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**SPEECH BY MR ABDULLAH TARMUGI  
MINISTER FOR COMMUNITY DEVELOPMENT  
AND MEMBER OF PARLIAMENT FOR BEDOK GRC (SIGLAP)  
AT THE LAUNCHING CEREMONY  
FOR THE OPERA ESTATE DRAINAGE SCHEME  
ON SATURDAY 28 SEPTEMBER 1996 AT 11.35 AM  
OPERA ESTATE PRIMARY SCHOOL**

It gives me great pleasure to address this gathering of the residents of Opera Estate, grassroots leaders and the staff of the Ministry of the Environment. We are here today to launch the Opera Estate Drainage Scheme.

The Government spends about \$70 million a year to improve the drainage infrastructure of the country. The Opera Estate Drainage Scheme is part of this ongoing drainage programme of the Government. It is estimated to cost \$46 million and will be fully completed by year 2000. This is a comprehensive and massive drainage programme for Opera Estate.

Why is such a programme for the estate necessary?

Opera Estate is flat and low-lying. The existing drainage infrastructure, put in place in 1960's in conjunction with the development of the Estate, has to convey the storm flows into the sea against the influence of the tide. Thus, if there is rain during high tide, flooding would take place.

Most of the flooding in the Opera Estate occurs in the areas bounded by New Upper Changi Road, Fidelio Street and Dido Street and also Carmen Street, Carmen Terrace and Lakme Terrace.

What has been done by the Government so far and what has got to be done to alleviate flooding in these areas?

Over the last few years, the Environment Ministry has been carrying out some small-scale improvements to the drainage infrastructure in and around Opera Estate. A brickwall was constructed in a roadside drain along Upper Changi Road in 1991 to hold back storm water and reduce its discharge flowing onto the Opera Estate Outlet Drain. Improvement works to the entrance culverts in various parts of Opera Estate were carried out in 1993. The roadside drains in Fidelio Street were also reconstructed in 1994 into a wide covered drain and the damaged outfall of the Opera Estate Outlet Drain was reconstructed in July 1996.

Engineers in the Drainage Department of the Ministry of the Environment have told me that implementing a comprehensive drainage attenuation scheme for Opera Estate is an engineering challenge because of three reasons:-

- i. There is not much space to enlarge the main canal. It runs in between two rows of houses at several locations.
- ii. The terrain is flat and low-lying.
- iii. The soil condition is poor; mostly marine clay. This makes construction work very difficult.

The Environment Ministry has now boldly taken on this formidable challenge to resolve the problem by embarking on a massive, comprehensive and quite unique flood attenuation scheme.

As it is not possible to enlarge the outlet drain to the required size for alleviating floods without acquiring and displacing a large number of houses in the estate, the Environment Ministry has come up with a proposal to impound the stormwater in an underground pond and then pump it into the main canal. This, by the way, is a first for Singapore. By detaining the stormwater, it is possible to control and regulate the rate of flow in the canal. Conscious of the need to be extra-prudent in taking up land for their projects, the Drainage Department's Engineers have conceived the idea of building an underground storage tank in the Opera Estate Primary School field. Upon completion of the work, the land above the pond can be used again by the School.

I commend the Engineers of the Drainage Department for coming up with this innovative solution. It had taken some time for the flood alleviation project to be finalised because of the technical problems mentioned earlier and the options that had to be explored to arrive at a solution that would be effective and yet affect the least number of properties.

Over the past few years, the government has upgraded old HDB flats to enhance their value and to create a more beautiful and clean environment for the people. The government, however, has not forgotten the residents in the private residential estates. Though we are unable to do something similar, like adding a room or a lift landing, we are always looking for ways to improve your environment and living conditions. When the whole project is completed, Opera Estate will have an adequate and structurally safe drainage system. The entire

Opera Estate Drainage Scheme will be completed by the year 2000. I am told that the reconstructed drain will be covered and turfed over to create more green space in the area. Private property dwellers will also thus benefit from government's investments in infrastructure.

Let me at this juncture express my appreciation to the residents of Opera Estate for coming this morning and I thank you for your patience and understanding all this while for the inconvenience the flooding has caused over the year. I also seek your understanding and tolerance for the inconvenience that you would have to put up with during the drainage construction work. It is inevitable but the Environment Ministry will try to keep it to the minimum. Your understanding and co-operation will definitely contribute to the successful completion of this drainage project so that the flooding problem in Opera Estate will become a thing of the past.

The launch of this drainage scheme in the Opera Estate area is another landmark in the Government's ongoing effort to enhance the environment and the quality of life of the people of Singapore.

Ladies and gentlemen, it now gives me great pleasure to launch the Opera Estate Drainage Scheme.

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