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SPEECH BY MR S DHANABALAN, MINISTER FOR NATIONAL DEVELOPMENT
AT THE SINGAPORE CONTRACTORS ASSOCIATION LTD'S ANNUAL DINNER
1988 AT ISLAND BALLROOM, SHANGRI-LA HOTEL ON THURSDAY
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The construction industry in Singapore has weathered many changes in recent years. It had about four very good years in the early eighties. Our construction capacity was stretched at that time. The volume of construction orders for 1983 reached an unprecedented \$9.6 billion. I was told that during those years, a developer with a \$60 million project considered himself fortunate if four contractors tendered for his project.

When the recession hit us in 1985, the volume of construction orders plummeted to \$3.9 billion in 1986, 40 per cent of what it was three years earlier. Suddenly, it was not unusual for as many as 40 contractors to scramble for a \$10 million project.

The recession significantly transformed the construction industry. Construction firms began to diversify. Some of the larger firms started to look seriously into exporting their services. Overseas construction projects now bring in \$300 million to \$350 million worth of orders annually. The medium sized and smaller firms, on the other hand, have diversified into maintenance and retrofitting work - a sector which grew by an average of 10 per cent a year since 1985 to \$842 million last year. These are changes for the better.

The recovery of our economy over the last year or so has spurred a rise in construction orders from the private sector. Based on preliminary projections, the total value of major projects which are scheduled to come on stream over the next five years is estimated at \$13.5 billion. So things are looking up.

There is one valuable lesson we have learned from the recession. Our survival is guaranteed only if we continue to be cost competitive.

Towards this objective, the Construction Industry Development Board (CIDB) is at present undertaking a study to examine the cost competitiveness of the construction industry compared with other countries. The study will make a review of the entire construction process - from planning and building regulations right through design practices to the way construction operations are undertaken on site. I am glad to note that this study is a joint effort with representatives from the industry as well as major government departments and statutory boards.

The interim findings of the study have revealed a number of important points. The CIDB study team found, for example, that in Perth the cost of building materials are on the average 160 per cent higher than that in Singapore and construction wages are between 400 per cent and 500 per cent higher. Yet the unit construction costs for luxurious apartments, offices and hotels in Perth are only between five per cent and 16 per cent higher than corresponding costs in Singapore. Again in Dallas, the costs of building materials are, on the average around 80 per cent higher and the wages are nearly 600 per cent higher than Singapore. Despite this, the unit construction costs of luxurious apartments, offices and hotels are only between six per cent and 15 per cent higher than Singapore.

Material and wage costs comprise the bulk of construction costs. Despite their higher material and wage costs, the construction costs in these countries are only marginally higher than ours. We must, therefore, be using materials and labour very inefficiently. We must examine the underlying reasons in order to improve our competitiveness. Admittedly, because we are a small country, our construction industry is small, compared with that of the United States or Japan. Consequently, we do not enjoy the economies of scale that consultants and contractors in these countries do. However, there are other more important reasons that we need to address.

We must improve our design practices. We must increase the use of standardised and prefabricated components, adopt more efficient building shapes, make more efficient use of building space to minimise neutral areas and circulation space and use more innovative, more efficient structural designs. Let me briefly illustrate the need for standardisation before I move on to construction management and labour productivity which are of more concern to you.

In cities like Copenhagen and Helsinki, between 75 per cent and 90 per cent of the structural components in a typical building are standardised and prefabricated. On the other hand, in Singapore, standardised and prefabricated components account for only 10 per cent of the structural components of a typical building. As a result, their construction costs are only around 90 per cent to 100 per cent higher than ours although the wage levels in Denmark and Finland are more than 700 per cent higher.

In construction management, there are three areas where we can improve.

The first of these is construction planning. The study has shown that better planning can result in the

elimination of unnecessary operations, the reduction of idle time and the faster completion of projects. The benefits of construction planning are well illustrated by a study of two similar projects which are currently being undertaken by two different contractors. They are now half-way through their projects. The contractor who had made the effort to plan his activities carefully and systematically has already attained a two-month lead over the second contractor. In another case study, it was found that labour idle time was reduced by as much as 80 per cent through improved scheduling of tasks and the delivery of materials.

The second area we must tackle is the control of material wastage. The experience of the Japanese and other leading international contractors have shown that a proper system of wastage control can result in a savings of as much as three per cent of the total project cost. Local contractors typically allow between four per cent and 12 per cent for wastage arising from improper storage, faulty handling and the uneconomical use of materials. I am told that Japanese contractors in Singapore are able to work within a figure of two per cent. The techniques involved are not difficult to follow. The larger local contractors are beginning to pay more attention to wastage. More can be done in this area.

The third area is in mechanisation. Although our construction industry has made significant strides in mechanisation over the past decade, there is still scope for improvements in productivity through the use of computer aided planning systems and the automation of simple operations such as spray finishing. The CIDB's study noted that the effects of mechanisation are mainly felt among projects undertaken by the larger contractors. Prefabricated construction methods are still not widely used.

Another sobering observation is in the area of productivity and skill of our workers. For example, the study revealed that a bricklayer in Sydney is able to lay about 650 bricks a day. Our bricklayer can only manage about 500. Besides, the quality of workmanship is higher in Sydney. This can be attributed to the better training the tradesmen receive.

Because of the traditional reliance on foreign workers, the industry had not paid much attention to the training of workers. In the years ahead, as our labour costs rise, our construction industry must be able to take the same track as that taken by countries with high labour costs. This requires a constant review of the construction process and the upgrading of our workforce. CIDB's initiatives to improve the level of skills among our construction supervisors and tradesmen are timely. I would also like to commend your Association for its efforts in conducting courses for contractors to upgrade their management skills in construction. We must sustain the efforts towards higher productivity and quality.

The study team also noted that some government procedures, building regulations and statutory requirements could be revised to reduce building costs. Procedures relating to development charges, amalgamation of state land with private development and provisions for car parks in commercial buildings are examples of procedures that have contributed to higher construction costs in Singapore. All these need to be examined and improvements have to be instituted.

A start is being made with car parking requirements. URA's car parking requirements for buildings are an important part of Singapore's land transport policy. The objective is to provide adequate parking facilities to obviate the need for roadside parking which reduces road capacity and causes

traffic congestion. However, URA is mindful of the impact of car park provisions to building costs and has been constantly monitoring the demand for car parks in buildings. URA has completed a review of car parking requirements. I am pleased to announce that URA has decided to revise downwards its car parking requirements for office and hotel developments. The details of this revision have been released to the media.

The study team will be making recommendations and proposals on how to improve our cost competitiveness in particular and the construction industry as a whole. I would like to invite your Association to participate actively in the implementation of the recommendations.

I want to emphasise this because you represent the management. Management has the most important and decisive part in the programme to improve our construction industry.

Quality suffered in the early years when the HDB had to quickly build a large number of flats. Construction management, supervision and quality control were left very much to the contractors as the HDB's own management tried to grapple with the volume, which was two to three times what HDB could handle. Now that HDB's construction programme has fallen to a more steady pace, HDB's staff have been able to pay greater attention to building design, to upgrading construction management and techniques and to closer supervision of contractors.

The result is a dramatic improvement in design and workmanship with only a marginal increase in cost. The quality of workmanship in the new flats in Yishun and Pasir Ris are better than that in private housing estates.

Why are the same contractors with the same workers now able to build much better HDB flats? The answer must surely lie in better supervision, better building design and

techniques and in better construction management. With changes in these areas, HDB has been able to achieve a very marked improvement in workmanship even with a construction workforce that does not have the skills and experience of workers in other countries.

By upgrading construction management, HDB has also found that contractors can reduce construction costs through higher labour productivity, less construction wastage, less rectification work and shorter construction time.

In HDB construction sites, the wastage of materials has been reduced from 3.3 per cent of total construction cost in 1986 to 1.5 per cent. Productivity has also gone up by as much as 15 per cent since 1984. Private developers will do well to learn from the HDB's experience.

I am sure that with better management and training our workers will achieve the skills to help the construction industry improve its competitiveness not only locally but also internationally. If we train our workers to develop better skills, if we instil in them pride in their work and if we manage them so that they are motivated and more productive, I have no doubt our construction industry will become a worthy example of our aim for excellence.

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