colleges, institutes and the like). In this matter, the involvement of educational institutions could be their differentiating mark of quality, adding realism, innovativeness, and practicum to their academic programs.

Dhaka City's rooftops also tell an interesting story about the City's residents. Either they are lazy, lack imagination, and don't really seem to care beyond their own sublime selves. Alternatively, the political-social system in which they are embedded – often mired in mean-spirited, corrupt, brutal, and insensitive pursuits – stunts and blunts the human spirit, thereby failing to spur imagination and creativity. Barring few, most people have to struggle so hard within an overbearing system that their rooftops fail to emerge as opportunities to do benefit to self and society.

Decidedly, this is a brief note on the prospects of bringing alive a sea of dead space in a variety of inventive ways. Details of how such efforts can bear fruit is not the purpose of this write-up. Rather, its purpose is to provoke human imagination at various tiers and layers of society for visionary exploitation of an opportunity in waiting.

It would be interesting to see if rooftop innovations catch on in some form or another. For example, discussion groups may emerge to take the idea further along. The government may begin to explore the contours of a bold step, e.g. come up with legislation to make at least 25% of “all” rooftops green. A pilot project may be initiated in a given area by a think tank or innovation lab with funding from relevant sources. Research institutions may start a buzz and bring various components together. If the idea takes off, the benefits can be immense. Importantly, Dhaka City will have shown the way to other burgeoning cities of how enlightened thinking can add to the quality of life of its residents.

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