For information **PWSCI(2001-02)20**

NOTE FOR PUBLIC WORKS SUBCOMMITTEE OF FINANCE COMMITTEE

Supplementary information on school projects

INTRODUCTION

When Members considered papers referenced PWSC(2001-02)33, 34 and 35 on seven primary school projects (as listed in the Enclosure) at the Public Works Subcommittee meeting on 31 May 2001, the Administration undertook to provide information on -

(a) the typical percentages of construction and demolition (C&D) waste disposed of at landfills for various types of school projects;

(b) a comparison of the school projects under PWSC(2001-02)33, 34 & 35 against such typical figures;

(c) the notional cost of accommodating C&D waste arising from these school projects at landfills; and

(d) the noise attenuation factor of the solid boundary wall for **282EP**.

THE ADMINISTRATION'S RESPONSE

2. A survey carried out by the Environmental Protection Department (EPD) between September 1999 and January 2000 on different sectors of the construction industry indicated that, with proper sorting, the C&D materials generated from construction sites could be segregated into three categories with the following average percentage share -

(a) reusable materials (25%);

(b) materials which could be used as fill in public filling areas (59%); and

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(c) non-reusable materials (i.e. C&D waste) which are only suitable to be disposed of at landfills (16%).

3. These findings were brought to the attention of the Legislative Council Panel on Environmental Affairs on 7 November 2000.

4. As compared with engineering projects, building projects use a wider variety of materials. C&D materials generated such as packaging materials, bamboo scaffolding residue, wastes from temporary works or in-situ fabricated works are neither reusable/recyclable nor suitable as fill in public filling areas. As a result, these projects generate a higher percentage of C&D waste to landfills than the industry average of 16%. Furthermore, depending on the nature of works involved and the site conditions, the amount of C&D waste generated also varies. For example, if demolition work is required, the large amount of building debris[1] generated will increase the percentage of C&D waste to be disposed.

5. The estimated amount of C&D materials generated by the seven school projects in question and the amount of C&D waste to landfills are tabulated below. Average figures for new school projects[2] which Architectural Services Department has undertaken in the past are also included for reference.

Project No.	**Total C&D materials generated**	**Amount of C&D waste disposed of at landfills**	**% of C&D waste disposed of at landfills**
Reference project	2 350 m^3 - 3 150 m^3	400 m^3 - 600 m^3	17% - 19%
15EA	1 250 m^3	185 m^3	15%
16EA	6 500 m^3	1 000 m^3	15%
291EP, **280EP**, **282EP**, **283EP** and **285EP**	2 750 m^3 (for each school)	500 m^3	18%

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[1] These normally include timber from joinery fittings, doors, frames and notice boards; carpet; PVC floor tiles and mineral fibre based ceiling tiles; PVC pipes; venetian blinds; glasses and rubber gaskets; etc.

[2] Based on the average amount of the C&D waste produced by the 21 school projects (including both primary and secondary schools) of the Year 2000 design completed in the year of 2000.

6. **15EA** involves the demolition of a small school administration building and the construction of a small 9-classroom extension. The estimated amount of C&D waste generated is therefore less than that of a typical new school.

7. **16EA** is a bigger redevelopment project. The complete demolition of an entire school structure and the construction of brand new school premises will generate a larger amount of C&D waste than that of a typical new school. The percentage share of waste among the increased amount of C&D materials generated will however remain in line with the overall industry average.

8. **291EP**, **280EP**, **282EP**, **283EP** and **285EP** all involve the construction of new school premises. Despite the relatively small amount (500 m^3) of C&D waste generated from each project, for reasons given in paragraph 4 above, the 18% C&D waste to landfills is still higher than the industry average.

9. The notional unit cost[3] of accommodating C&D waste at landfill sites is \$125/m^3. Thus, the respective notional cost estimates[4] of the following projects are -

Project No.	**Notional cost of accommodating C&D waste at landfills**
15EA	\$23,125
16EA	\$125,000
291EP, **280EP**, **282EP**, **283EP** and **285EP**	\$62,500 (for each school)

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[3] This estimate has taken into account the cost for developing, operating and restoring the landfills after they are filled and the aftercare required. It does not include the land opportunity cost for existing landfill sites (which is estimated to be \$90/m^3), nor the cost to provide new landfills (which are likely to be more expensive) when the existing ones are filled.

[4] The notional cost estimates are for reference only and do not form part of the respective project estimates.

10. On the issue of noise attenuation, the 2.5-metre-high solid boundary wall for **282EP** can reduce the noise level of the teaching rooms on the first, second and third floors by one to five decibels depending on the orientation of the rooms and their distance from the boundary wall. As a result, noise level of these rooms will be brought within the acceptable noise criterion of 65 decibels. The wall will also reduce traffic noise at the ground floor playground by up to seven decibels.

Education and Manpower Bureau
June 2001

Enclosure to PWSCI(2001-02)20

List of school projects discussed at 31 May 2001 PWSC meeting

Paper no.	Project no.	Project title
PWSC(2001-02)33	**15EA**	Extension to St. Mary's Canossian School at 162 Austin Road, Kowloon
PWSC(2001-02)34	**16EA**	Redevelopment of the former premises of the Church of Christ in China Chuen Yuen Second Primary School at Sheung Kok Street, Kwai Chung
PWSC(2001-02)35	**291EP**	Primary school in Area 111, Tin Shui Wai
	280EP	Second primary school in Area 111, Tin Shui Wai
	282EP	Primary school in Lam Tin Estate Redevelopment, Kwun Tong
	283EP	Primary school at Kai Yip Road, Kowloon Bay
	285EP	Primary school at Kai Yan Street, Kowloon Bay