The Daily Star

AGENDA FOR URBAN CONCERN

Dhaka, Saturday, October 7, 2006

Lasting modernism (not so Greek)

DR. NIZAMUDDIN AHMED

"The errors of master plans and regional plans are that they are two dimensional or, in the best cases, three dimensional. What we need are four dimensional programmes."

-- Constantinos A. Doxiadis, Jan. 1959

SOMETIMES we fail to comprehend what greatness has brushed our terrain, shaped our sense of aesthetics, groomed our design professionals and touched our soul. Such apathy to some of the biggest names in world architecture has been one of the banes of our cities and towns, of our buildings and parks (alas) that were. Constantinos Doxiadis is one such internationally acclaimed architect and urban planner who worked in the then East Pakistan, present Bangladesh.

One dares to say he is from Greece because he has roamed the earth and set his footprint, most often innovatively, on many a city, making him truly a global citizen

A soldier, an architect, an engineer, a planner, a teacher, a researcher, and an author on architecture, towns and villages, urban renewal, urban design, campus planning and urban crimes, Doxiadis' theory on ekistics (science of human settlements) revolutionised the concept of urbanization and helped to understand modern communities.

In Bangladesh his creations exhibit ample sensitivity to local climate, culture and scale; organising starkly simple edifices around a courtyard encircled by a covered corridor being his hallmark.

Architect Bayezid Ismail Chaudhury focuses on this gifted personality, whose handiwork remains as contemporary as they were half a century ago, so much so that younger users may confuse them to have been designed and constructed only the other day.

Today's issue is a tribute to the Greek, whose architecture is readable, down to earth and appropriate or, in other words, not Greek at all.

The author is Professor, Dept of Architecture, BUET and Consultant to the Editor on Urban Issues

BUET


TSC

The world of Doxiadis and Bagladesh

BAYEZID I. CHOUDHURY

"We must find the proper solutions for schools, for houses, for all the many kinds of buildings and functions, which constitute our total architecture. In the same way, co-ordination has to be achieved hierarchically, not only at the local, but at all levels regional, national and sometimes even international. In this way we can view our achievement within the larger framework of the world to which it belongs."

--Constantinos Apostolos Doxiadis

AN engineer, planner and an architect, Constantinos Apostolos Doxiadis tried to relate the work of an architect like a scientist and stressed the need for finding a system of thought, which can be implemented through a proper scheme globally. Doxiadis viewed architecture as a science of human settlements and denotes the interrelationship of man with his environment. He propagated the concept of "Ecumenical Architecture" or "Architecture for Mass People." His vision of architecture was global, though it may appear very rigid and stereotyped. C.A.Doxiadis was an architect from a diverse background; to him architecture is not a matter to be decided solely by the architect, but must be thought out in conjunction with many other people from different professions. He insisted to look at the architecture totally as "Total Architecture". His philosophies on total architecture, real architecture, standardisation, prefabrication, modular co-ordination, principle of law of expanding synthesis etc. reveal a philosophy, which he thinks would overcome all the constraints, and could be universal.

C.A. Doxiadis' principles regarding architecture are mostly functional. His approach towards standardisation, law of expanding synthesis, layering, repetition, four dimensional synthesis, ecumenical architecture, total and real architecture, architecture and science are not only thought provoking in terms of social and cultural value also support the constructional, functional and environmental factors. Taking human being as a source of design, Doxiadis designed his buildings in a universal approach and thus his architectural concept gave rise to vocabulary that seems fit anywhere in the world.

Doxiadis in his architecture tried to combine the different economic, social, political, administrative, technological and aesthetic forces in architecture. To him architecture is no longer a matter to be decided solely by the architect, but must be thought out in conjunction with many other people and co-ordinate with views from different discourses

"... We live in a developing world, and the only justification for architecture is its connection with the overall evolution of society. For out purpose we may define this as the expression of all the forces which influence the creation of buildings, bearing in mind that the architect is conditioned by economic as well as by aesthetic, by social as well as by technical, by political as well as by cultural considerations. "[2]

THE CONCEPT OF STANDARDISATION, PREFABRICATION AND MODULAR CO-ORDINATION

Doxiadis perceived architecture as a project rather than a process. This is why he visualised the need for standardisation in every element of construction. He believed that in this era of changing economy and technology, as well as a greater demand for quality, it is essential to standardise all elements of construction which are amenable to prefabrication, and thus to less expensive production. Accordingly, he prescribed standardisation, from the smallest part of architectural creation, that is the brick, to the major constructional parts such as doors, windows, panels, walls and even complete rooms, multi-rooms, parts of buildings etc.

He was also a propagator of prefabricated elements and realised that prefabricated elements can serve many purposes and perhaps solve many of our problems. According to Doxiadis ".... we can use prefabricated elements to create either the skin of our building or its internal parts; we can make them take the weight of construction, or simply constitute its surfaces, inside and outside the buildings.

Modular Co-ordination is a system by which achievement of dimensional co-ordination is attained by means of a module. The general purpose of the module is to provide a basis for the interrelated sizing of all building components, furniture and equipment, so that in respect of the dimensions, all components within the modular range may be assembled in all possible ways to achieve the desired result in a systematic, orderly combination with minimum modification of the standard components. Doxiadis proposed module was 40" or 1 Meter. Multiples of 40" modules have been found to be economically convenient for room sizes ranging from small spaces like toilets to larger ones like halls and theatres.

PRINCIPLE OF LAWS OF EXPANDING SYNTHESIS

Doxiadis developed a theory on law specifically applicable for public buildings where growth of community will have impact on the growth of the building. These buildings provide scope of addition of forms without giving a sense of incompleteness.

SYNTHESIS OF FORM, CONCEPT ON SKYLINE AND REPETITION

Most of the forms derived by Doxiadis are oblong. He used to avoid cylindrical or spherical forms. This concept derives from the thought that man lives and moves in spaces in certain straight lines and not in a circle and almost all elements within a house, such as beds cupboards. Armchairs, sofas, etc. are oblong.

"...It seems impossible to create an economically feasible synthesis of oblong elements within a circle or an ellipse." He said.

From the analysis of Doxiadis' buildings, the most significant feature that becomes visible is the disposition of blocks repeated over a large area, together with the multistory building in conjunction with domes and shells for special buildings. Thus the skyline crates an interesting array of silhouette.

Doxiadis stressed for a logical pattern of rhythmical repetition. Such a repetition is necessary for the rational formation of many arts of such buildings as schools, hotels, hospitals and private houses. Doxiadis realised that it is necessary for the improvement and standardisation of construction and for prefabrication. He also underscored the need of repetition as an essential part of aesthetic.

"...The fact that we are led towards similar solutions should not frighten us but should rather challenge us to create an architecture with its own character. "

ROLE OF ARCHITECT SUGGESTED BY DOXIADIS

According to Doxiadis an architect should resume his traditional role of master builder, as co-coordinator of all forces leading to the creation of the building, without limiting himself to the designing aspect of the creation.

Also an architect should certainly contribute, along with the traffic engineer, the economist or the urban geographer, to the understanding of the nature of the landscape. He believed the responsibility of the architect is to appraise the rising tide around him with an expert's eye and to try to regulate it, in order to help humanity.

CONCEPT OF SCALE, USE OF NATURAL ELEMENT AND LAYOUT OF BUILDINGS

Scale is an important achievement in his design. The over is the focus and supreme in his architecture. Spaces are never overpowering not even when designing an auditorium and such public spaces. By using shelf roof over such spaces, a unique and gradual blend is provided. The concept of shell roof is applied in the auditorium of Teachers Student Centre and Home Economics College.

Interaction with nature, strong indoor-outdoor relationship is very distinct in his project. Due to prolific growth of plants in Bangladesh, his entire project looks wonderfully landscaped and peacefully engulfed by nature. The conscious use of landscape gives a sense of tranquillity and harmony to all the projects designed by him. This integration is visible in all four of his local projects.

He invited light in a different manner, generally through wall penetrations, mostly located in the upper portions of external surfaces, sometimes through surface penetration form interior court. The extensive use of operable glass in remarkable, which represented modernity during the middle age of this century.

The planning background of Doxiadis helped him to perceive building forms and activity in a broader framework. The use of passage represents a street pattern. All the spaces and parts of the project can be reached by passages like the house in a city. These corridors are wide enough to work as promenade.

The most significant part of any project, designed by Doxiadis is the layout. They are beautifully integrated with the site. Mostly the blocks are arranged around open courts of variable size. The open green areas are well integrated with the corridors and useable spaces thus creating very pleasing environment.

CIRCULATION, STRUCTURE AND SERVICES

His approach to circulation was very straightforward. Usually linear, sometimes at perimeter circulation space connects different forms and defined spaces. The main circulation spine in the Home Economics College, Teachers Student Centre and Bangladesh Agriculture and Rural Development designed as liner circulation pattern, where as the classrooms of this institute are enclosed by loo circulation. The vertical circulation is usually located in clearly articulated towers. Some non-ending circulation provides an expression of future synthesis. This is visible in all the four local projects. He lags in strong structural concept and inconsistencies are revealed in different projects. The structures are mostly on columns, sometimes composite. Columnar structures are used to articulate spaces whereas wall structure is used to support the enclosed spaces. Services such as toilets and stairs are placed without any order, usually at the end of masses. Service spaces are never expressed formally.

DOXIADIS AND GLOBAL WORK

Doxiadis worked extensively in thirty-six countries across five continents. His works include a wide variety of housing, commercial and civic centres, institutional buildings, religious buildings etc. Doxiadis aimed at a very broad, preferably total solution, showing connection between nature, man, society, buildings and networks in his words, Ekistics.

INSTITUTIONAL BUILDINGS

His major works include the University of Punjab, Bangladesh Academy for Rural Development (Comilla), Polytechnic Institute of Pakistan as well as the Education Extension Centre (Rawalpindi), and Rural Teachers Training Home (Syria). The design of the Academy for Village Development (Rawalpindi) gives a sense of order with varied approach in design treatment. While designing University of Punjab he created a larger synthesis, which starts from the core and expands in all directions, while keeping the hierarchy of functions, and retaining all potentials of a living organism. The complex is composed of rooms connected by covered walkways with shifting axes. The skyline is broken with a series of vaults.

OTHER WORKS

Doxiadis has also to his credit the office of Doxiadis Associates, the theatre in Athens, the New Cathedral in Ethiopia, an apartment house in Athens, group housing in Baghdad, and the Korangi Master Plan (Karachi).

DOXIADIS' WORKS IN BANGLADESH

TEACHERS STUDENT CENTRE (TSC), DHAKA: The Teachers Student Centre was built in 1963 for 5000 students, which now serves around 30,000 students of Dhaka University. The purpose of the TSC was to evoke a sense of fellow feeling and fraternity among the students as well as teachers of Dhaka University.

The Centre has five main buildings consisting of Students Union Building. Auditorium, Cafeteria, Games Room and Guest House, it is an example of a natural, extroverted, and expanding, non-monumental synthesis. The synthesis is based on interconnected buildings. Homan scale has been applied in practical and aesthetic terms. A module of 3' was used as basic for doors and window panels. The unique feature of TSC is the blend of nature and environment. Open spaces are always integrated with circulation except the Students Union Building. Lush green space located by the promenade also works as a place to interact. The plinth of the promenade is also intuitively designed, used as a sitting space. The cafeteria and games room are skinned with wooden panel and glass. The folded plate roof helps to extend the span but limiting the height. The double roof of the Students Union Building expresses the significance of the function. From the user point of view it is a highly successful design.

NATIONAL ACADEMY OF EDUCATION MANAGEMENT, DHAKA: National Academy of Education Management originally established in 1959 as Education Extension Centre, aimed to improve the quality of education at school level and to enrich the educational program in secondary schools. A module of 3' is used in designing the classroom area. Classrooms are 400 sft., which is in accordance with the given standard for schools. The economic span of 20' as suggested by Doxiadis was not maintained here. Strong indoor and outdoor relationship is evident in this project. Open spaces are always integrated with circulation. Provisions are kept for future growth and expansion for classroom area. White colour coating used in all building appears very strong in contrast with the green setting. The use of white colour may be a reminder of Doxiadis image of his native buildings.

HOME ECONOMICS COLLEGE, DHAKA: The College of Home Economics, established in 1961, is the first of its kind in Bangladesh and is a purely Government professional institution for women. Architectural features are almost similar to other projects, except the lay out. The classrooms are arranged on the both sides of a central circulation spine in an order. Circulation spaces also used as tying element of different blocks. Classrooms are arranged alternately providing privacy to each. However, their entry is not treated properly as it lags in expression. The main entry of the complex is through a corridor space that links the administrative and auditorium complex. Mostly columnar and partially load-bearing structural system is applied in this complex.

BANGLADESH ACADEMY FOR RURAL DEVELOPMENT, COMILLA: Bangladesh Academy for Rural Development (BARD) located at Kotbari, Comilla was established in 1959 as a training institute to train government officials and representative of village organisations on subjects related to rural development. This is Doxiadis' biggest project in Bangladesh. A distinct difference is visible from other project in terms of circulation length and pattern. The planning is considered keeping the scope of future expansion for both the academic and residential section. The long circulation pattern with change of levels is a distinct feature of this complex. This is a perfect example of one of law of expanding synthesis. Classrooms are arranged in groups of two, flanked by circulation in three sides.

CONCLUSIONS

Examination of his projects, locally and internationally, it becomes clear that Doxiadis followed four tenets as a guiding factor of his design all over the world.

a.Human scale in practical and aesthetic terms

b.Economy in the utilisation of space

c.Economy in function and maintenance

d.Use off best possible microclimate.

Doxiadis in his entire project gave priority to these four tenets. The first there remain constant for projects around the world where the microclimatic aspect is applied according to need the form, planning and scale of his different projects located anywhere in the world such as Bangladesh, Greece or Ghana apparently seem similar. However this similarity in the true sense does not create monotony, as he was always conscious of the human element in his physical creations. Thus, he intelligently used the same element with wide variations and in manifold combinations, giving a sense of uniqueness to each structure. Elements like hemispherical shells, double roofs, corridors, etc. are used with variation in his complexes and thus produced a myriad of interesting silhouettes in the skyline.

Doxiadis projects are the outcome of a thoughtful choice of simple yet practical technology. He believed in collective consciousness in architecture and also realised the need to connect the local level with a broader one.

The author is an Architect and Assistant Professor. Dept of Architecture, Bangladesh University of Engineering and Technology


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Constantinos A. Doxiadis

Born 1913, to Apostolos and Evanthia (Mezeviri) Doxiadis, comes from a family that played an important role in the settlement of Greek war refugees in between the two World Wars. His father, a paediatrician, was Minister for the Resettlement of Refugees, Social Welfare and Public Health and organized many welfare services especially for children.

Graduated

Architect-Engineer from the Technical University of Athens in 1935, did graduate work at Berlin-Charlottenburg University and received the degree of Dr. Ing. 1936.

Military Service

Corporal, Artillery of the Greek Army (1940-1941).

Chief of the National Resistance Group "Hephaestus" (1941 - 1945).

Captain in the Greek Army at the time of Greece's liberation (1944 - 1945).

Died

June 28, 1975, after a long period of illness

Honorary Degrees

Swarthmore College Pa., U.S.A., 1962 (LL. D.)

Wayne State University, Mich., U.S.A., 1964 (D.H.)

Mills College, Calif., U.S.A., 1964 (LLD.)

N. Michigan University, Mich., U.S.A. 1965 (L.H.D.)

Detroit Institute of Technology, Mich., U.S.A.1966 (D.Sc.)

University of Rhode Island, R.I., U.S.A., 1966 (D.F.A.)

University of Pittsburgh, Pa., U.S.A., 1967 (D.Sc.)

The University of Michigan, Mich., U.S.A., 1967 (LLD.)

Tulane University, La., U.S.A., 1968 (LLD.)

Kalamazoo College, Mich., U.S.A., 1968 (LLD.)

Marietta College, Ohio, U.S.A., 1969 (D.Sc.)

Case Western Reserve University, Ohio, U.S.A., 1969 (L.H.D.).

Worked

Chief Town Planning Officer, Greater Athens Area (1937 - 1938).

Head, Department of Regional and Town Planning, Ministry of Public Works, Greece (1939 - 1945).

Taught

Lecturer and Acting Professor of Town Planning, Technical University of Athens (1939-1943).

Visiting Lecturer at the Universities of Chicago, Dublin, Harvard, Michigan, New York, Oxford, Princeton, Yale, Massachusetts and Georgia Institutes of Technology. Swarthmore and Trinity Colleges.

Professor of Ekistics at the Athens Center of Ekistics, Athens Technological Organization.

Served

Under-Secretary and Director General of the Ministry of Housing and Reconstruction, Greece (1945 - 1948).

Minister - Coordinator of the Greek Recovery Program and Under-Secretary, Ministry of Coordination (1948 - 1951).

Consultant

United Nations (Asian Highway; Housing in India and Algeria; Housing and Planning in Skopje, Yugoslavia).

Food and Agriculture Organization of the United Nations (Land and Water Use Survey, Kordofan, Sudan).

International Bank for Reconstruction and Development (Housing in Jordan, Syria and Venezuela).

Inter-American Development Bank (Development of the River Plate Basin).

International Cooperation Administration (Housing in Lebanon).

Agency for International Development (Housing in Karachi and Saigon).

Ford Foundation (Pilot Housing, Ekistic Training and Educational Buildings in (East and West) Pakistan, Lebanon, and Syria; Housing in Chile).

Redevelopment Land Agency of Washington D.C. (Urban Renewal, Washington D.C.).

Also worked in: Argentina, Bolivia, Brazil, Cyprus, Ethiopia, France, Ghana, Greece, Iran, Iraq, Italy, Libya, Paraguay, Saudi Arabia, Spain, Uruguay and Zambia.

Awarded

Sir Patrick Abercrombie Prize of the International Union of Architects (1963).

«Cali de 0ro» (The Mexican Gold Medal) Award of the Society of Mexican Architects (1963).

Award of Excellence, Industrial Designers Society of America (1965).

Aspen Award for the Humanities (1966).

Decorated

Greek Military Cross, for his services during the war 1940 - 1941 (1941).

Order of the British Empire, for his activities in the National Resistance and for his collaboration with the Allied Forces, Middle East (1945).

Order of Cedar, Lebanon, for his contribution to the development of Lebanon (1958).

Royal Order of the Phoenix, Greece, for his contribution to the development of Greece (1960).

Yugoslav Flag Order with Golden Wreath (1966).

(Source: EKISTICS, vol. 62, 1995)