

## Seminar Session S-1

### WELCOME ADDRESS

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Holding of a seminar in Calcutta on civil and mechanical engineering, engineering materials, tools, appliances etc. needed for urban renewal projects is appropriate, timely and most welcome, as it deals with some of the urgent problems related to urban development, of which the Calcutta Metropolitan Area happens to be typical specimen.

Urbanisation all over the world has been a part and parcel of economic development. And yet, economic planners have paid surprisingly little attention to the phenomenon of urban explosion. In India, economic planning has been from the very beginning an exercise in trial and error as the changing priorities from plan to plan and even during the same plan would show. The planning machinery in the States and the Centre were inexperienced. Controversy lingered about the demarcation of sectors between Public and private enterprise in a mixed economy. Our country, apart from the agricultural deficits and wellknown poverty, has also suffered from maldistribution of wealth both in the shape of industrial resources as well as in the shape of its limited exploration and marketing of the end products. Now one may say that the Central Government, has

been principally responsible for this maldistribution of wealth because it could not make enough programmes either in the public or in the private sector for exploration of the natural resources in the backward areas of the country, as well as could not see to the distribution of the wealth which were thus gained by additional products from whatever extractions were done so far either by suitable movement of population or by a suitable employment or consuming pattern. The country is now trying to rectify this. But meanwhile quite a lot of mischief has already been done under pressure of industrial bosses as well as the political leaders over the last two decades. Examples may be cited of the untold mineral wealth available in Orissa and Madhya Pradesh region which have remained comparatively unexploited so far, because neither the Public nor the Private sectors with their headquarters in Bombay, Delhi and Calcutta were interested in exploration of these remote areas. It has also been unfortunately noticed that wherever large public sector undertakings have been sited they have not necessarily brought any addition to the wealth of the local people. This is a curious factor but has been established finally and economically by more than

one survey all over the country. Let us take either sides of spending guidance and industrial policy formulation. For instance, the Eastern Region of the country has the talent, finance and tradition for the development of the chemical industry. But the Central Government, as a matter of policy, discouraged this over two decades resulting in the diversion of resources to the Western Region on the ground that they did not have the natural advantages of iron and coal resources, as were available in the Eastern Region on which Engineering Industries have been built up. One could understand this if there were no pool prices of coal, iron, petrol etc. adjusting the unequal freight charges payable by users in different parts of the country. These pool prices have been so worked out that the main argument underlying this discrimination on a vast scale of potential investment has become meaningless. Here, it is again a case of similar imbalance discernible in the Industrial Policy. Similarly, the location of headquarters of all India financial institutions in the western city of Bombay have naturally led to difficulties in mobilising financing assistance for development projects in other regions. There has, of late, been realisation of this problem and remedial measures have been initiated. Another fact of planning between the Central and State sectors has been that the Centre has so far tried to lay down certain guidelines for projects mainly in social services, education, medical service etc., as on fixed patterns or yardsticks on which the whole country has to be developed, irrespective of the local talents available to man them. The result has been a large disparity in regional development over the last two decades.

However, leaving aside these angularities of economic development which are now being straightened at the highest level under pressure from the different parts of the country, we notice a direct result that has emerged out of these development plants over the last 18/19 years. We have the picture of a very rapid urbanisation of not only the existing cities but also urban explosion in and around the large centres of industries mainly steel, engineering, mining, heavy machinery, chemical and power projects. This is an inevitable consequence of development in any poor country because of the great disparity in the amenities available in the urban centres compared to the rural ones. For instance, in our own State of West Bengal today, while most of the urban areas are electrified, out of approximately 38,000 villages not even  $\frac{1}{4}$  is electrified although we have spent more than Rs. 100 crores in capital investment on power in the public sector alone and are spending at the rate of Rs. 25 crores a year on the annual works budget. For supply of pure drinking water, our effort is more miserable than in the sphere of rural electrification. Naturally, one can visualise that schools, colleges, hospitals, libraries, etc, set up in rural areas cannot be manned and maintained properly in an atmosphere where the basic amenities of power and water supply, not to talk of drainage, sanitation etc., are absolutely lacking. As a direct consequence thereof the urban population is multiplying at a rate much faster than the rate at which the basic amenities of urban life can be provided. This is exactly what we see in and around the Calcutta-Howrah industrial belt today. The civic authorities and the State Governments are

incapable of providing the basic minimum amenities required for urban living by any standard in respect of water supply, sanitation, power supply, normal amenities like hospital facilities, educational facilities, cultural guidance centres, etc. Therefore, we have a picture of heavy backlog to be made up as quickly as we can if we do not want our urban centres to completely breakdown.

Let us pause and look into the background of this state of affairs. Over the last one century people have been lured into the city life by employment possibilities offered by employers who have invested in industries based on jute, iron, coal, engineering, fabrication, chemical plants etc., besides Government activities like the Railways, Port Commissioners and the State Governments. Do these employers have a responsibility to the society to see to the provision of these basic minimum needs of life or do they not? Everybody knows that cheap labour has been the backbone of our industries and it has not changed even during the post-war period when there were plenty of opportunities for the employers to go for modernisation and concentrate on skilled and highly paid labour force instead of engaging rural migrants as coolies and ordinary labourers. The Employers certainly have done well over the last two decades if the public accounts and the taxation figures are any guide, but how much of this has gone into the provision of these basic amenities? I hope people will be more conscious about this aspect now and the leaders of industries, commerce and Government must put their heads together and see how they can face this challenge and contribute their mite to this pool of efforts immediately necessary for saving a vast

percentage of the urban areas from total disintegration. Now the punishments are visible in ugly shape when employment is slakened and the army of the unemployed expands. The affected population do not leave these places and areas and just go back to the villages or vanish in thin air. No, they remain very much in this urbanised dense pockets and create social troubles of great magnitude which I need not discuss as they are too visible today in and around this part of the country. Are we not spending large sums of money and employing large number of men in merely combating these social problems facing us? Is it not time to think of the more deep-rooted trouble and go for these even at a higher cost?

Now coming to the problems of urbanisation and these backlog of amenities, a very major effort in the industrial field mainly involving engineering construction works is not only in sight but has to be faced now with great degree of boldness and calculation to see us through. The C. M. D. A. has already been set up and funds provided for it to tackle the great tasks ahead in this area initially. As we see it today, money is not the main problem but men and material and marshalling of these into the useful tools, instruments and labour are going to be the biggest challenge before us. We need machines for building, machines for digging, we need bulldozers, concrete mixers, spun pipe etc. On a very vast scale by concentrating a major effort, if anything is to be achieved in a reasonable degree and time. I, therefore, wish every luck and success to this seminar where matters concerning these will be discussed and I am sure they will be able to lay down the methods of app-

roach, to calculate the requirements and to get people interested in making them available in the time they want for such a massive effort of welfare effecting not merely this industrial belt but its whole hinterland of 1,50,00,000 people.

I would request all to consider the problem of unemployment in the State and make our deliberations labour-oriented as far as possible and suggest measures which will

help in combating this also—at all levels.

Great stakes are involved in this effort and these cannot be calculated in terms of profits and losses only and here is a challenge before our Engineers and Entrepreneurs which I am sure they will face boldly.

I wish all success to this Conference and thank the organisers for the effort and also for allowing us to participate in this.

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## Papers for Session S-1

1. Precast Concrete—the Building Material of the Day by Dr. **K K. Banerjee**, Professor, Bengal Engineering College.

Although the history of concrete dates back to the Egyptian time, precast concrete is a recent development and is considered as the most versatile building material at the present time. In advanced countries precast concrete components are produced in mass in the factories thus saving in material, cost and time of construction for buildings and bridges. Most up-to-date knowledge in cement and concrete is being utilised and various types of cement and aggregates are employed. Various types of machines and equipment have been developed for the precast concrete industry. Particular attention has been very recently paid in producing lightweight concrete products so as to reduce handling, transportation and erection cost, which account a considerable proportion of the total cost.

Unfortunately in India large-scale use of precast concrete is not made but only a beginning has been made. Neither various types of cement nor sophisticated equipment are available. The Experimental Building in precast concrete has been particularly built at the Bengal Engineering College to explore possibilities in this direction under typical Indian conditions that exist today. However, it is believed that with gradual and increasing use of precast concrete in buildings much of the draw back that exist will be overcome.

It is emphasized that only precasting of buildings can cope with shortage of material and the unusually long period of construction time.

[ The lecture was illustrated by slides ]

2. Production and Inspection of Rail road Rails by Sri. **S. K. Lahiri**, Director, Indian Standards Institution.

The process of making steel and roll-