

Corresponder for HZMB project

Kong, Terence

From: Chan, Dulcie
Sent: Monday, November 19, 2012 4:07 PM
To: Kong, Terence
Subject: FW: Possibility of Reusing C&D Materials to be Generated from WKCD Project

FYI

From: Liu, Benny
Sent: 18 June 2012 17:17
To: Chan, Dulcie
Subject: FW: Possibility of Reusing C&D Materials to be Generated from WKCD Project

From: Liu, Benny
Sent: 18 June 2012 11:19
To: 'dennis.chan@hkbcf.com.hk'
Cc: Ching, Eric
Subject: RE: Possibility of Reusing C&D Materials to be Generated from WKCD Project

Dear Dennis,

As discussed, grateful if you could provide us tentative public fill demand schedule prepared by Contractor for our planning.

Thanks and Regards,
Benny

From: Ching, Eric
Sent: 04 June 2012 13:57
To: Dennis CHAN Kwai-ming
Cc: C M OR; Anthony WONG Ying-kit; Isaac CHAN Shu-hang; YC Ng; Liu, Benny
Subject: RE: Possibility of Reusing C&D Materials to be Generated from WKCD Project

Dear Dennis,

Thanks for your feedback.

The information you provided will be used for our planning purposes. During the future construction stage, I am sure coordination meetings will be held with your team to work out the detailed arrangement.

Regards,

Eric

From: Dennis CHAN Kwai-ming [mailto:]
Sent: 04 June 2012 13:47
To: Ching, Eric
Cc: C M OR; Anthony WONG Ying-kit; Isaac CHAN Shu-hang
Subject: Possibility of Reusing C&D Materials to be Generated from WKCD Project

Dear Eric,

11/19/2012

We are the Consultant commissioned by the Highways Department for reclamation works of Hong Kong Boundary Crossing Facilities, Hong Kong-Zhuhai-Macao Bridge (Contract No. HY/2010/02). The works had commenced in November 2011 and scheduled to be completed in late 2016.

As spoken, please find attached the tentative public fill demand schedule prepared by our Contractor, China Harbour Engineering Company Limited, for contract no. HY/2010/02 for your information. Coordination meeting with you will then be arranged in due course for more about the matching exercise. Attached please also find a copy of the specification on the requirements of fill material for your information. Thank you for your attention.

Regards,

Dennis Chan

Resident Engineer

HZMB HKBCF - Reclamation Works

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Total Demand from Contract No. HY/2010/02

Type	2012													
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan - Dec	
Rock (total), ton	0	5,100	25,911	93,853	120,000	248,658	257,763	236,240	224,519	219,504	662,244	642,179	2,242,449	2,733,001
Soft Public Fill, ton	0	0	0	0	0	0	15,704	31,408	89,204	153,456	163,002	426,356	889,130	893,130
Grand Total, ton			490,552			3,622,131			3,131,579				490,552	3,622,131

Type	2013													
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan - Dec	
Rock (total), ton	758,284	739,360	721,489	755,447	692,893	598,351	580,759	556,230	462,037	298,931	381,066	230,800	2,409,023	6,874,847
Soft Public Fill, ton	1,126,774	1,786,882	1,816,516	259,240	244,084	453,730	1,674,094	1,952,680	2,008,272	2,512,209	1,867,405	1,980,113	11,894,774	17,581,000
Grand Total, ton			9,952,050			14,303,797							9,952,050	24,255,847

Type	2014													
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan - Dec	
Rock (total), ton	298,000	148,000	148,000	165,506	301,553	89,006	4,900	4,000	0	0	0	0	8,000	887,059
Soft Public Fill, ton	2,219,520	2,105,382	1,804,068	271,000	166,000	168,000	381,000	381,000	253,000	253,000	255,000	255,000	1,776,000	6,509,870
Grand Total, ton			7,612,929			9,396,929			1,784,000				7,612,929	9,396,929

Type	2015													
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan - Dec	
Rock (total), ton	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Soft Public Fill, ton	407,000	407,000	407,000	407,000	407,000	405,000	0	0	0	0	0	0	2,440,000	2,440,000
Grand Total, ton			2,440,000			2,440,000			0				2,440,000	2,440,000

Type	Beyond 2015											
Rock (total), ton	0											
Soft Public Fill, ton	0											
Grand Total, ton	0											

Type	Total											
Rock (total), ton	10,294,907											
Soft Public Fill, ton	29,420,000											
Grand Total, ton	39,714,907											

SECTION 6

EARTHWORKS

GLOSSARY OF TERMS

<i>Embankment</i>	6.03A	'Embankments' mean part of the fill above a level of +2.50mPD.
<i>Earthworks final surface</i>	6.04S	(1) Earthworks final surface is the surface to which the work included in Section 6 is finished. (2) Elevations and contours indicated on the Drawings are to finish grade at handover unless otherwise indicated. The Contractor shall make allowances for settlement of base, pavement, topsoil and soil material thickness where applicable, up to the time of handover. (3) Upon completion of all grading in an area or portion of works, the Contractor shall provide an as-built finish grade survey.
<i>Suitable material</i>	6.06A	Suitable material shall mean fill material in compliance with Clause 6.09 of the Specification, or material which is capable of being selected, processed and mixed in the opinion of the Engineer to make it suitable for use as fill material for the Works in accordance with this Specification. Such treatment shall be approved by the Engineer and may include removal of material larger than permitted by the Engineer and/or modification of the moisture content. The suitable material should be free from marine mud, household refuse, plastic, metal, industrial and chemical waste, animal and vegetable matter, and other materials considered unsuitable by the Engineer.
<i>Unsuitable material</i>	6.06B	Unsuitable material shall mean material other than suitable material.

MATERIALS

<i>Fill material</i>	6.09	(13) The use of contaminated material for filling shall not be permitted, without the Engineer's approval. (14) Recycled fill materials shall be used whenever possible, as imported granular fill, sub-base and rock fill materials for the Contract. (15) Recycled fill material shall comply with the requirements for fill material as stipulated in Section 6 of the Specification for the relevant types of fill materials. (16) Rock and artificial hard material excavated on Site shall be re-used whenever possible. (17) The Contractor shall submit results of index tests and particle size
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distribution of the fill material to the Engineer for approval.

- (18) On receipt of instructions the Contractor shall send representative samples of each material weighing at least 25 kg to the Public Works Laboratory for testing (BS1377: 1990). The source of each sample shall be identified along with a general description of the material.
- (19) Public fill collected from the designated sources as stated in PS Clause 6.39A(1) may consist of soil, rock, artificial material of any kinds, and/or construction and demolition material. The Contractor acknowledges that not all the public fill collected from the designated sources could fulfil the requirement as stated in items (a) to (f) listed in this Clause below. The Contractor also acknowledges that the quantity or percentages of such unsuitable materials contained in the public fill will vary from time to time and from sources to sources, and that both the exact total quantity of public fill and its time of supply at the designated sources are uncertain. The Contractor shall design, erect, operate and maintain his selection and/or sorting facilities and associated barging points within the Works Area at Tseung Kwan O Area 137 to select and/or sort all public fill collected from the designated sources to material specification of suitable public fill. The public fill shall be regarded as material provided by the Contractor. Attention is drawn to the contract provision as stated in Special Conditions of Contract Clause SCC 100.

Suitable public fill shall not contain any of the following:

- (a) material exceeding 250mm in size (retained on Mesh No. 60);
 - (b) material susceptible to volume change, including marine mud, soil with liquid limit exceeding 65% or a plasticity index exceeding 35%, swelling clays and collapsible soils;
 - (c) peat, vegetation, timber, organic, soluble or perishable material;
 - (d) dangerous or toxic material;
 - (e) material susceptible to combustion; and
 - (f) metal, rubble, plastic, or synthetic material.
- (20) Type A fill material shall consist of sand fill as specified in PS clause 21.12A and suitable public fill as specified in PS clause 6.09(19), with compositions in compliance with the Draft Environmental Requirements as referred to in Special Conditions of Contract Clause SCC 101.
- (21) Type B fill material shall be suitable public fill as specified in PS clause 6.09(19) if found available and/or its substitute by sand fill as specified in PS 21.12A. The suitable public fill shall be priority used over the sand fill, unless otherwise agreed by the Engineer.
- (22) Type C fill shall be fill material as stated in PS Clause 21.12 (11).

MATERIALS

Fill material for marine works 21.12

(1)S The different types of fill material for reclamation shall either be Type A, Type B, Type C, Type D or rock as specified in the Contract. The fill material shall have the particle size distributions of an appropriate type of fill material within the ranges stated in PS Clause 6.09(19) and Table 21.1A unless otherwise stated in the Contract.

(2)S The different type of fill material for marine structures shall either be Type A, Type B, Type C, Type D or rock as specified in the Contract and shall have the particle size distributions of appropriate type of fill material within the ranges stated in PS Clause 6.09(19) and Table 21.1A unless otherwise stated in the Contract.

(9) Type A fill material shall consist of sand fill as specified in PS clause 21.12A and suitable public fill as specified in PS clause 6.09(19), with compositions in compliance with the Environmental Permits as stated in PS clause 1.67A and “Draft Environmental Requirements” as referred to in SCC clause 101.

(10) Type B fill material shall be suitable public fill as specified in PS clause 6.09(19) if found available and/or its substitute by sand fill as specified in PS 21.12A. The suitable public fill shall be priority used over the sand fill, unless otherwise agreed by the Engineer.

(11) Type C fill material shall consist of suitable public fill as stated in PS clause 6.09(19), sand fill as specified in PS Clause 21.12A and dredged material from construction of culverts and seawalls at Portion D of the Site or otherwise agreed by the Engineer, and shall be deposited within cellular structures only. Deposition of Type C fill material shall comply with the requirements stated in PS clause 21.58A.

(11A) Type D fill material shall be sand fill as specified in PS Clause 21.12A.

(12) Sand blanket shall be sand fill and have the particle size distribution within the ranges stated in Table 21.1A. Sand blanket shall be uniformly graded with coefficient of uniformity not exceeding 10.

(13) All rock fill material shall comprise pieces of sound, dense, hard and durable rock free from cracks, veins and similar defects and of which in the opinion of the Engineer not more than 30% by mass shall be discoloured or show other evidence of decomposition. The individual pieces shall be clean and angular, and neither elongated nor flat. All categories of rock fill shall comply with the relevant requirements of the Specifications and Drawings, and shall have the particle size distributions within the ranges stated in Table 21.1B.

(14) The Contractor shall provide the Engineer access to dredgers, barges and other crafts for the purposes of material sampling, inspection and other quality control and assurance measures.

Table 21.1A Particle size distribution of sand fill

Type of fill material	Percentage by mass passing BS test sieve				
	75mm	37.5mm	20mm	600µm	63µm
Sand Fill	100	100	-	-	0 - 5

Table 21.1B Particle size distribution of additional classifications of rock fill

Type of rockfill	Percentage by mass passing								
	Size (mm)								
	16	23	31.5	63	90	180	250	630	700
Type 1	0 - 5	0 - 15	-	0 - 50	-	20 - 90	-	85 - 100	100
Type 2	-	-	0 - 5	0 - 15	0 - 50	90 - 100	98 - 100	-	-

Sand fill

21.12A

- (1) Sand fill shall consist of coarse sand being clean hard durable material free from organic and other deleterious material and shall not exceed 37.5mm in size. The fines content, which is the percentage by mass passing 63 micron BS sieve, shall not exceed 5% when finally placed in the Works. The fines content may be determined by BS 1377 Part 2 Method 9.3 "Dry Sieving Method", subject to an acceptable correlation factor being established by comparative testing to the satisfaction of the Engineer, and the maximum fines content of 5% will be lowered in accordance with the accepted correlation factor. Such correlation tests shall be repeated if the nature of material being deposited changes significantly particularly in respect of shell content.
- (2) The carbonate content of sand fill shall be less than 5% by mass.
- (3) The Contractor shall maintain the sole responsibility for determining the suitability of material in-situ in his borrow areas or in the hopper or barge for final use as fill in the reclamation works. Samples shall be collected from the hopper or barge for subsequent testing. The suitability or otherwise of material used as fill material in the reclamation shall be determined by the Engineer after its deposition.
- (4) The Contractor shall provide the Engineer with samples of sand fill, which complies with the Contract requirements and approved by the Engineer, to facilitate visual examination of sand fill delivered to the site in each barge prior to deposition. This however does not relieve the Contractor's responsibility for ensuring that the sand fill complies with the Contract requirements.
- (5) The suitability of the material in the reclamation shall be determined by laboratory sieve analysis of specimens sampled from the barge by the Engineer. The sampling frequency shall be based on the requirements in Table 6.4 in the Specifications.
- (6) The acceptability of sand fill will be based on the averages of test results from samples collected from material used in a particular area presented by the Contractor, instead of from individual samples.

Correspondence for 3rd runway
Project



Our ref KMY/ SHC/SB/EC/BL/T255962/04.02/L0279
Your ref

Airport Authority Hong Kong
HKIA Tower
1 Sky Plaza Road
Hong Kong International Airport
Lantau, Hong Kong

22 May 2012

Attn: Mr Sean Cheong

By Post and Fax: 2182 1184

Dear Sir,

**Project Consultancy Study for West Kowloon Cultural District – Development Plan
Possibility of Reusing C&D Materials to be Generated from WKCD Project**

We are the Engineering Consultants engaged by the West Kowloon Cultural District (WKCD) Authority for developing the WKCD Concept Plan into a detailed Development Plan. The Project Area is shown in Figure 1 as attached.

According to the basement design and construction method, excavation works for the WKCD basement construction will be the major source of C&D materials generated by the Project. It is estimated that the total amount of C&D materials to be generated by the WKCD Project would be approximately 1,945,000 m³, in which 1,872,000 m³ would be from the excavation work and 73,000 m³ would be from construction of superstructures and substructures.

It is planned that the bulk excavation for the basement will be proceeded on a zone-by-zone basis from 2013 to 2017, and therefore the amount of C&D materials due to the excavation has been estimated based on the construction programme for different years as summarized below:

Yr 2013: 18,000 m³
Yr 2014: 522,000 m³
Yr 2015: 708,000 m³
Yr 2016: 384,000 m³
Yr 2017: 240,000 m³

It is anticipated that the 73,000 m³ of C&D materials from construction of superstructures and substructures would be generated from 2013 to 2020.



While the C&D material generated will be reused at the WKCD Project site as fill materials as far as practicable, it is anticipated that there will be surplus C&D materials requiring disposal. As such, we would like to identify any opportunities of reusing the surplus C&D materials in other projects as fill materials in order to further relieve the burden of Public Fill Reception Facilities. For this, we would be most grateful if you could advise us of any of your existing / planned projects which will require intake of fill materials during the period from 2013 to 2020, and the possibility of reusing C&D materials from the WKCD Project. If any of your projects would be able to receive the C&D materials from the WKCD Project, could you please provide us the following details:

- Title of the project
- The time programme for receiving the C&D material from WKCD Project

We look forward to receiving your feedback at your earliest convenience, preferably by 5 June 2012.

Your assistance in this exercise is mostly appreciated. Should you have any questions, please contact our Mr. Eric Ching at 2828 5825 or Mr. Benny Liu at 2828 5822.

Yours faithfully,
for MOTT MACDONALD HONG KONG LIMITED

A handwritten signature in black ink, appearing to read "S.B.", with a long horizontal stroke extending to the right.

Stephen Bingham

Encl.

- Figure 1 - Project Area

Cc

West Kowloon Cultural District Authority
Attention: Dr MW Chan (by fax 28950016 w/o encl)

Environmental Protection Department
Attention: Ms Sally Fung (by fax 25910558 w/o encl)