

Hospitals must be in good health

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It is not uncommon in this city and elsewhere across the country to find agitated people vandalising a hospital premises following the death of a near and dear one. The feeling they got from the time they brought their patient to the hospital was one of inattention and callousness.

It is not uncommon for patients or their relatives filing court cases against hospitals for negligence. The impression they got was that the hospital should have done better.

It is not uncommon for our citizens to seek medical care in neighbouring India or the Far East or the USA. The sentiment is that our hospitals do not deliver or care.

Rarely, if at all, do we associate any of the above with the architecture of the hospital's built form and open area, if any. But, space and its dialogue with nature have a tremendous impact on the health of a person, ill or well.

While one has to admit that sans the privatisation of this sector the situation would have been terrible to say the least, the architecture of health facilities carried on with the diseases accrued in the public buildings.

Hospitals have become money-making machines so much so that investors in hospital business have been able to shovel funds earned from the health sector into other enterprises.

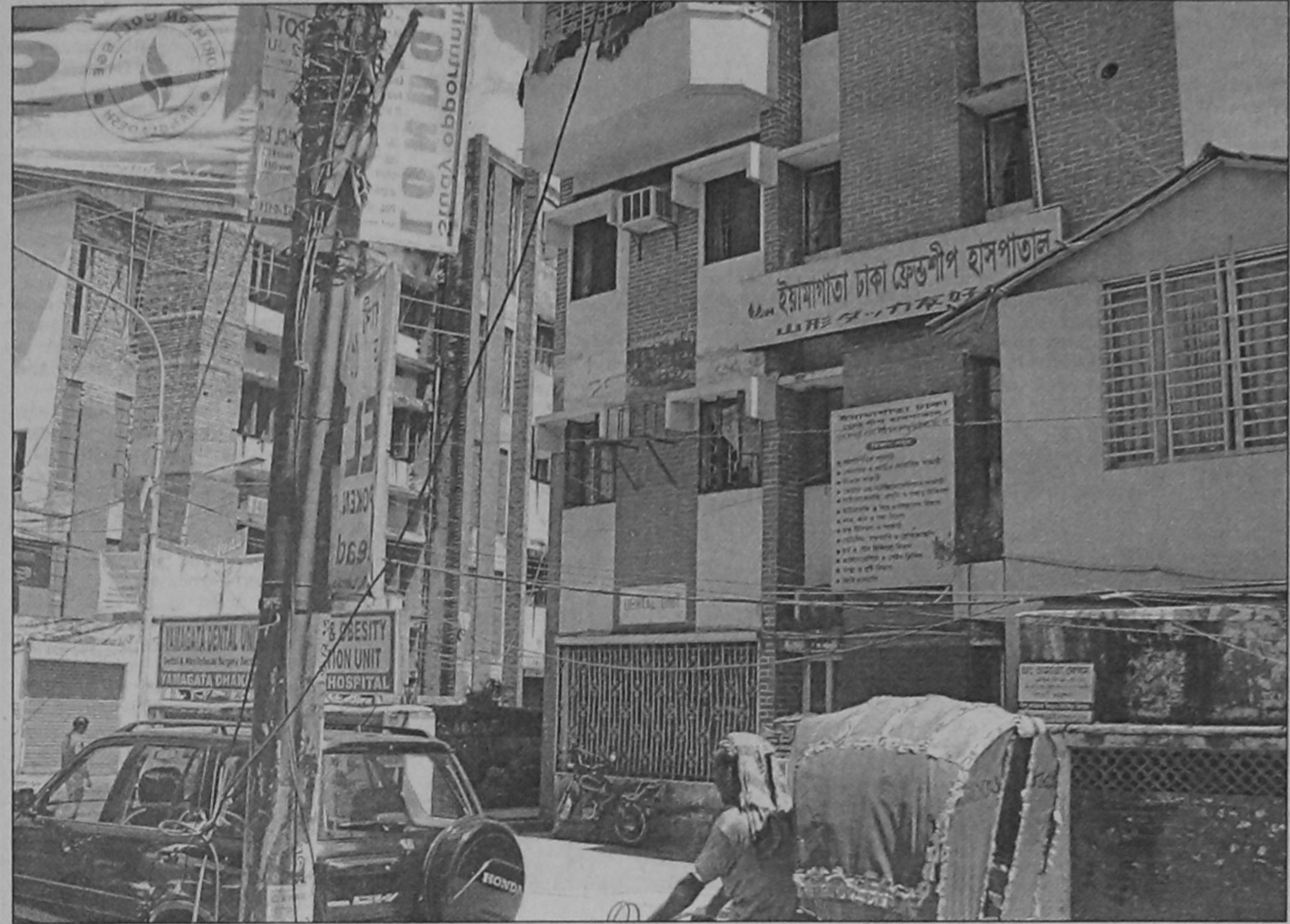
Today we present a scenario existing in hospital buildings in the city, based on a survey conducted by final year students of the Department of Architecture, BUET a few months back. All the buildings were designed as per the then effective Building

Construction Rules 1996, which had some special rules for hospitals. The survey unveils gross violation of rules, especially those pertaining to ratio between built area and open space, setback from property lines, means of escape.

Now that the Building Construction Rules 2007 require most buildings to leave fifty percent of its land free from construction, unfortunately above 10 metres in the case of commercial buildings, it is expected that hospitals will have no other option but to spare half their land as soak-able green.

Hospitals violating the 'half built-half open' clause of the 1996 rules should be given a time limit by RAJUK to look for new and appropriate premises, or to undertake appropriate constructions (after all it is a business), so as to offer healthy environments inclusive of fresh air and day-lighting to patients, many of who maybe yearning for that last gasp.

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Transformation of residence into hospital (not properly designed: Yamagata Dhaka Friendship hospital).

Sick hospitals of Dhaka city

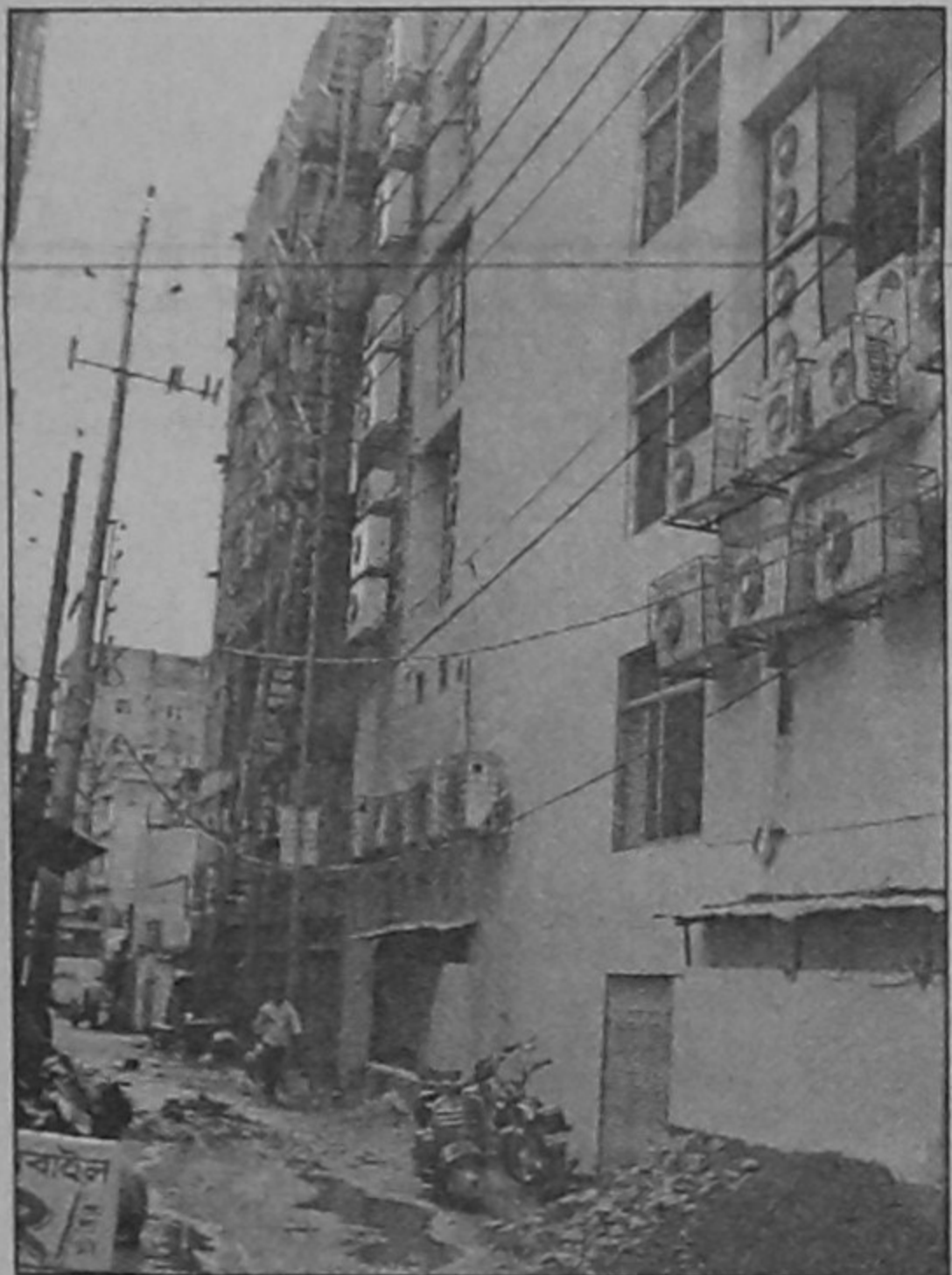
ASHIKUR RAHMAN JOARDER

HOSPITALS are places where people come to recover from serious illnesses. The patients' physical and visual environment has a direct relationship with the architecture of the building. So, the environment of hospitals should be of high quality to accelerate the recovery rate of patients.

People, whether healthy or sick, usually prefer to live in naturally ventilated buildings, with the provision of sunlight and pleasant views outside. People actually perform better when exposed to the outdoors. Daylight, along with fresh air, makes spaces enjoyable and comfortable for all patients.

Considering these factors, laws have been enacted by the city authorities to keep 40-50% of the land area as mandatory open (green) space for healthcare buildings. But most of the hospitals in Dhaka lack adequate open spaces; even the setback of the building from property lines are not actually followed.

Hospitals in Dhaka city are more a commercial venture than of welfare. They are planned and designed as typical commercial buildings on commercial sites, most often look like commercial buildings and ultimately totally rented and run as commercial spaces. As a result buildings are located as close as possible to property lines, resulting in lack of proper ambulance and vehicle manoeuvring area within the site. The essential parking is done on the adjacent footpath and the



No set back and no space between the structures (Galaxy hospital)



different types of indoor facilities are housed in a single building and the building is used by different types of people (doctors, staff, patients, visitors, etc) with different physical and mental condition. The design of the building (built environment and appearances) as well as the facilities (instruments and machineries and their maintenance) are important for providing healthcare.

Most of the hospitals and clinics in Bangladesh lack facilities for treatment, let alone proper built

and will invite innovative design solutions that encourage the use of smart technologies and provide high-added sustainable value to healthcare provision.

In Dhaka very little or no attention is paid to the design of healthcare buildings to fulfil the technical and functional requirements. As a result, not only the patients but also the visitors to the hospitals are liable to suffer from the poor conditions. Patients admitted to a hospital for treatment of a particular disease or illness sometimes develop other medical problems.

Good hospitals play a central role in reducing energy consumption, providing good views and interaction with the outside as well as limiting psychological and physiological stresses. But most of the hospitals in Dhaka are introvert in design compelling people to become totally isolated from the natural environment as soon as they enter into the building. Modern hospitals in Dhaka try to make attractive by use of artificial lighting and colour in interior and display of certain types of art work in the interior.

The design of a hospital should start with the selection of the building site but in most of the cases in

Dhaka, hospitals are situated in appropriate sites violating the zoning and other rules. A large number of hospitals are running now on renovated buildings that were actually designed as residential or commercial buildings. However, a good number have also been designed by local and foreign consultants. But in respect of merit the difference is insignificant in most cases. The facilities, costs and scale may differ from hospital to hospital in varying localities, but the quality environment should be ensured for all patients.

The final year students of Professional Practice of the Department of Architecture, BUET surveyed nearly fifty hospitals in Dhaka city in August, 2007 under the guidance of their course teacher Professor Dr. Nizamuddin Ahmed.

A summary of the findings are presented in the accompanying chart, using randomly chosen hospitals from those surveyed, so as to provide an overall situation prevailing in the city. The common problems identified by the students surveyors are:

- Inadequate open spaces even in the designed hospitals
- Violation of setback rules (dis-

Name of the hospital	Dhaka Orthopedic Hospital	Apollo Hospital	CRP	Upasham General Hospital	Galaxy Hospital (Pvt.) Ltd.	Special Care Hospital and Cancer Center	Pan Pacific Hospital Ltd.	Bangladesh medical college hospital	Ahsania Mission Cancer and General Hospital
Location	Mohammadpur	Bashundhara	Mirpur 14	North Badda	Mirpur- 10	Telgaon	Motijheel	Uttara	Mirpur- 13
Designed by	Non Architect	Architect	Architect	Owner	Architect	Architect	Architect	Architect	Architect
Year of construction	1982, as residential building		1999		1998	2007	1999	1998	1998
Year of commission	1996		2003		2006	2007	1998	2005	2002
Number of stories	4	12	13	4	8	6	5	16	6
Number of beds	12	350 of 450	61	9	30	28	60	125	32
Setback (distance from property line)	Violated	OK	Minimal	Violated	Violated	Violated	Violated	Minimal	Violated
Percentage of open space	Less than specified 11.7%	Less than specified 30%	Less than specified 25%	Less than specified 0.5%	Less than specified 6.5%	Less than specified 25%	Less than specified 20%	OK	Less than specified 7.13%
Number of basement floors	0	1	1	0	1	1	0	2	x
Use of basement floors	X	garbage disposal, workshop, store.	Parking, Generator room, Maintenance store	x	Parking, Generator room	Parking	x	01. Pathology lab, generator room, ambulance drop off, parking (not appropriate)	x
Separation of waste disposal system	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes
Method of Waste disposal	Municipality	Municipality	Self	Self	Municipality	self and Municipality	Municipality	self	self and Municipality
Parking (1 car for every 5 beds)	no parking	230 of 480 (ok)	35 (ok)	2 (ok)	5 (insufficient)	5 (insufficient)	6 (insufficient)	23 (insufficient)	2 (insufficient)
Number of stair	1	9	3	1	1	1	1	4 nos (1 service stair)	2
Number of lift	no lift	14	3	no lift	1 (bed lift)	1	1 (not have proper space)	6 nos (2 service lifts)	1
Manoeuvring of ambulance	No ambulance	Provided space for 2-3 ambulance	2 ambulances parking in the basement	Provided space for 1 ambulance	manoeuvring on public pedestrian.	+ Ambulance stop on the main entry	space for 1 ambulance	not appropriate	Ambulance manoeuvring area is on the road

* Period of survey: August, 2007

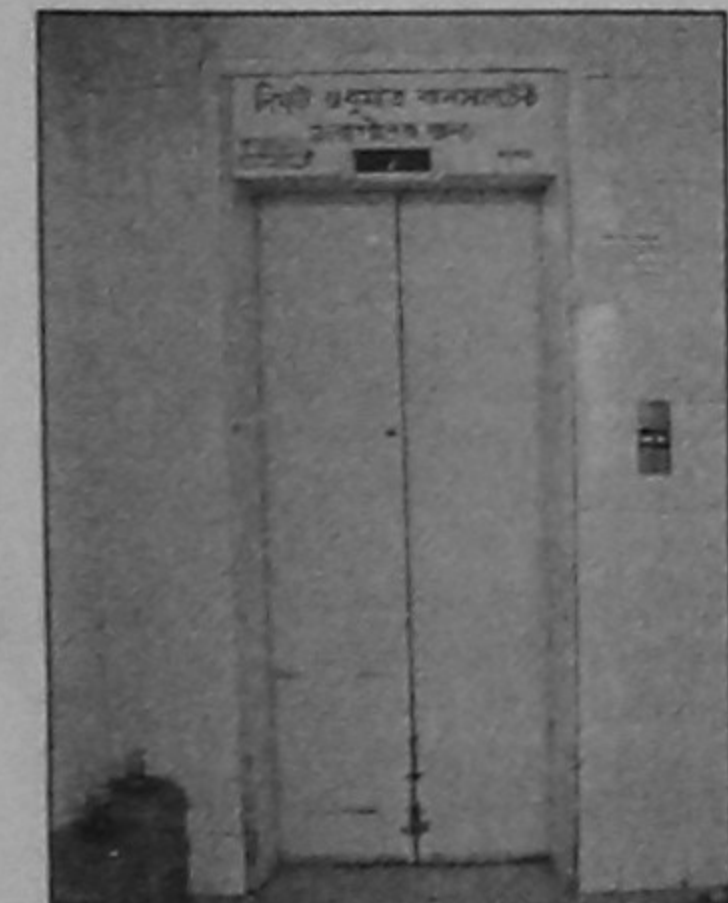
- Access of patients or physically challenged persons by ramp is not well designed
- Hospital design aims to generate appropriate architectural and/or technical solutions to achieve an enjoyable and productive built environment while simultaneously reducing the energy consumption of buildings. Daylight and naturally ventilated buildings will reduce construction, running and maintenance costs along with saving in energy demand. The designer of healthcare buildings in the city should change their notion regarding the environment of hospitals and should pay attention to building suitable interiors rather than focussing on the superficial outer glamour.
- Admittedly, hospital buildings

- need to be insulated to protect the sterile hospital interior from outer contaminations, and therefore designers are now stressing on artificial lighting and ventilations. Of course some spaces in a hospital require rigorous static environment. But it is not necessary for the entire building to be artificially controlled or at least artificially lighted during the daytime. Spaces such as dining room, exercise rooms, corridors, day room and even wards can be daylighted for the major part of the day.
- In general, there is a human need for daylight and there prevails a sense of disappointment when daylight and outer views are denied. Patients who have had greater access to nature have shown improved recovery rates. Therefore, the provision of win-

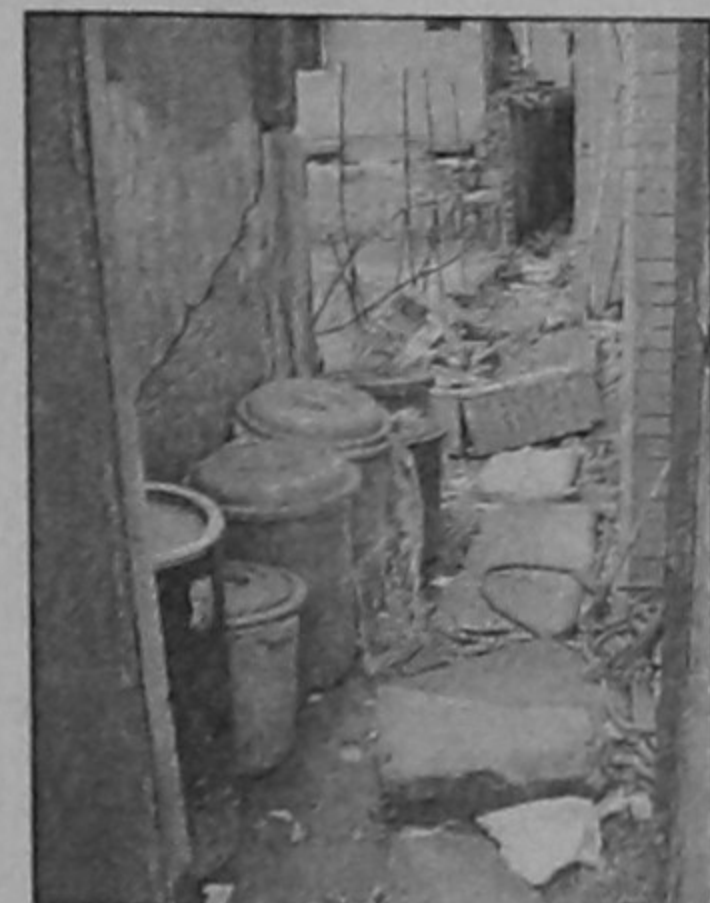
dows or views is advisable. To do this the location of hospital site with adequate land area and proper orientation is necessary. As technology improves, the hospital environment itself should contribute to the patients' recovery. Design of hospital buildings should be such that the building itself should serve as medicine.

The author is Assistant Professor, Dept of Architecture, BUET and a PhD student at Loughborough University, UK researching on the environment of hospital buildings.

Selected pictures are taken from the survey conducted by Raquib Al Hasan, Mouri Rahman, Nazil Hossain, Shahid Hasan, Md. Hasan Al Emtiaz Zafree, Mohataz Hossain, Md. Shamsuddin Ahmed and Sabrina Shafigue, and the chart is prepared by Apurba Poddar.



No other lift for carrying stretcher (Pan Pacific hospital)



Unhealthy environment (Japan-Bangladesh Friendship hospital)

abutting road, causing serious interruption to the regular traffic. Unfortunately, also from a commercial viewpoint, many of the multi-storied hospitals in the city have only one staircase in the building. In respect of fire safety such buildings are very unsafe, and being a hospital building they will be more vulnerable in case of any accident. Some hospitals are surprisingly running without any patients lift or have them in inadequate number. Often the lifts start from the first half landing of the staircase, which makes it inaccessible for physically disadvantaged persons.

Hospital buildings are one of the most complex types of facilities among built structures. Because,

environment. However, a good number of hospitals have grown up in the capital city Dhaka with modern equipments and facilities which claim good accommodation by offering air-conditioned space, television, refrigerator and other luxurious facilities with the indoor environment totally dependent on artificial energy. As energy is of paramount concern in the design and operation of healthcare facilities and maximum use of natural light is a key element in energy-saving strategy, it is expected that the design guidelines will optimise the use of non-renewable resources by energy conservation mechanisms with day-lighting and natural ventilation with protection from outer contamination and cross infection through openings



Ambulance parking on open street (Labaid Cardic)



Loading-unloading on the road side (Pan Pacific hospital)



Violation of parking rules (Islami Bank hospital)