PP/02/01324	Lots Road Power Station And Chelsea Creek 31- 41
PP/02/01324	Lots Road Power Station And Chelsea Creek 32- 41
PP/02/01324	Lots Road Power Station And Chelsea Creek 33- 41
PP/02/01324	Lots Road Power Station And Chelsea Creek 34- 41
PP/02/01324	Lots Road Power Station And Chelsea Creek 35- 41
PP/02/01324	Lots Road Power Station And Chelsea Creek 36- 41
PP/02/01324	Lots Road Power Station And Chelsea Creek 37- 41
PP/02/01324	Lots Road Power Station And Chelsea Creek 38- 41
PP/02/01324	Lots Road Power Station And Chelsea Creek 39- 41
PP/02/01324	Lots Road Power Station And Chelsea Creek 40- 41
PP/02/01324	Lots Road Power Station And Chelsea Creek 41- 41

ROYAL BOROUGH OF KENSINGTON AND CHELSEA

(31) CONDITION 11

DOCUMENT TYPE

DISCHARGE OF CONDITIONS

APPLICATIONS LATE UPDATE

PP/02/01324

Georgina Slader
Royal Borough of Kensington and Chelsea
Planning and Conservation
Georgina.Slader@rbkc.gov.uk

Our ref: TL/2008/100445/01-L02
Your ref:

Date: 05 March 2008

Dear Ms Slader

SUBMISSION OF DETAILS FOR TIDAL STORAGE PURSUANT TO CONDITION 11 OF PLANNING PERMISSION PP/02/01324 GRANTED BY THE SECRETARY OF STATE ON 30 JANUARY 2006.
LAND ADJACENT TO SOUTH SIDE OF CHELSEA CREEK, CHELSEA HARBOUR DRIVE, LONDON.

Following further discussions with the Applicant we are now in a position to recommend the discharge of Condition 11 (Tidal Storage Volume) of Planning Permission PP/02/01324.

Yours sincerely

Ms Anna Scott
Major Projects Officer

Direct dial 020 7091 4042
Direct e-mail anna.scott@environment-agency.gov.uk

cc DP9

End

Planning Consultants

DP9

JRS/DP1025

10 December 2007

EX DIR	HDC	TP		
R.B. K.C.	10 DEC 2007			
N	C	S		
HBS			ARB	

100 Pall Mall
London SW1Y 5NQ

telephone 020 7004 1700
facsimile 020 7004 1790

www.dp9.co.uk

RB Kensington & Chelsea
Planning and Borough Development
The Town Hall
Hornton Street
London
W8 7NX
For the attention of Georgina Slader

10/12

Dear Sirs

TOWN AND COUNTRY PLANNING ACT 1990 (AS AMENDED)
LOTS ROAD POWER STATION
PLANNING PERMISSION REF. PP/02/01324
Condition 11 – Tidal Storage Volume

On behalf of our clients, Circadian Ltd, we hereby submit details pursuant to condition 11 of the above planning permission granted by the Secretary of State on 30 January 2006.

Condition 11 – Tidal Storage Volume

Condition 11 attached to the above planning permission states that,

"The development hereby permitted shall cause no net loss of tidal storage volume below a flood defence level of 5.41m ODN, calculated in accordance with methodology and a degree of siltation of Chelsea Creek both agreed with the local planning authority."

Accordingly, we hereby enclose three copies of a Technical Report prepared by ARUP to meet the requirements of this condition.

The conclusions of the accompanying report advise that the proposed development of the site will produce a net gain of 17m³ of flood storage when compared to the existing situation. We consider therefore that the objectives of the condition has been met as the result does not produce a net loss of flood storage and actually has a slight benefit adding an extra 17m³ of flood storage volume.

We trust that the information enclosed is sufficient to progress the discharge of the above condition. If, however you require any further information please contact Julian Shirley at the above address.

Yours faithfully

DP9

DP9
Encs.

A list of the names of the partners and their professional qualifications is available for inspection at the above office

Job title	Lots Road	Job number	123162-01
Cc		File reference	
Prepared by	Jane Pitten	Date	7th December 2007
Subject	RBKC Condition 11		

R.B. K.C. 10 DEC 2007 PLANNING
N C S HBS ARB FPLN IO DES REC FEES AO AK CLU

1. INTRODUCTION

This Technical Note addresses the requirements of Condition 11 attached to planning permission ref. PP/02/01324 of Royal Borough of Kensington and Chelsea (RBKC) as specified in the decision letter dated 30th January 06 [Ref.1] for the redevelopment of the land at Lots Road Power Station.

This note and the accompanying documents are intended to fulfil the requirements of the Condition.

2. CONDITION 11

2.1 The condition

The development hereby permitted shall cause no net loss of tidal storage volume below a flood defence level of 5.41m ODN, calculated in accordance with methodology and a degree of siltation of Chelsea Creek both agreed with the local planning authority.

3. SILTATION

The bed of Chelsea Creek was surveyed in February 1995 and June 2000. The bed levels did not vary considerably during this period as the power station was still in operation and discharging cooling water. Since the cooling water discharge from the power station has stopped, there have been changes in bed level, partly due to siltation. The bed levels are shown in Appendix A. Comparing the river bed levels from 2000 and 2007, there has been a lot of variation in level. The change in bed levels varies considerably along the creek. In some places the bed level has decreased since the power station closure. On average the increase in siltation has been assessed to be at an approximate rate of 100mm/year between 2000 and 2007.

4. THE PROPOSALS

The project proposes construction of inter-tidal terraces. The terraces encroach into the existing creek in places and also cut back into the site in other places. Refer to Sk004 (Appendix B) for a plan showing the proposed terraces in comparison to the existing site. Drawings 123162-01-001 and 123162-01-005 (Appendix C) show proposed sections through the creek, demonstrating the encroachment and retreating of the terraces. The proposals will take up zones of flood storage where the terraces are encroaching. In addition where the terraces retreat back into the existing site, this will allow additional flood storage in places where there is no provision for flood storage in the existing situation.

5. METHODOLOGY

It is very difficult to predict the future pattern of siltation of the creek. The methodology is to take as a baseline the profile from the topographical survey [Ref 2], drawings of existing river walls [Ref 3], and river bed profile [Ref 4] and compare it with the terrace proposals. The calculation is entirely independent of any assessment of past siltation or any prediction of future siltation.

An assessment of the change in flood storage volumes to the +5.41m ODN level has been carried out by comparing the existing topographical site survey and creek profile with the proposals for the site. Cross sections have been drawn through the creek and site where flood storage is to be considered. Refer to SK004 (Appendix B) for an indication of the cross section locations. SK006, SK007 and SK008 (Appendix B) show the cross sections and highlight the loss in flood storage area and the gain in flood storage area as a result of the proposals.

The areas of 'Loss' and 'Gain' of flood storage have been summarised in the Table in Appendix B, titled Flood Storage Volumes. The distance between each cross section was measured. This is the length over which the cross section is represented. The areas of 'Loss' and 'Gain' of flood storage were then multiplied by the length to produce a flood storage volume.

The cross sections were drawn to show the existing and proposed profiles as accurately as possible. However, the program used could not accurately show the existing overhanging wall at the south of the site (see below for photograph demonstrating the wall type). At present, flood storage water can also be stored under this area.

Photograph demonstrating existing flood storage under part of the south site's river wall.

A separate calculation was carried out to determine the loss of flood storage due to filling in part of the under croft with the proposed terraces. This volume has been shown in Appendix B and has been brought into the Flood Storage Volumes Table to be applied to each cross section.

6. CONCLUSIONS

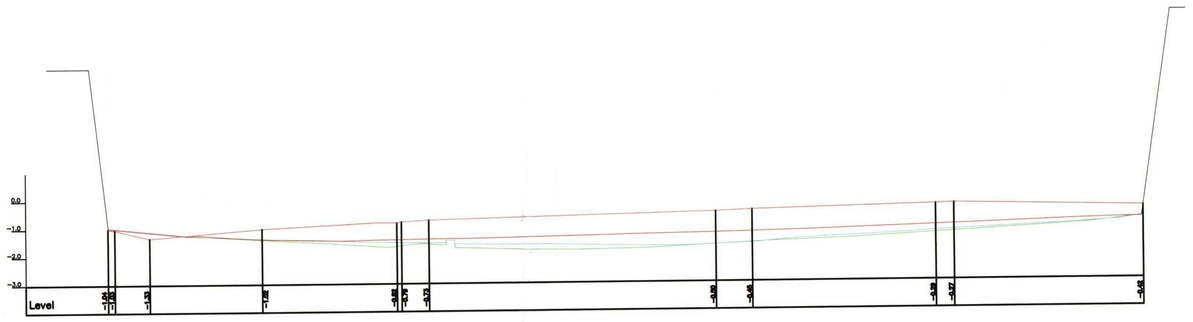
The Flood Storage Volumes Table summarises the total 'Loss' and total 'Gain' due to the proposals. The total loss is 3583m³. The total gain is 3600m³. This means the proposals produce a net gain of 17m³ of flood storage when compared to the existing situation. The condition has therefore been met as the result does not produce a net loss of flood storage and actually has a slight benefit adding an extra 17m³ of flood storage volume.

©Arup F0.15

7. REFERENCES

1. Secretary of State letter: Planning Applications 2002/03132/FUL and PP/02/01324 2002. 30th January 2006
2. River Wall survey (topographical site survey), Glanville & Associates, 1995
3. River wall elevation and sections, Glanville & Associates, 1995
4. Sections (river bed), Glanville, measured in Feb 1995 and June 2000

Appendix A – River Bed Cross Sections



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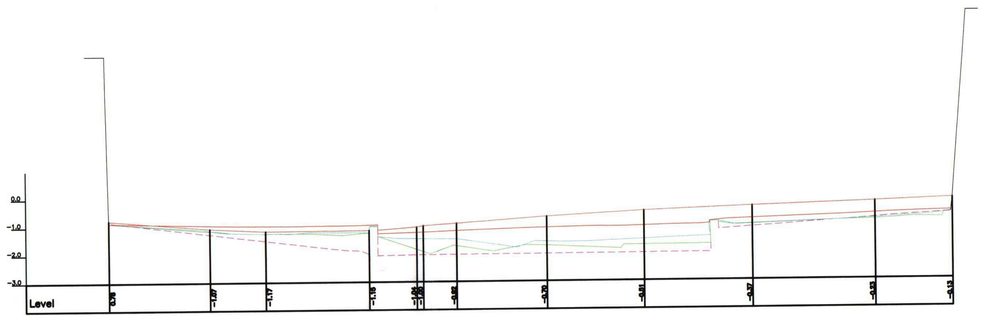

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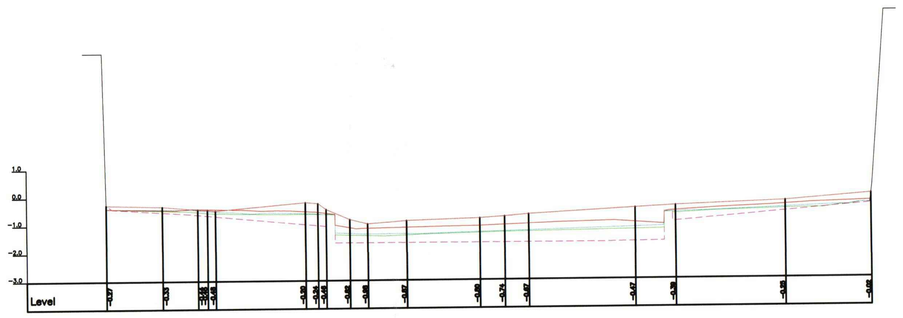

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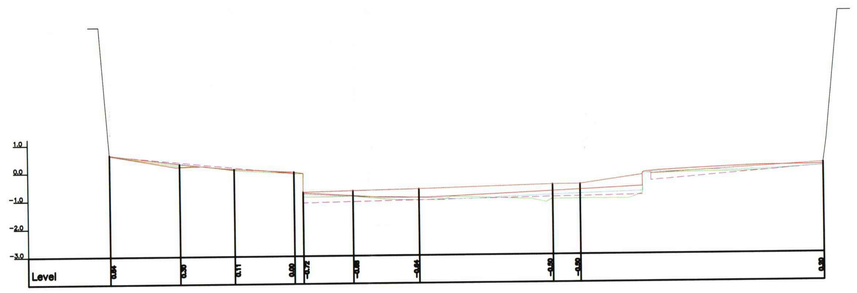

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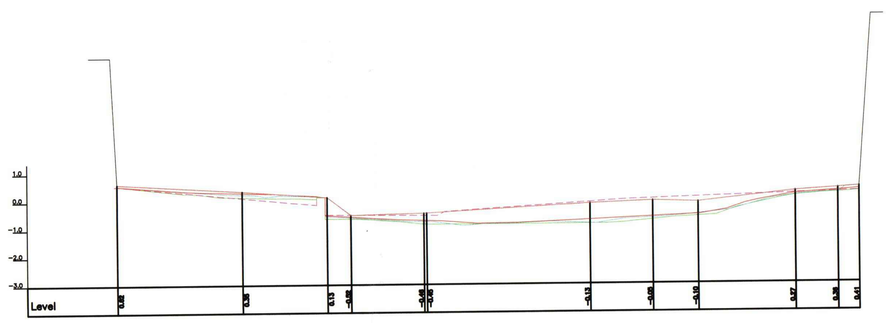

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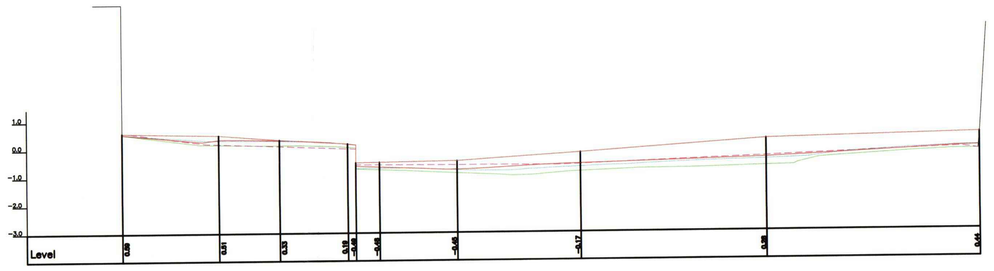

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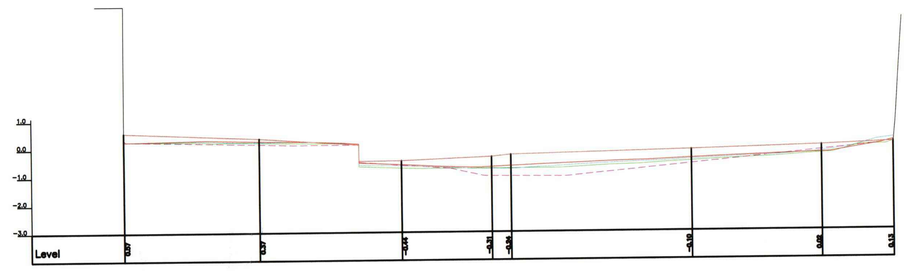

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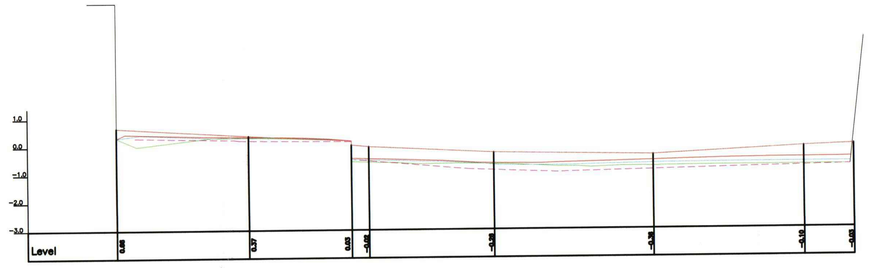

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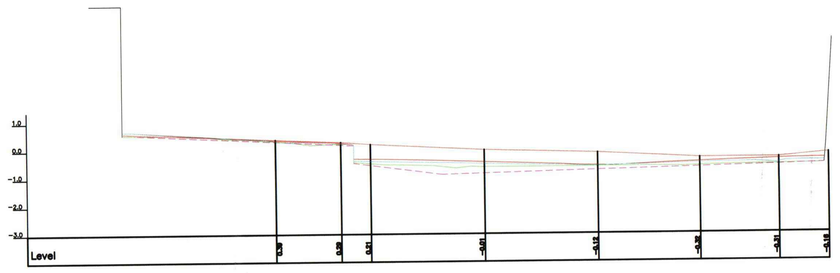

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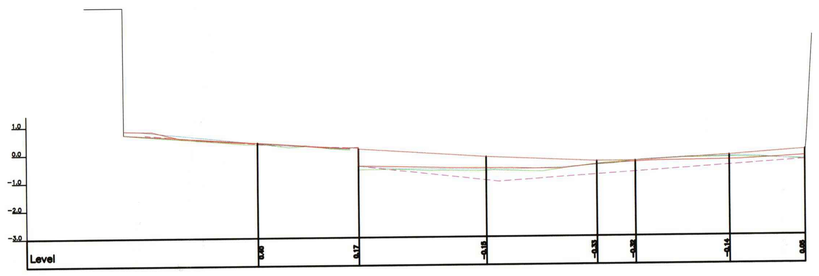

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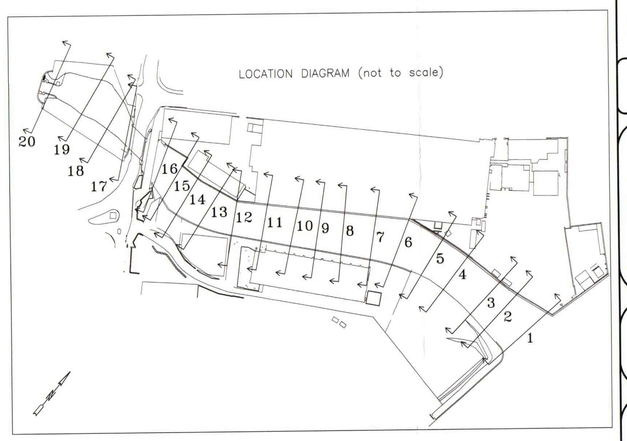

Aworth Section Line January 2007

Section lines from August 2003 survey

Section lines from May 2003 survey

Section lines from February 2003 survey

Section lines from February 1995 & June 2000 surveys.

NOTE:
SECTION LINES PRIOR TO THE AWORTH SURVEY JANUARY 2007 DERIVE FROM GLANVILLE SURVEY DATA UNDERTAKEN BETWEEN FEBRUARY 1995 AND AUGUST 2003.

LEVELLING:
ALL LEVELS ARE BASED ON EXISTING SURVEY CONTROL CLIENT DRAWING: ML3412100.

LLOYD'S REGISTER QUALITY ASSURANCE CERTIFICATED COMPANY

THE SURVEY ASSOCIATION

Aworth
SURVEY CONSULTANTS
LRQA Certificated Office
Norfolk House, Norfolk Way, Uckfield, TN22 1EP
Tel:- 01825 768319 Fax:- 01825 768310
als@aworth.co.uk alslondon@compuserve.com
Lombard Business Park, 8 Lombard Road, Wimbledon, London SW19 3TZ
Tel:- 020 8544 9959 Fax:- 020 8544 1186

Scale :- 1:100	Revision
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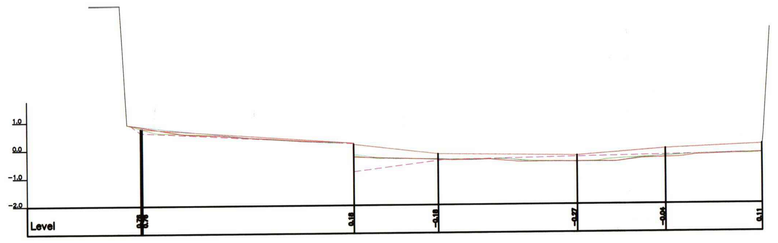
Drawing number 2814	Sheet CC-1
	Drawn MT
	Date 22/02/07

Project
LOTS ROAD POWER STATION
CHELSEA CREEK
SECTIONS 1-10

Client
HUTCHISON WHAMPOA PROPERTY
HUTCHISON HOUSE
5 HESTER ROAD
LONDON SW11 4AN



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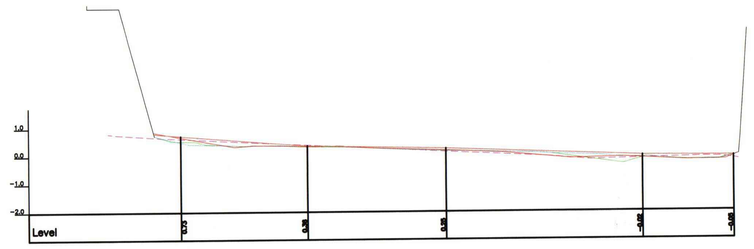

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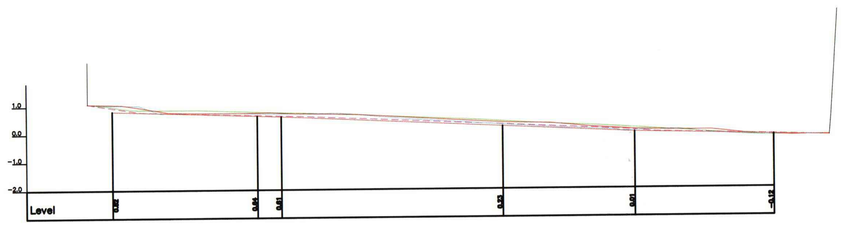

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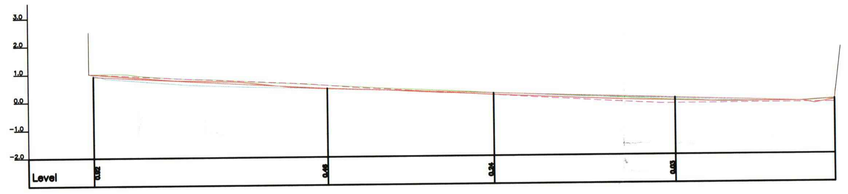

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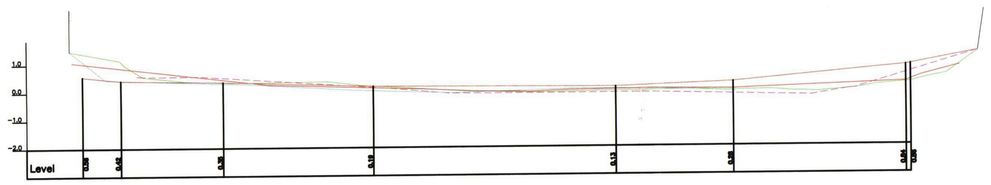

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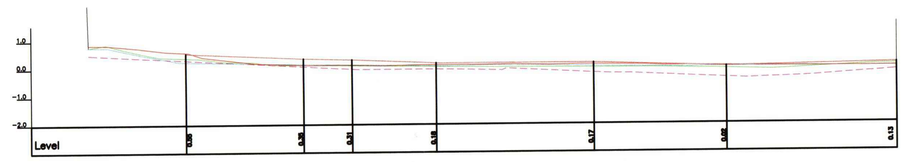

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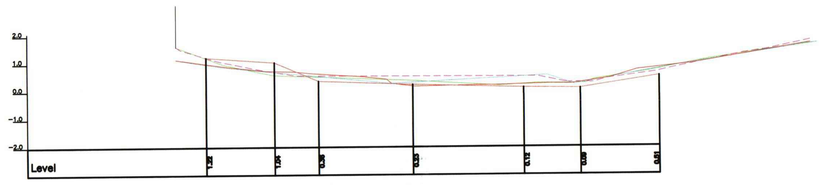

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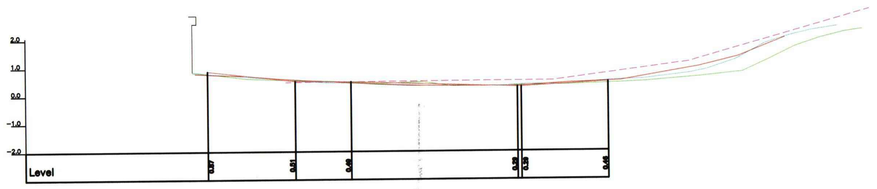

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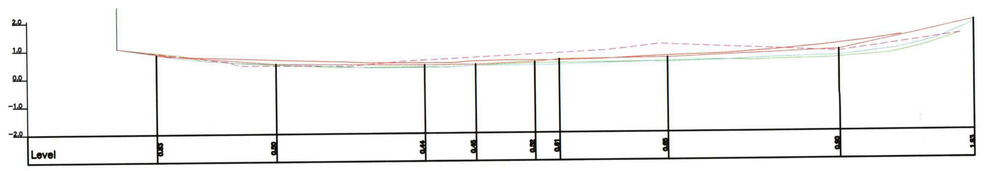
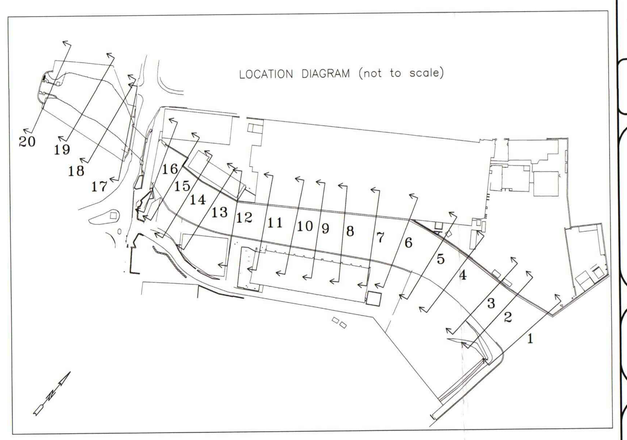


SECTION 19

SECTION 20



Aworth Section Line January 2007

Section lines from August 2003 survey.

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LEVELLING:
ALL LEVELS ARE BASED ON EXISTING SURVEY CONTROL CLIENT DRAWING: ML3412100.

LLOYD'S REGISTER QUALITY ASSURANCE CERTIFICATED COMPANY

THE SURVEY ASSOCIATION

Aworth
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als@aworth.co.uk alslondon@compuserve.com
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Tel:- 020 8544 9959 Fax:- 020 8544 1186

Scale :- 1:100	Revision
	Checked AP
Drawing number 2814 / Sheet CC-2	Drawn MT
	Date 22/02/07

Project
LOTS ROAD POWER STATION
CHELSEA CREEK
SECTIONS 11-20

Client
HUTCHISON WHAMPOA PROPERTY
HUTCHISON HOUSE
5 HESTER ROAD
LONDON SW11 4AN

Appendix B – Flood Storage Calculations

ARUP	Job No.	Sheet No.	Rev.
	123162	1 of 2	
	Member/Location		
Job Title: Lots Road	Drg. Ref.	SK004, SK006, SK007, SK007	
Calculation: Flood Storage Volumes	Made by EJW	Date 05-12-07	Chd. CU

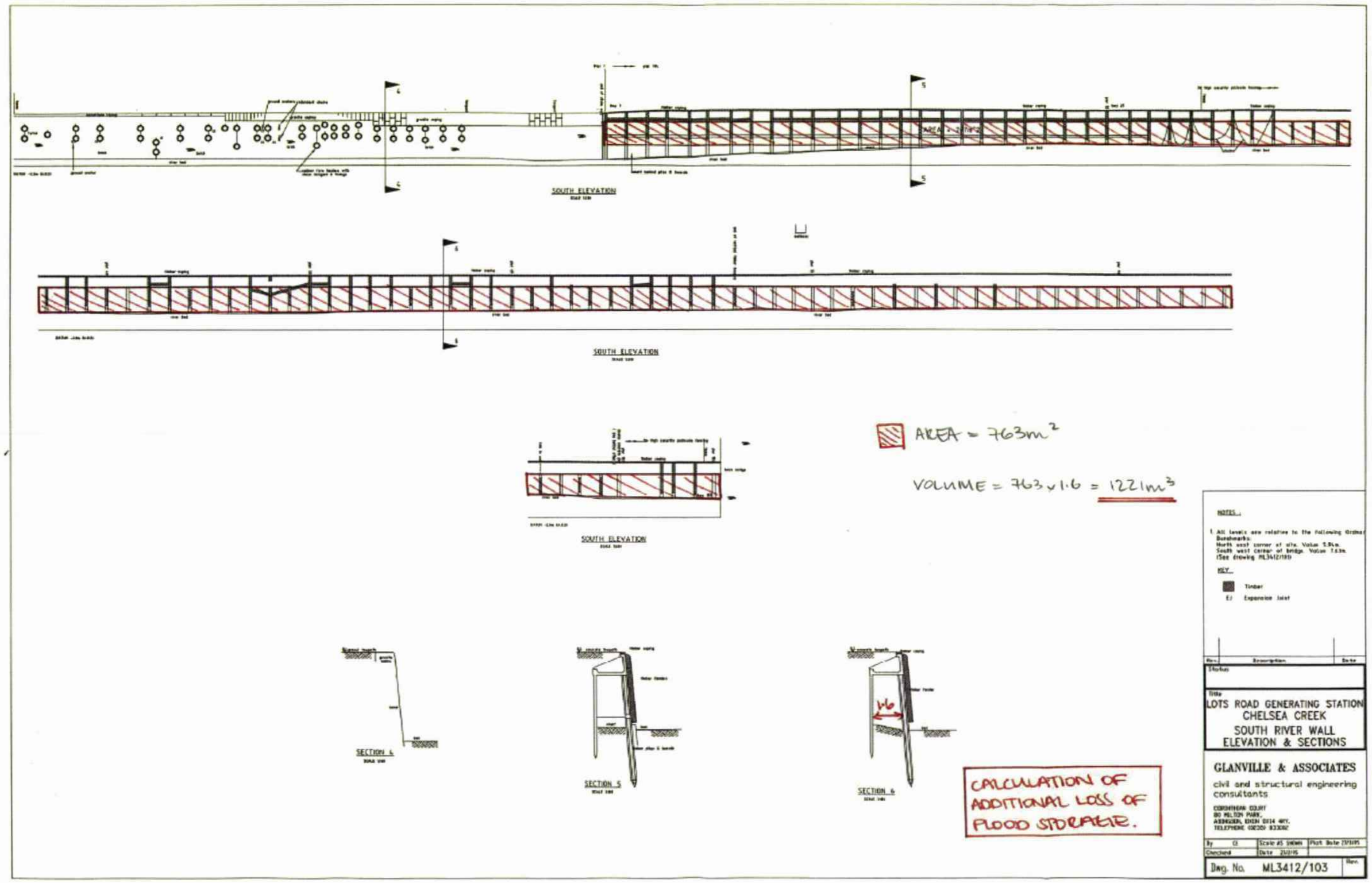
		LOSS						GAIN			
CH	Length	Areas from Sections A1	A2	A3	Area under wall A4	Total area	Volume	Areas from Sections A1	A2	Total Area	Volume
m	m	m2	m2	m2	m2	m2	m3	m2	m2	m2	m3
10	10	5.2	4.6		4.9	14.7	147			0	0
20	10	10.5	1.9		0	12.4	124			0	0
30	10	8.8	1.6	2.6	0	13	130	0.9		0.9	9
40	10	5.8	8.3	1.1	0	15.2	152	9.7	2.4	12.1	121
50	10	3.5	7.6		4.9	16	160	25.5	3.4	28.9	289
60	8	1.1	1	0.6	4.9	7.6	61	26.5	7.6	34.1	273
70	8	0.8			4.9	5.7	46	27.9	26.7	54.6	437
80	10	0.7	0.9		4.9	6.5	65	28.5	35.3	63.8	638
90	10	1.3	1.3		4.9	7.5	75	23.7	17.7	41.4	414
100	10	1.2	5.5		4.9	11.6	116	17.6	5.8	23.4	234
110	10	2.9	0		4.9	7.8	78	27		27	270
120	10	7.1			4.9	12	120	25.9		25.9	259
130	9	10.2			4.9	15.1	136	23.7		23.7	213
140	7.5	12.8			4.9	17.7	133	13.6		13.6	102
150	9	13.7			4.9	18.6	167	19		19	171
160	10	11.9			4.9	16.8	168	7.3		7.3	73
170	10	12.6			4.9	17.5	175	5.7		5.7	57
180	10	10.9	0.2		4.9	16	160	2.9		2.9	29
190	10	9.9	0.3		4.9	15.1	151	1.1		1.1	11
200	10	10.3			4.9	15.2	152			0	0
210	10	6.3			4.9	11.2	112			0	0
220	10	6.1			4.9	11	110			0	0
230	10	5.3			4.9	10.2	102			0	0
240	10	14.5			4.9	19.4	194			0	0
250	10	20			4.9	24.9	249			0	0
260	10	25.1			4.9	30	300			0	0
	251.5						3583				3600

Net gain	m3	17

Notes

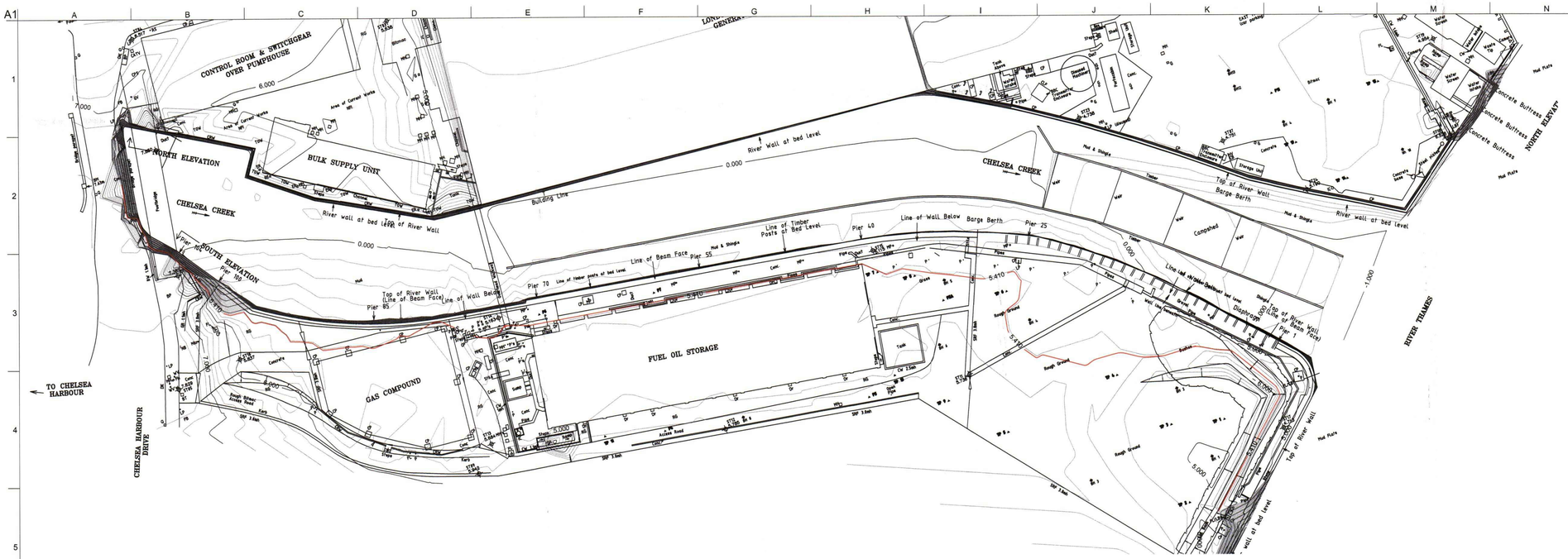
1. See Sheet 2 of 2 for calculation of fill under southern wall
2. See SK004, 006 to 008 for cross section information

ARUP	Job No.	Sheet No.	Rev.
	123162	2 of 2	00
	Member/Location		
Job Title: Lots Road	Drg. Ref.		
Calculation: Flood Storage Calculations	Made by: EJW	Date: 05-12-07	Chd.: CU

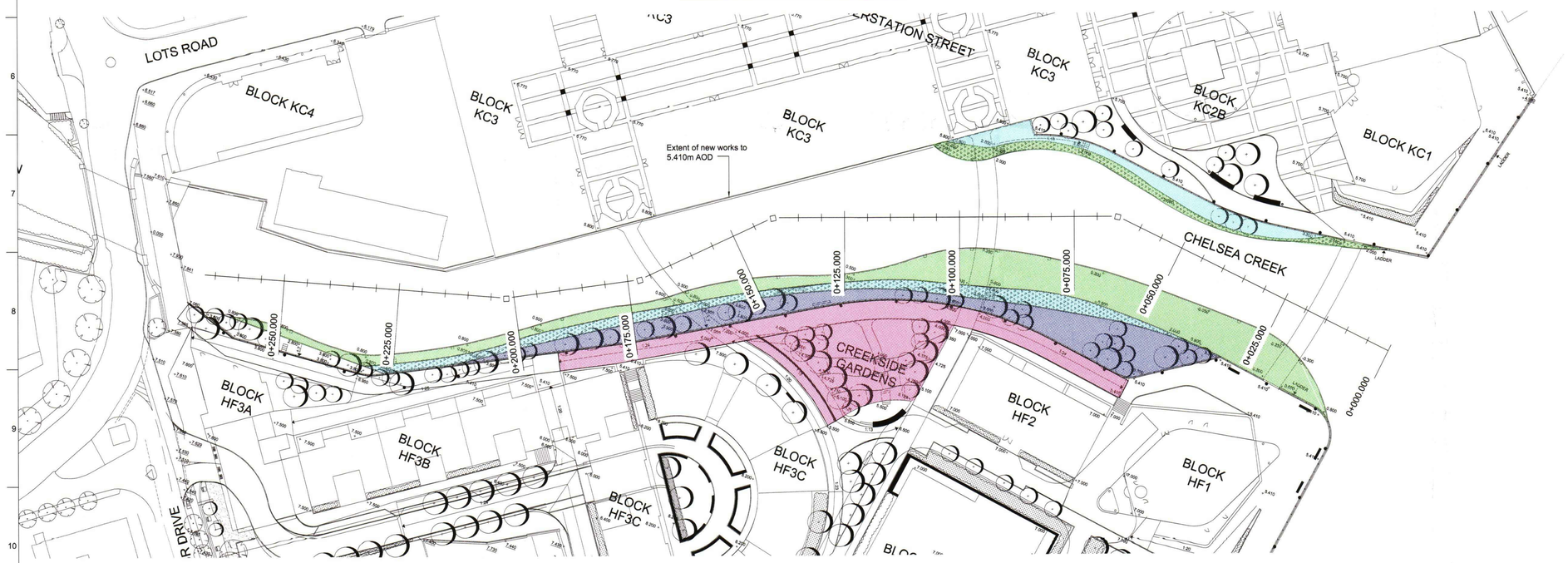


Volume of total undercroft beneath wall	1221 m^3
Total length of creek assessed	251.5 m
Length not infilled beneath CH20, 30, 40	30 m
Length filled	221.5 m
Therefore volume of fill	1075.4 m^3
Therefore average at each chainage	4.9 m^2

Notes:
1. Existing contours derived from levels as illistrated on 'Lots Road Generating Station River Wall Survey', drawing no. ML3412/101 produced by Glanville & Associates 23.02.95.
2. Creek chainages nominal only. For corresponding cross sections, refer drawings SK022 - SK024.



EXISTING SITE & CONTOURS



PROPOSED PLATFORM LEVELS

Proposed Finished Levels

- 0.8m AOD
- 2.0m to 2.8m AOD
- 3.800m AOD
- to 5.410m AOD

DIR | AK
K.C. | 6 DEC 2007 | PLANNING
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HBS | ARB | FPLN | DES | FEES

Issue	Date	By	Chkd	Appd
01	05/12/07	MP	EW	CU
Revised terrace layout				

Client
Hutchison Whampoa Properties (Europe) Limited

Job Title
Chelsea Creek

Scale at A1 1:500

Discipline Civil

ARUP

Drawing Title
Existing Countours and Proposed Platform Levels

Drawing Status
Information

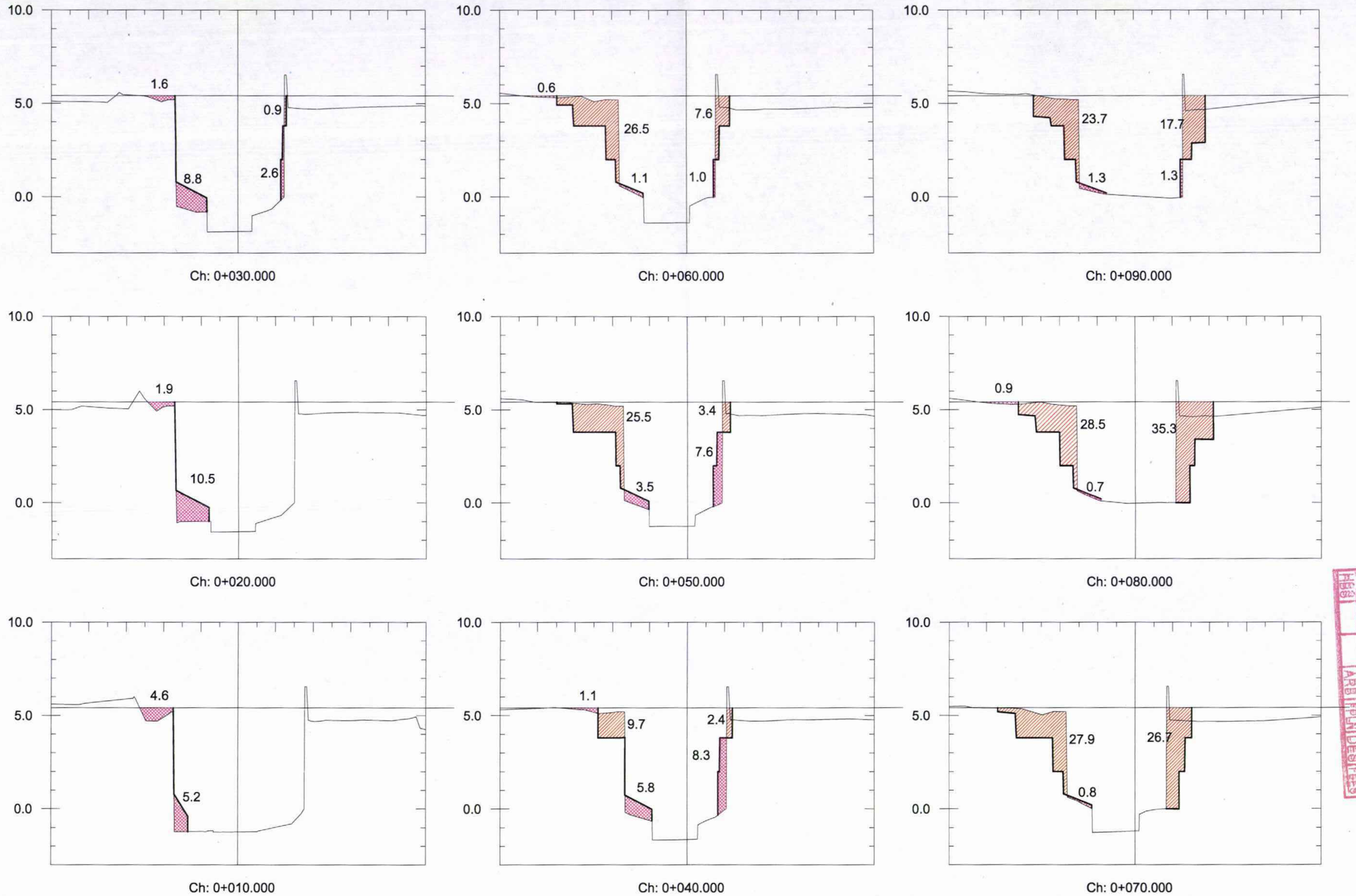
Job No	Drawing No	Issue
123162	SK004	01

Do not scale

© Arup

J:\123000\123162-00\11 TCL Drawings\Acad\SK004.dwg 6 Dec 2007 09:47:47 id: 5850C9b3-EB88-4C03-91 3F-70066A27CF70 emily.whitehill

PLANS



NOTE:
1. Cross sections representative of level changes needed to maintain current storage. Refer toSK004 Existing contours and proposed platform levels for chainage locations.

Gain in flood storage | Loss in flood storage | Proposed terrace profile | Existing creek profile and river walls

Issue	Date	By	Chkd	Appd
00	05/12/07	EW	EW	CU

Client: Hutchison Whampoa Properties (Europe) Limited

Job Title: Lots Road London

Scale at A1: H 1:500 V 1:100

Discipline: Civil

ARUP

Drawing Title: Flood Storage Volume Illustrations Chelsea Creek Cross Sections Sheet 1 of 3

Drawing Status: PRELIMINARY

Job No	Drawing No	Issue
123162	SK006	00

R.B.K.C. 10 DEC 2007 PLANNING
EX DIR | HDC | TP | CAC | AD | CHU | AO | AK
HBS | N | C | S | APPLIQ | REC | ARB | PLN | DES | FEES

Do not scale

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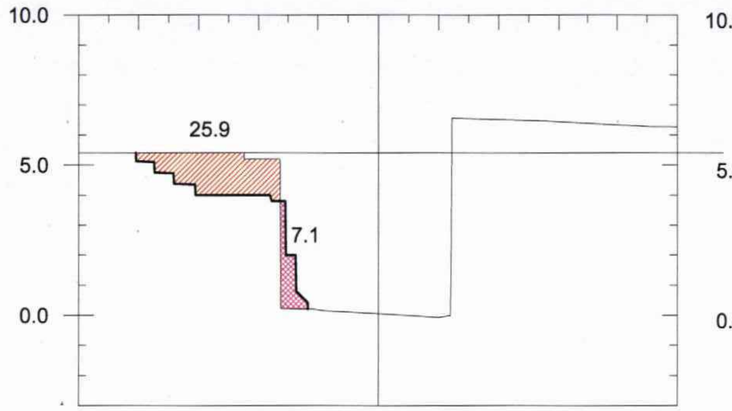

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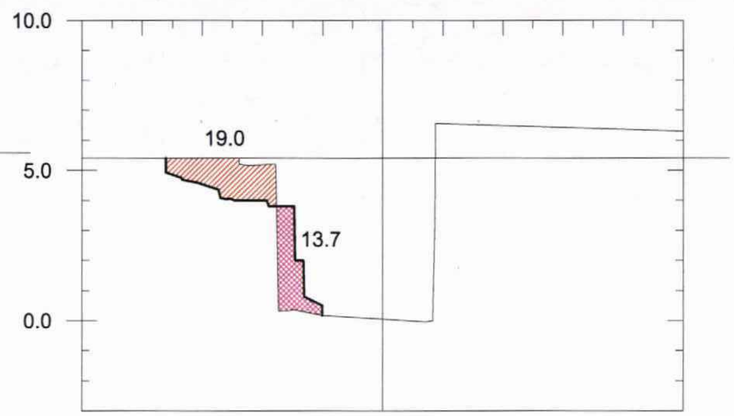

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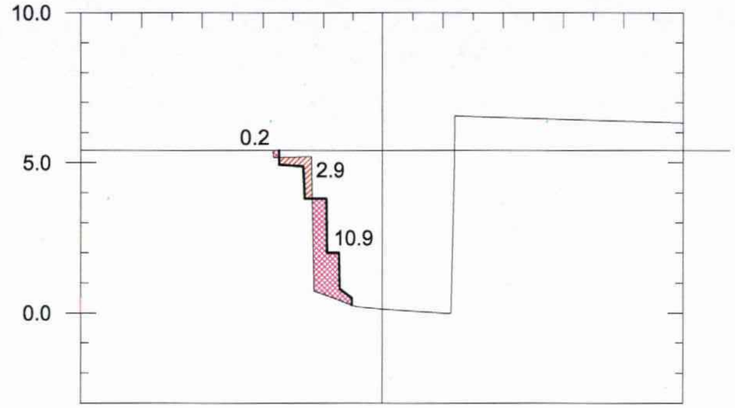

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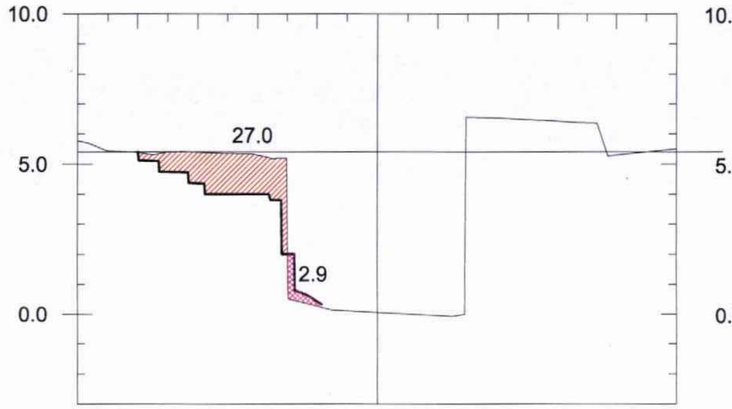

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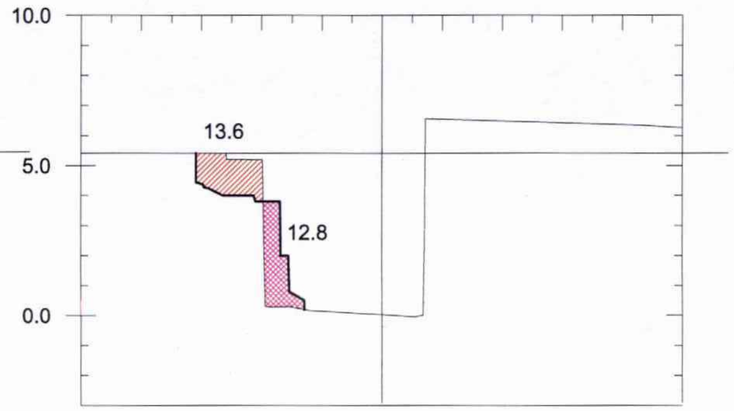

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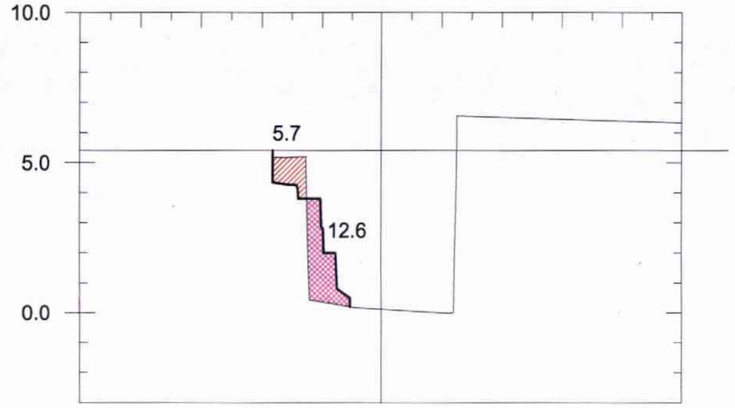

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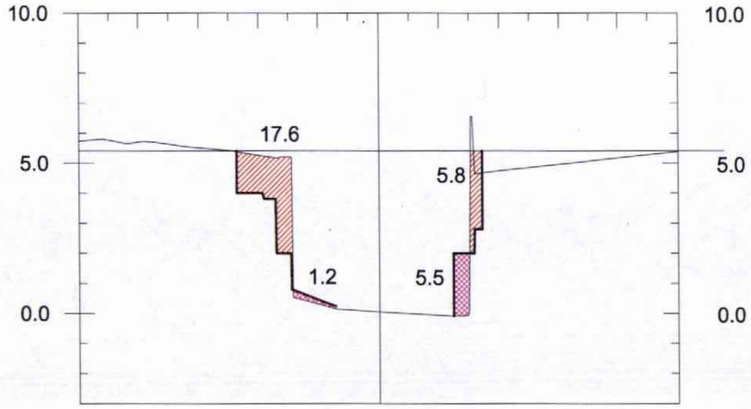

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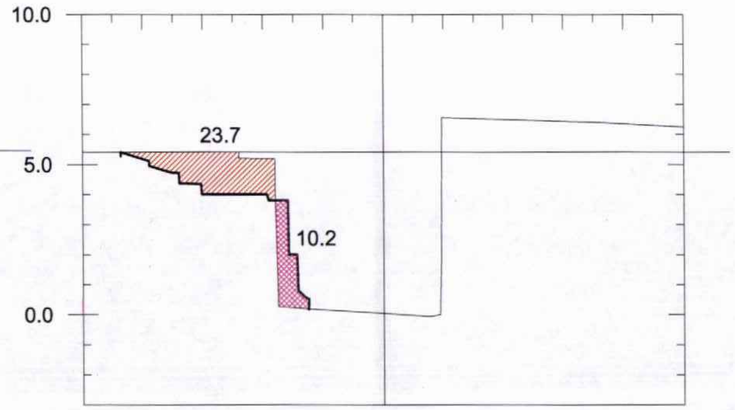

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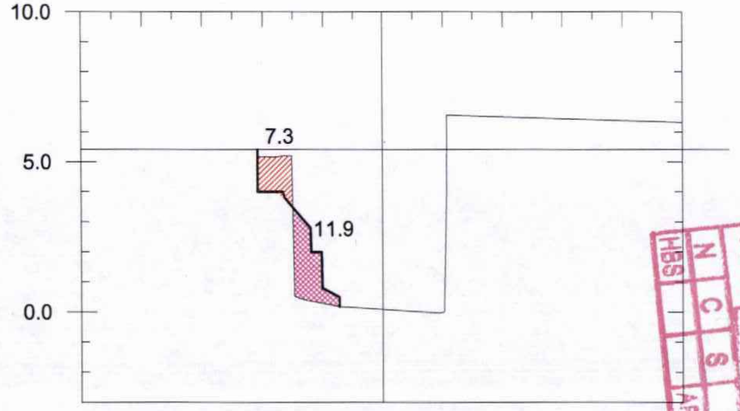

Ch: 0+160.000

NOTE:
1. Cross sections representative of level changes needed to maintain current storage. Refer toSK004 Existing contours and proposed platform levels for chainage locations.

Gain in flood storage — Loss in flood storage — Proposed terrace profile — Existing creek profile and river walls

Issue	Date	By	Chkd	Appd
00	05/12/07	EW	EW	CU

Client: Hutchison Whampoa Properties (Europe) Limited

Job Title: Lots Road London

Scale at A1: H 1:500 V 1:100

Discipline: Civil

ARUP

Drawing Title: Flood Storage Volume Illustrations Chelsea Creek Cross Sections Sheet 2 of 3

Drawing Status: PRELIMINARY

Job No	Drawing No	Issue
123162	SK007	00

R.B. K.C. 10 DEC 2007 PLANNING
EX DIR HDC TP CAD LAD CLU AO AK
HBS N C S ARB FLN DES APPLICATION REC DEES

Do not scale

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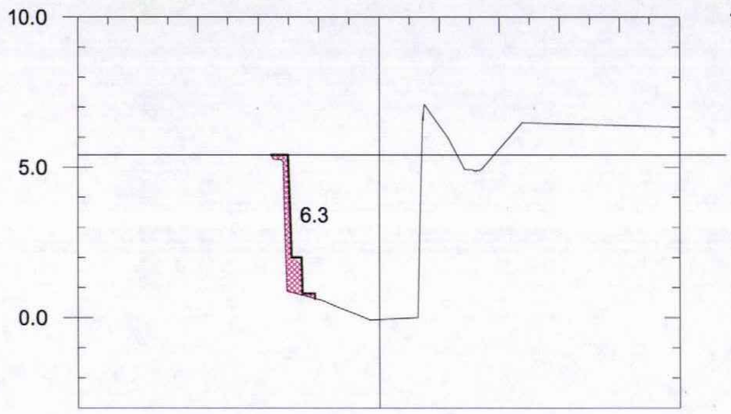

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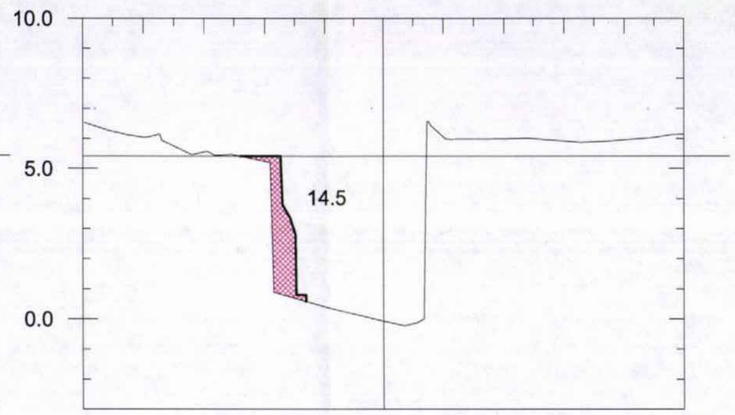

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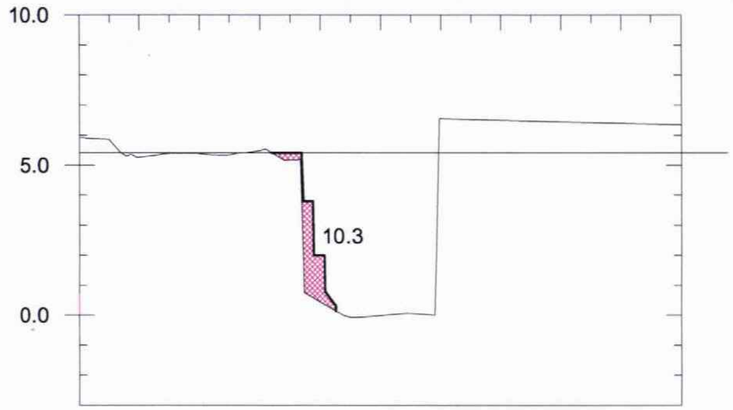

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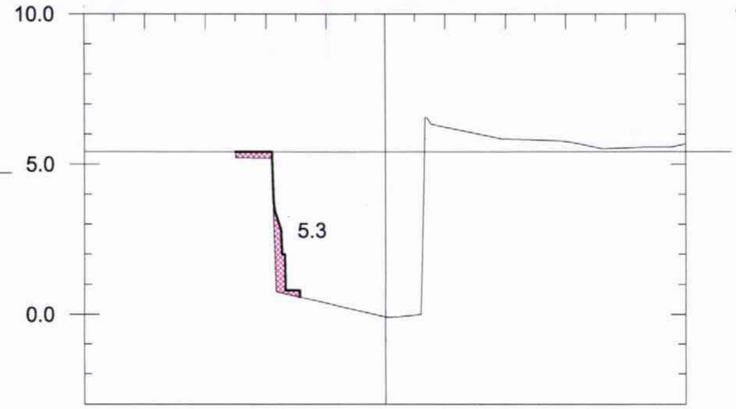

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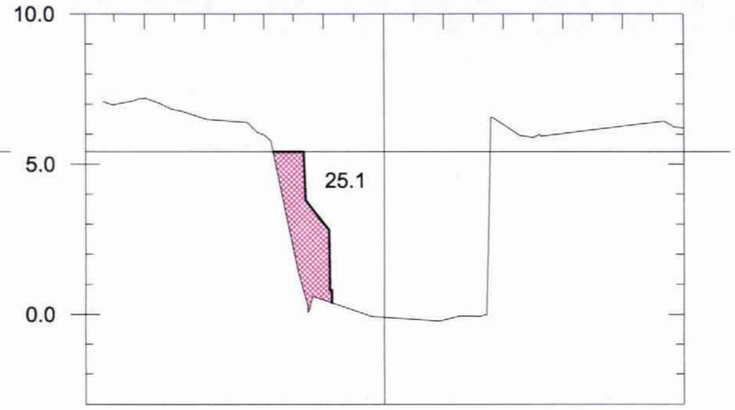

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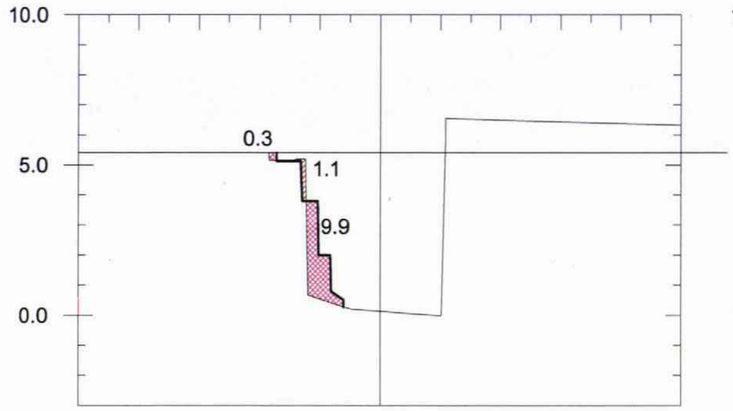

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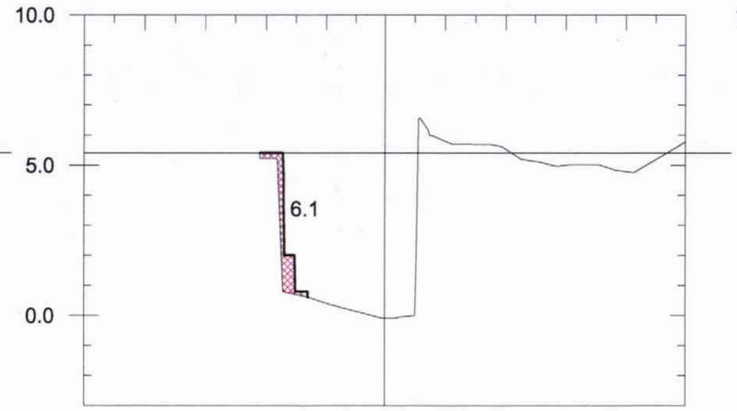

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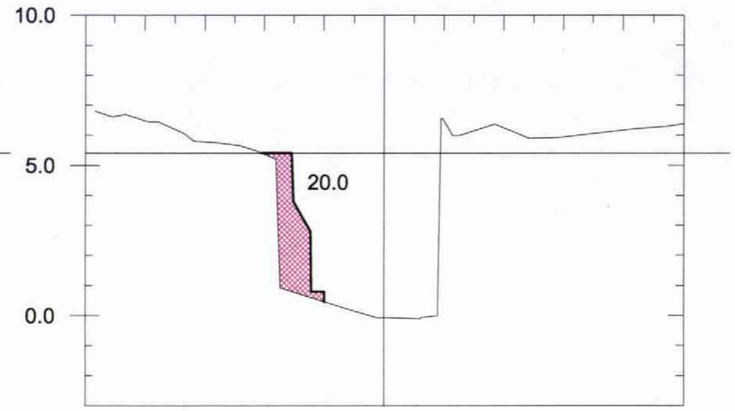

Ch: 0+250.000

NOTE:
1. Cross sections representative of level changes needed to maintain current storage. Refer toSK004 Existing contours and proposed platform levels for chainage locations.

Gain in flood storage

Loss in flood storage

Proposed terrace profile

Existing creek profile and river walls

Issue	Date	By	Chkd	Appd
00	05/12/07	EW	EW	CU

Client
Hutchison Whampoa Properties (Europe) Limited

Job Title
Lots Road London

Scale at A1 H 1:500 V 1:100

Discipline Civil

ARUP

Drawing Title
Flood Storage Volume Illustrations
Chelsea Creek Cross Sections
Sheet 3 of 3

Drawing Status
PRELIMINARY

Job No	Drawing No	Issue
123162	SK008	00

EX DIR HDC TP CAC AD CLU AO
R.B. K.C. 10 DEC 2007 AK
N C S HBS ARB APP IO REC PLANNING
Do not scale
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Appendix C – Typical Engineering Cross sections of Creek

A3

Lots Road

Chelsea habour Drive

Mooring posts

Gabion walls

NOTES:

1. Refer to Drawing Nos. 123162-01-002 to 005 for section details of gabion walls.
2. Mooring posts to be fitted with red cans marking the Port Hand (LBHF Side of creek).
3. Mooring post at mouth of creek to have red lights at Port Hand.
4. Mooring posts to be fitted with green cones marking the Starboard Hand (RBKC Side of creek).
5. Mooring post at mouth of creek to have green light at Starboard Hand.

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Issue	Date	By	Chkd	Appd
B	06/12/07	DB	JP	JP
A	28/11/07	ACC	EW	CU
	24/07/07	ACC	EW	CU

Client: Hutchison Whampoa Ltd.

Job Title: Lots Road

Drawing Title: Chelsea Creek Terraces Engineering Design of Gabion Retaining Walls + Mooring Post Locations Plan

Scale at A3: 1:1000

Plot ID: E18514CC-A77D-438E-AB65-BD99B9B554B7

Drawing Status: **PRELIMINARY**

Job No	Drawing No	Issue
123162-00	123162-01-001	B

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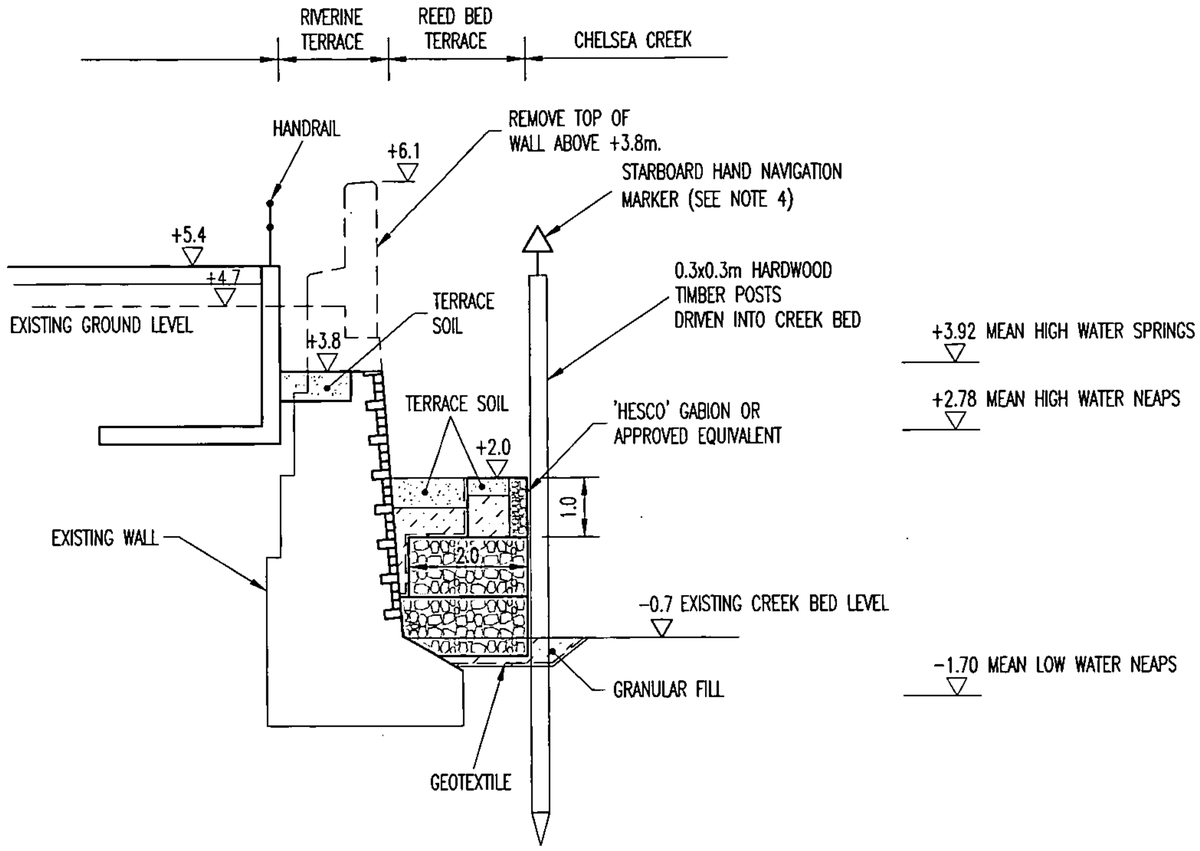

KEY:

- TERRACE SOIL
- GRANULAR FILL
- STONES

NOTES:

1. Refer to Drawing No. 123162-01-001 for location of section.
2. Refer to Townshend drawing TOWN 352 (08) 7005 for details of landscaping.
3. Materials:
   - Imported granular fill to be: Highways Agency table 6/1 type 6A fill.
   - Gabion baskets to be from approved supplier.
     Wires to be galvanised and plastic coated with rock filling, all to BS8002.
   - Terrace soil to be to landscape architects specification.
4. Mooring posts to be fitted with green cones marking the Starboard Hand (RBKC Side of creek). Mooring post at mouth of creek to have green light at Starboard Hand.

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Issue	Date	By	Chkd	Appd
B	06/12/07	DB	JP	JP
A	28/11/07	ACC	EW	CU
	25/07/07	DB	EW	CU

Client: Hutchison Whampoa Ltd.

Job Title: Lots Road

Drawing Title: Chelsea Creek Terraces Engineering Design of Retaining Walls Section 4-4

Scale at A3: 1:100

Plot ID: BAFF46CC-6106-4294-BB59-7A64106F686E

Drawing Status: **PRELIMINARY**

Job No	Drawing No	Issue
123162-00	123162-01-005	B

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