



# ARCHITECTURAL SERVICES DEPARTMENT 建築署

QUEENSWAY GOVERNMENT OFFICES, 66 QUEENSWAY, HONG KONG. 香港金鐘道六十六號金鐘道政府合署

來函檔號 Your Ref. : CB4/PAC/R70  
 本函檔號 Our Ref. : 10/1-125/33  
 電話號碼 Tel. No. : 2867 3877  
 傳真號碼 Fax No. : 2523 4693

By fax 2543 9197 and e-mail  
 (ahychu@legco.gov.hk, kmho@legco.gov.hk & pkwlai@legco.gov.hk)

16 July 2018

Mr Anthony CHU  
 Clerk to the Public Accounts Committee  
 Legislative Council  
 Legislative Council Complex  
 1 Legislative Council Road  
 Central, Hong Kong

Dear Mr CHU,

**Public Accounts Committee**  
**Consideration of Chapter 1 of the Director of Audit's Report No. 70**  
**Management of restored landfills**

Thank you for your letter dated 28 June 2018 requesting response / information to facilitate the Public Accounts Committee's consideration of the above Chapter. Please find our reply below:

Construction of Jordan Valley Park

- (a) Referring to paragraph 3.46(a)(i),(ii) and (iv) which listed out the additional works after awarding construction contract, please provide reasons for not able to incorporate the works into the tender documents; the necessity for the variation works; whether, and, if so, which of the items would have been avoidable if adequate time and planning had been done before the award of original contract. Please provide photos or diagrams illustrating new design of buildings and fence wall footings locating above the capping layer, leachate system, landfill gas system and sub-soil drain system of the landfill;

In the 2005 Policy Address, the Chief Executive of the Hong Kong Special Administrative Region announced that the construction of the Jordan Valley Park (JVP) at Jordan Valley Landfill would be one of the 25 projects for priority

implementation. Due to tight project time frame, the project was implemented in a very tight and fast track programme to meet the need of the local community. The consultants had to carry out many design development/coordination activities and tender documentation in parallel. The consultant's design with Independent Checker (IC)'s checking was completed just before the issue of tender. We expected that EPD's comments, if any, would not be significant because the design had been checked by IC and, if indeed necessary, EPD's comments could be incorporated by variation orders under the contract in the usual way similar to other projects. To enable early completion of the project for public enjoyment, it was then decided to proceed with the tendering exercise before EPD provided their comments. As such, the additional work mentioned in paragraph 3.46(a)(i) had not been included in the tender document, yet at that time the project team believed that the additional works could be resolved after contract commencement. Please refer to paragraph (e)(i) below for more details.

For the additional works mentioned in paragraph 3.46(a)(ii) and (iv), they came up after the contract had commenced. The items 3.46(a)(ii) were required to suit latest requirements given by statutory bodies and utilities departments while items 3.46(a)(iv) were required to comply with EPD requirements given at construction stage. As a result, these additional works were incorporated into the contract by variation orders.

The variation works in paragraph 3.46(a)(i),(ii) & (iv) were considered necessary to: (i) resolve the building location issue (conflicts of the afteruse facilities with the aftercare facilities) (3.46(a)(i)); (ii) comply with the statutory requirements and requirements and comments on provision of utilities from other government departments (3.46(a)(ii)); and (iii) to comply with EPD requirements (3.46(a)(iv)).

If sufficient time was available for obtaining comments from EPD for incorporation into the tender before the issuance of the tender, most of the items under 3.46(a)(i) would likely be incorporated in the tender. To sum up our experience, if sufficient time had been allowed for completion of all the design development, IC checking and obtaining EPD's comments for incorporation into tender document before tender, the amount of the variation works might be reduced. However, it should be noted that for this project, the expenditure would have been incurred irrespective of whether the work was included in the tender or as a variation subsequent to award of contract. Please refer to paragraph (d) below for more details.

Please refer to Annex I for the diagrams illustrating new design of buildings and fence wall footings locating above the capping layer, leachate system, landfill gas system and sub-soil drain system of the landfill.

- (b) Details with photos or diagrams for illustration regarding variation works of \$4.8 million requested by LCSD on the radio-controlled model car racing circuit and why was the variation considered necessary and reasons for not incorporating the works into tender documents;

The variation works of \$4.8 million include :

- Revising the design of the radio-controlled model car circuit by :
  - (i) adding high traction fine asphalt floor for radio-controlled model car circuit and adding compact flexible surfacing works including road hump and marking paint at indoor radio-controlled model car circuit covered pit area;
  - (ii) adding noise barrier for the driver's stand;
  - (iii) adding Plexiglas wall at radio-controlled model car circuit;
  - (iv) adding working benches and seats for covered pit area; and
  - (v) some minor variation works for the radio-controlled model car circuit;
- Replacing original bollard lights by pole-mounted flood lights at lawn area;
- Revising details and addition of signages to general park areas;
- Adding aluminium cladding to canopy at the park office and horticultural education centre; and
- Other miscellaneous minor items

The variation works were considered necessary on operational ground after site visit during the construction stage.

Please refer to Annex II for the layout plan showing the variation works.

- (c) Although three consultants were appointed for the project, there were still project cost overrun and delay problems. Please advise reasons for that and the role of the respective three consultants;

The three consultants appointed by ArchSD for the project were responsible for different duties. Their roles were as follows :

- (i) A lead consultant for design and construction supervision;
- (ii) A quantity surveyor for preparation of tender documents and valuing the cost of works; and
- (iii) A specialist independent checker for reviewing the design and layout plans and, in view of the special nature of this project, checking compliance with the EPD's technical specification for carrying out works on restored landfills.

Due to tight project time frame, the project was implemented in a very tight and fast track programme to meet the need of the local community. The consultants had to carry out many design development/coordination activities and tender documentation in parallel. The project was very unique and was the first project constructed on a landfill site implemented by ArchSD. Optimal design solutions

to overcome the problems encountered were worked out through discussions among all parties concerned. The consultant's design with IC's checking was completed just before the issue of tender. During tender assessment stage, comments from EPD were received. Additional works mentioned in paragraph 3.46(a)(i) were found to be required to address EPD's comments. Besides, additional works mentioned in paragraph 3.46(a)(ii) were required for compliance with statutory requirements and requirements and comments on provision of utilities from other government departments. Additional works mentioned in paragraph 3.46(a)(iii) was required to incorporate LCSD requested improvement works for fine-tuning the facilities from operational point of view. Additional works mentioned in paragraph 3.46(a)(iv) was required to comply with EPD requirements given at construction stage. These additional works were incorporated into the contract by variation orders, and additional cost was involved. As mentioned under (a) above, if sufficient time had been allowed for obtaining comments from EPD for incorporation into the tender before the issuance of the tender, most of the items 3.46(a)(i) would likely be incorporated in the tender.

The Contract was originally scheduled for completion in September 2009. Extension of time (EOT) of 185 days were issued due to inclement weather and EOT of 2 days were issued due to truck drivers on strike which was an industrial action conducted by the Hong Kong Truck Drivers Association. Hence, the Contract was completed in March 2010, against the completion date of December 2009 stated in the PWSC paper.

- (d) Referring to paragraph 3.50, reasons for ArchSD to consult EPD on the tender documents only after issuing tender, which was contrary to the request of EPD to provide detailed design and layout plans for its comments when available. Please provide a chronology of communication between EPD and ArchSD in this regard;

Consultation with EPD had commenced since early stage of the project. During the feasibility study stage, ArchSD had prepared submissions to EPD and obtained respective requirements from EPD and incorporated into the Technical Feasibility Statement. During the design process, ArchSD and its consultant had closely liaised with EPD for the design, ground investigation, requirements of landfill gas hazard assessments, necessary modification works of the aftercare facilities etc, through letters, memorandums, e-mails, meetings, joint site visits and telephone discussions. After completion of the layout plans and detailed design and checked by Independent checker (IC), they were submitted to EPD. However, due to tight project time frame, submissions of the layout plans and detailed design to EPD could only take place after the issue of tender. Although EPD's comments could not be included in the tender document due to the tight programme, variation orders to address EPD's comments were issued timely with no abortive work incurred. The expenditure for work to address EPD's comments would have been incurred irrespective of whether the work was included in the tender or as a variation subsequent to the award of contract.

Please find a chronology of communication between EPD and ArchSD in Annex III.

- (e) Although building location issue was identified before the award of contract, ArchSD had not revised tender requirements but instead decided to resolve the issue at post-contract stage by variation orders (paragraph 3.48 refers). Please provide:

- (i) Justifications for the decision;

It was decided not to revise the tender requirements (hence the need to re-tender since the revisions were only known after tender return) and postpone the award of the contract after taking into account the following considerations:

- to avoid delaying the project programme;
- the Government would suffer a greater loss if the project were to be re-tendered in view of the rising trend of construction costs;
- in general for construction works contracts, it was expected and unavoidable to have certain site constraint matters resolved during construction and the costs absorbed by contingencies; and
- the anticipated variations would not be substantial.

- (ii) Reasons for not informing Central Tender Board of the change in design as set out in tender documents and whether there are guidelines on what changes/issues needed to report back to the Central Tender Board, and details of precedent cases; has ArchSD consulted FSTB or other departments before making the decision not to inform the Central Tender Board;

During that time, ArchSD considered that the conflicts of the afteruse facilities with the aftercare facilities could be resolved by design changes which would not be substantial and could be resolved by variation works at post contract stage. In fact, of such problem with the 4 building blocks and the model car circuit located above the landfill gas pipes and sub-soil drain system, 2 of the building blocks were overcome by minor re-positioning of the buildings. Hence, ArchSD did not inform CTB of the change in design and ArchSD had not consulted FSTB or other departments before making the decision.

There are no guidelines on what changes / issues needed to report back to the Central Tender Board. According to our record, there were no cases with ArchSD that changes/issues were reported back to the Central Tender Board in the past 10 years.

- (iii) Given the additional variation works of \$23.8 million (paragraph 3.46(a) refers), whether ArchSD considered the practice equitable to all tenderers. In this connection, whether Contractor D's bid was the lowest price among the proposals submitted for this project. If yes, please provide the price of the second lowest bid;

Regarding the variation works of \$23.8 million, not the full amount was related to variation works anticipated before tender award. Items (ii), (iii) & (iv) under paragraph 3.46(a) of the audit report came up only after the contract had commenced.

As the relevant variation works were also applicable to all tenderers, ArchSD considered that the practice was equitable to all tenderers. For information, Contractor D was the lowest price tenderer. The tender price of the lowest tender and the 2nd lowest tender were \$137.70 million and \$150.22 million respectively. The 2nd lowest tender price was \$12.52 million (i.e. 9.09%) higher than the lowest tender price.

- (iv) Details of the settlement claims of \$16.5 million, including nature of the disputes, negotiation between ArchSD and Contractor D and the settlement agreement;

Upon the issue of the draft final account by QS consultant to Contractor D for agreement in February 2012, Contractor D disagreed with the draft final account and served a notice of arbitration in May 2012 claiming for all disagreement items. The disagreement items involved the following:

1) Site levels

Contractor D disputed that the existing ground levels of the site were different from the reference site contours shown on the contract drawings, which resulted in additional import filling.

2) Prolongation costs

Contractor D disputed that the variation works of underground cable ducts and draw pits had caused critical delay to the programme and thus raised the claims for extension of time and its prolongation cost.

3) Methods of measurement

Contractor D argued that some Bills of Quantities (BQ) items did not fully describe the extent of the work.

4) Principles of valuing variations

The Contractor D claimed that non-contract rates instead of contract rates should be applied to some variation items.

#### 5) Absence of Architect's Instructions

Contractor D claimed that some works were variations that should be covered by Architect's Instructions, while the Architect considered that those works were related to the rectification of defective works.

Upon receiving the notice of arbitration, ArchSD sought legal advice within the Government. In this connection, the legal advisor employed an independent quantum expert (IQE) to study and analyze Contractor D's claims on individual disputed items. Legal views on the merits of the Contractor's claim and IQE's recommended figures on individual disputed items were provided for ArchSD's reference. Legal advice also considered that it would be a good deal for the Government if protracted and expensive arbitration could be avoided by securing the Contractor's agreement to settle the final account in total of \$178 million through negotiation. As the arbitration expenses would be substantial for both parties, ArchSD took the legal advice and proceeded to seek Financial Services and the Treasury Bureau (FSTB)'s approval in accordance with the Stores and Procurement Regulations to settle the disputes by negotiation.

In June 2013, FSTB's approval was obtained to negotiate with Contractor D for full and final settlement of all disputes. In July 2013, ArchSD formed a negotiation team to conduct negotiation with Contractor D to request for withdrawal of the notice of arbitration, and full and final settlement of all the disputes on a without prejudice basis. The negotiation was carried out in the same month and a lump sum settlement sum of \$16.5 million was reached by the parties. Upon further approval from FSTB, the results of the negotiation were recorded in a settlement agreement executed in August 2013.

- (f) Referring to the estimated capital cost of the project contains in the paper submitted to Public Works Subcommittee of Finance Committee on 15 June 2007 (R70/1/Info 6), how was the contingencies of \$11.6 million calculated and under what conditions would the contingencies be deployed;

The contingencies of \$11.6 million stated in the paper submitted to Public Works Subcommittee of Finance Committee on 15 June 2007 was allowance of around 7.5% of the total estimated cost of works for work or expenditure which could not be foreseen at the time of preparing the paper. Generally, allowing 7.5% contingency for an open space project was appropriate at that period of time.

- (g) Reasons for ArchSD to adopt a fixed price contract for implementing the project knowing that there might be variation and complications when developing the facilities on a restored landfill.

Generally, lump sum fixed price contract (instead of re-measurement contract) was adopted for implementing projects in which the client's requirements could be established at early stage and the detailed design information and drawings were available for estimation and preparation of tender documentation, which was the case of Jordan Valley Park.

Yours sincerely,



( Edward TSE )

for Director of Architectural Services

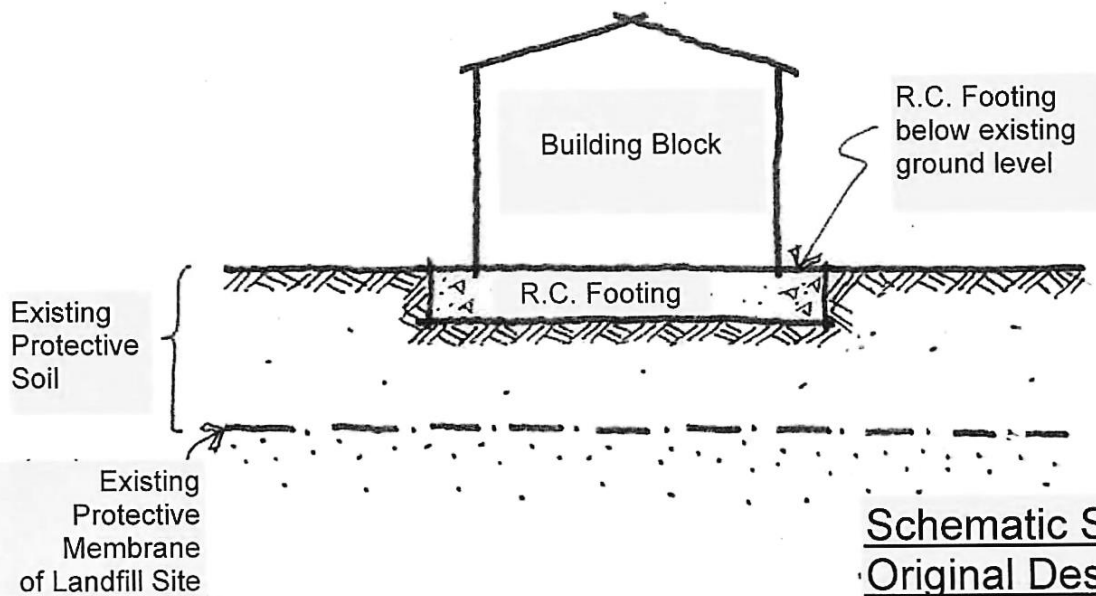
- c.c. Secretary for Environment (fax no. 2537 7278)  
Secretary for Home Affairs (fax no. 2591 5536)  
Director of Environment Protection (fax no. 2891 2512)  
Director of Leisure and Cultural Services (fax no. 2691 4661)  
Director of Home Affairs (fax no. 2574 8638)  
Secretary for Financial Services and the Treasury (fax no. 2147 5239)  
Director of Audit (fax no. 2583 9063)



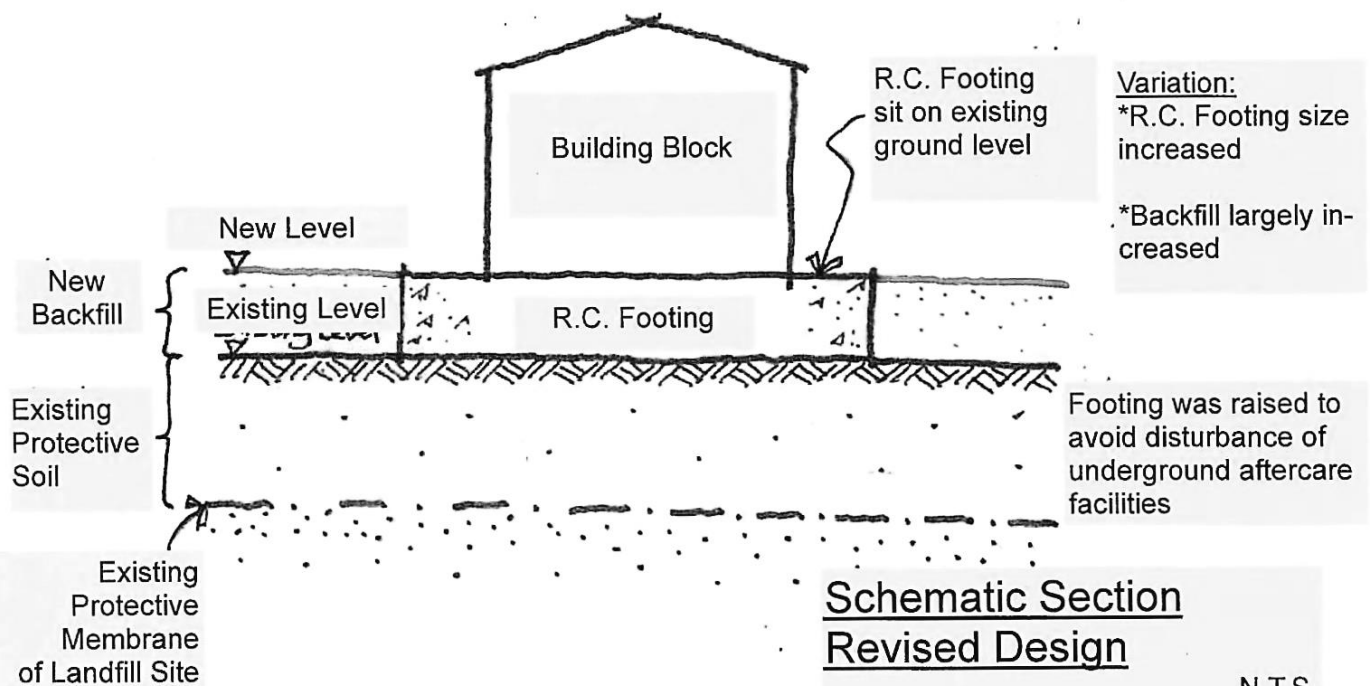
## Jordan Valley Park

### Changes of Building Blocks

### due to "Building Location Issue"



N.T.S.



N.T.S.

#### Variation:

\*R.C. Footing size increased

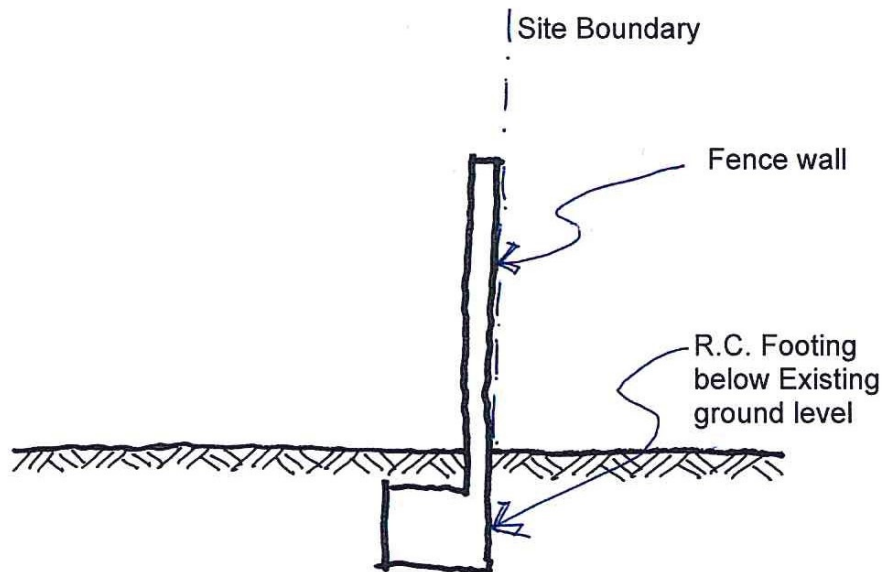
\*Backfill largely increased

Footing was raised to avoid disturbance of underground aftercare facilities

Drawn on June 2018 for illustration

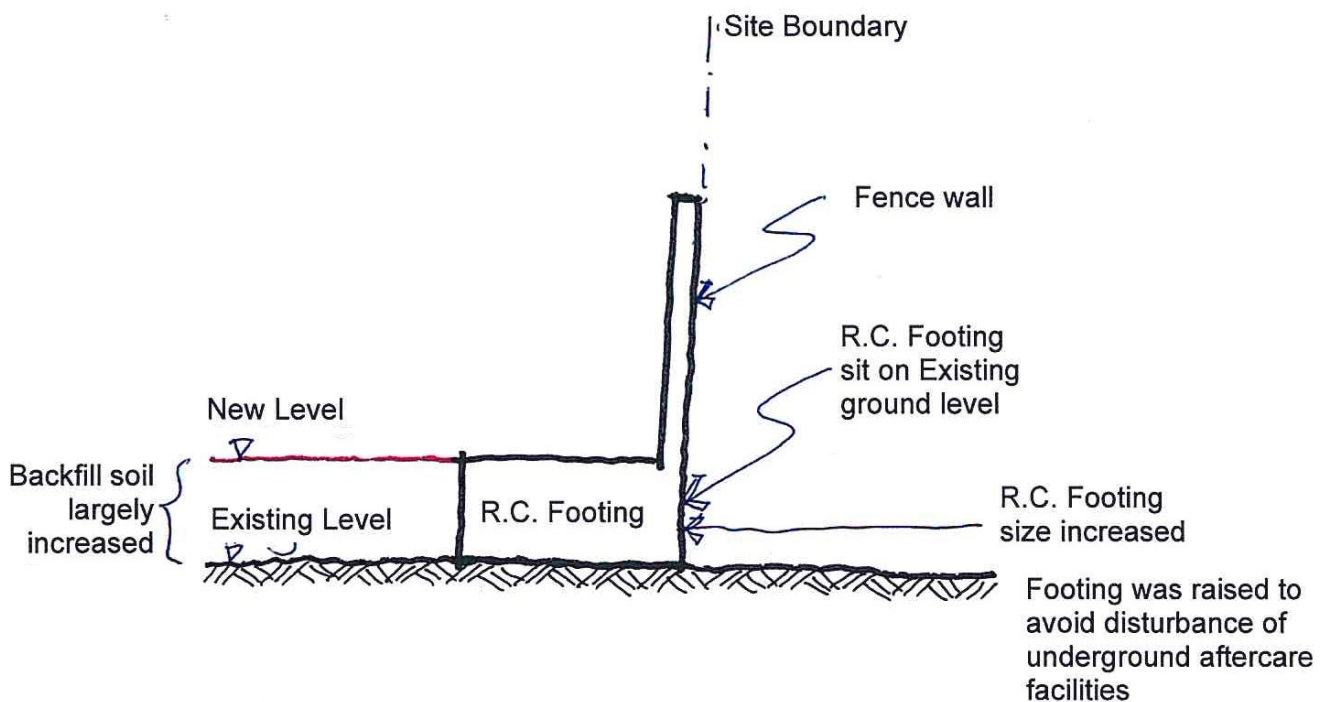
Changes of Fence Wall

due to Building Location Issue



Schematic Section - Original Design

N.T.S.



Schematic Section - Revised Design

N.T.S.

Drawn on June 2018 for illustration

B.D. Ref. no.  
F.S.D. Ref. no.

## ADDENDUM NO.1

LEGEND:-

- (W) WASTE RECEPTACLE
- (D) BARRIER-FREE OUTDOOR DRINKING FOUNTAIN (2 NOS.)
- (T) BARRIER-FREE OUTDOOR PUBLIC TELEPHONE
- (M) NATURAL STONE PATH FOR MANHOLE MAINTENANCE
- (S) BENCH W/ RAIN SHELTER

ArchSD Record No. Proj. Comp. Date  
A00369281 03/2010

REV 1 14/06/07 ADDENDUM NO.1  
NO. date description initial

revision

Lead Consultant  
**andrew lee king fun & associates architects ltd.**  
18/F, Universal Trade Centre, 3 Ardour Road, C  
Hong Kong (Telephone: 00852 47400000 Fax: 00852 47400001)

Geotechnical & Structural Sub-consultant:  
**MEINHARDT (C&S) LTD.**

Building Services Sub-consultant:  
**PARSONS BRINCKERHOFF (ASIA) LTD.**

Environmental Sub-consultant:  
**CH2M HILL HONG KONG LIMITED**

Landscape Architectural Sub-consultant:  
**URBIS LIMITED**

job no. A-0613

| DATE     | SIGNED       | DATE |
|----------|--------------|------|
| DESIGNED | DENNIS YEUNG |      |
| DRAWN    | T. LEUNG     |      |
| CHECKED  | ANDY CHU     |      |
| APPROVED | P.M. TANG    |      |

consultancy agreement no. 9AQ004

project title

RECREATIONAL FACILITIES  
ON JORDAN VALLEY FORMER LANDFILL  
KWUN TONG

drawing title

OVERALL SITE PLAN

drawing no. AB/6004/GP004

scale 1 : 750

rev. 1

approved

signature:

date 27 JULY 2007

ARCHITECTURAL  
SERVICES  
DEPARTMENT

ARCHITECTURAL  
SERVICES  
DEPARTMENT

ARCHITECTURAL  
SERVICES  
DEPARTMENT

ARCHITECTURAL  
SERVICES  
DEPARTMENT

ARCHITECTURAL  
SERVICES  
DEPARTMENT

ARCHITECTURAL  
SERVICES  
DEPARTMENT

ARCHITECTURAL  
SERVICES  
DEPARTMENT

ARCHITECTURAL  
SERVICES  
DEPARTMENT

Block 6  
Horticultural Education Centre

Variation Works:  
(i) add aluminium cladding to canopy

Block 7  
Green House

Block 8  
Toilet

Block 5  
Park Office

Variation Works:  
(i) add aluminium cladding to canopy

Block 3C & Block 3B  
Indoor Radio Controlled Model Car Racing Circuit & Covered Pit area

Variation Works:  
(i) add compact flexible surfacing works including road hump and marking paint  
(ii) add working benches and seats for Covered Pit area

Block 4  
Storerooms

Block 2  
Toilet

Block 10  
Plant Room

Block 1  
Toilet

Lawn  
Variation Works:  
(i) Replace original bollard lights by pole mounted lights

Outdoor Radio Controlled Model Car Racing Circuit

Variation works:  
(i) add high traction fine asphalt floor  
(ii) add noise barrier for driver's stand  
(iii) add Plexiglas wall

General Area:

Variation Works:  
(i) Revise details and addition of signages to general park areas



### Annex III - Chronology of communication between EPD and ArchSD

| Date     | Record of communication between EPD and ArchSD  |
|----------|---|
| Nov 2005 | EPD's memo dated 10.11.2005 to LCSD copied to ArchSD enclosing the Contractor B's comments on the restrictions and requirements for the Afteruse development at the Jordan Valley Landfill (JVL).   |
| Dec 2006 | ArchSD consultant's letter dated 8.12.2006 submitting Ground Investigation works proposal for EPD comment.  |
| Jan 2007 | <p>ArchSD consultant's letter dated 8.1.2007 attaching a proposal for Landfill Facilities Modification works to EPD for comment.</p> <p>EPD's e-mail dated 11.1.2007 providing comments regarding the requirements for Landfill Gas Hazard Assessment to ArchSD.</p> <p>EPD's e-mail dated 22.1.2007 providing comments from Contractor B to ArchSD consultant's proposal on restoration facilities modification proposal.</p> <p>ArchSD consultant's letter dated 23.1.2007 submitting Preliminary Environmental Review report to EPD.</p> <p>Meeting between EPD, Contractor B, ArchSD, ArchSD's consultant was held on 24.1.2007 for the modification works of existing landfill facilities.</p> |
| Feb 2007 | <p>Meeting between EPD, LCSD, ArchSD, ArchSD's consultant and Contractor B was held on 7.2.2007 regarding the contractual arrangement of the project.</p> <p>Joint site visit was held on 12.2.2007 among EPD, Contractor B, ArchSD and ArchSD consultant.</p> <p>ArchSD consultant's letter dated 14.2.2007 submitting the detailed design for Contractor B checking.</p>  |
| Mar 2007 | EPD's letter dated 1.3.2007 informing Contractor B that the Contractor of Afteruse facilities would enter the site from 2008 to 2010.   |

|          |   |
|----------|---|
|          | <p>ArchSD's memo dated 5.3.2007 seeking EPD advice on the requirement for engagement of an Independent Checker.</p> <p>Meeting between EPD and ArchSD was held on 22.3.2007 for the responsibility of modification works for landfill facilities and engagement of Independent Checker.</p> <p>ArchSD consultant's e-mail dated 27.3.2007 acknowledging receipt of technical specification from Contractor B.</p> <p>ArchSD's memo dated 28.3.2007 seeking EPD advice on the requirement for engagement of Independent Checker.</p> <p>ArchSD's e-mail dated 29.3.2007 seeking EPD comment on the draft document for invitation of quotation for engagement of Independent Checker.</p> |
| Apr 2007 | EPD e-mail dated 2.4.2007 providing comments to ArchSD for the invitation of quotation for Engagement of Independent Checker.   |
| May 2007 | The landfill gas hazard assessment consultant's (engaged by ArchSD) letter dated 31.5.2007 submitting the Landfill Gas Hazard Assessment Report to EPD.   |
| Sep 2007 | ArchSD's memo dated 25.9.2007 providing drawings certified by Independent Checker to EPD.   |
| Oct 2007 | <p>The landfill gas hazard assessment consultant's (engaged by ArchSD)'s letter dated 2.10.2007 submitted revised Landfill Gas Hazard Assessment Report to EPD.</p> <p>EPD's memo dated 8.10.2007 to LCSD copied to ArchSD enclosing the</p>  |

|          |  |
|----------|--|
|          | <p>Contractor B's comments on the restrictions and requirements for the Afteruse development at the Jordan Valley Landfill and requesting the finalized layout plan and site handover date.</p> <p>The landfill gas hazard assessment consultant's (engaged by ArchSD) letter dated 16.10.2007 submitted revised Landfill Gas Hazard Assessment Report to EPD.</p> <p>EPD's letter dated 17.10.2007 to the landfill gas hazard assessment consultant's (engaged by ArchSD) advising no further comments on the Landfill Gas Hazard Assessment Report on 16.10.2007.</p> <p>EPD's letter dated 22.10.2007 to Contractor B enclosing ArchSD's detailed design drawings with Independent Checker's certification.</p> <p>EPD's e-mail dated 24.10.2007 informing ArchSD that Contractor B remarked many aspects of the design were deviated from the design requirements.</p> |
| Dec 2007 | <p>Contractor B emailed dated 5.12.2007 informing ArchSD that the some of sub-soil drain pipes were located under the foundation of some building blocks.</p>  |