Proposed Interim Sewage Treatment Plant and Effluent Reuse Facility at Wo Shang Wai, Yuen Long

Environmental Impact Assessment Report – Figures and Appendices

June 2018

Profit Point Enterprises Limited

MOTT MACDONALD

Proposed Interim Sewage Treatment Plant and Effluent Reuse Facility at Wo Shang Wai, Yuen Long

Environmental Impact Assessment Report –
Figures and Appendices

June 2018

Profit Point Enterprises Limited

72-76/F, Two International Finance Centre, 8 Finance Street, Central, Hong Kong

Mott MacDonald, 20/F AIA Kowloon Tower, Landmark East, 100 How Ming Street, Kwun Tong, Kowloon, Hong Kong
T +852 2828 5757 **F** +852 2827 1823 w **W** www.mottmac.com

MOTT MACDONALD

Figures

Appendices

Appendix 2.1 Approved Sewerage Impact Assessment

Appendix 4.1 Letter from MTR Corporation
Appendix 4.2 Construction Noise Impact Assessment in Approved WSW VEP (ERR for Change in Master Layout Plan) (Application No. VEP-538/2017)
Appendix 4.3 Fixed Noise Sources Impact Assessment

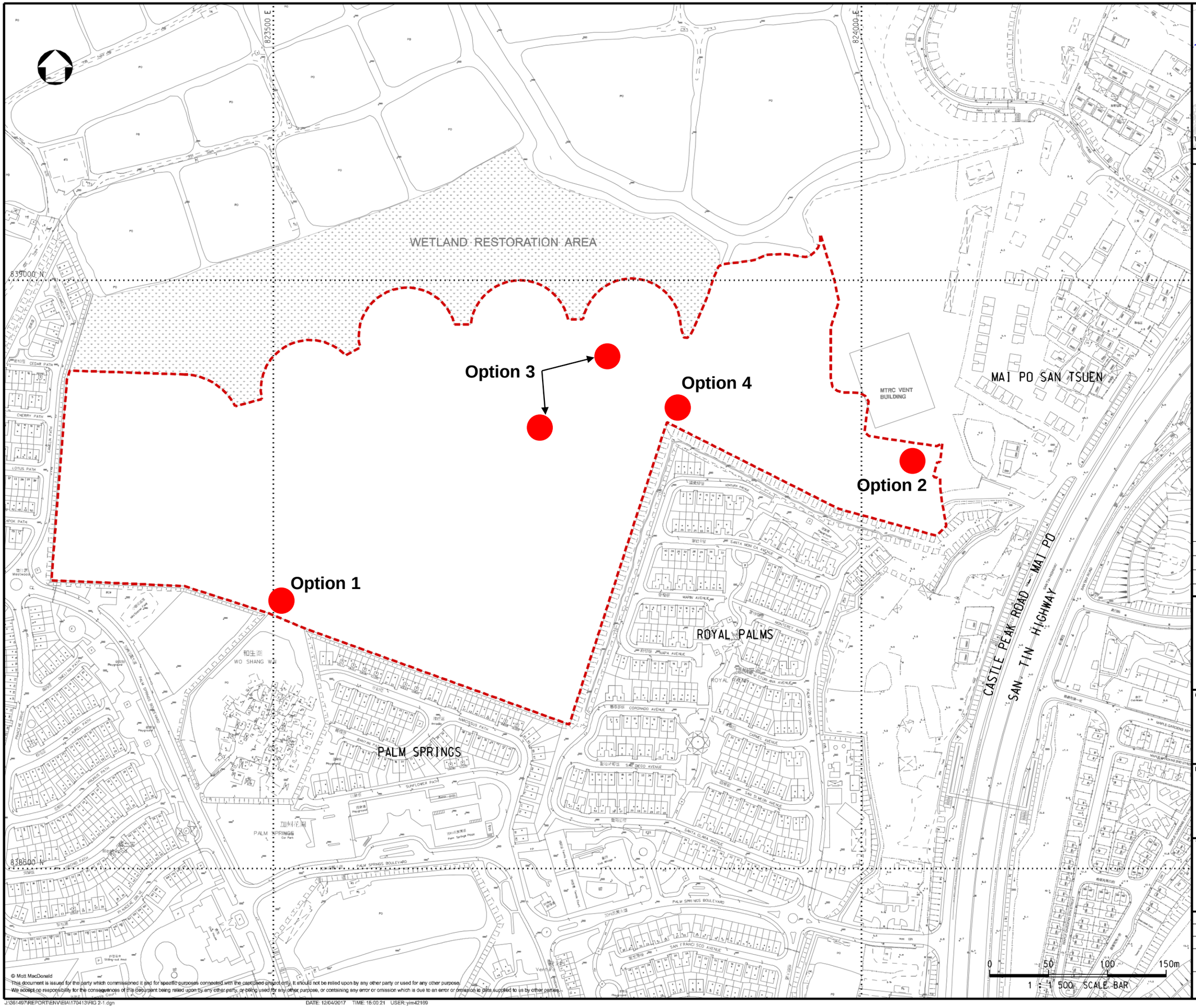
Appendix 5.1 Calculations for Sewage Loads
Appendix 5.2 Calculations for Reclaimed Water Demand

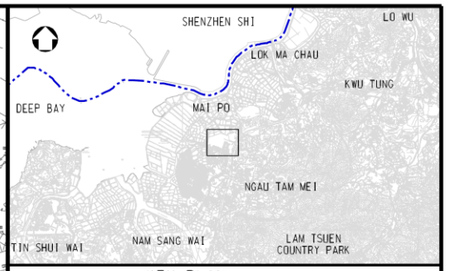
Appendix 6.1 Remediation Report
Appendix 6.2 Site Photos of STP Project Area
Appendix 6.3 Approval Letter of SSTP from EPD
Appendix 6.4 Chemical Testing Results
Appendix 6.5 Biological Testing Results
Appendix 6.6 Approval Letter of SQR from EPD

Appendix 7.1 Plates – Representative Photographs of Habitats
Appendix 7.2 Bird Species Recorded in Major Habitats within the Project Site and the Study Area
Appendix 7.3 Mammal Species Recorded in Major Habitats within the Project Site and the Study Area
Appendix 7.4 Amphibian and Reptile Species Recorded in Major Habitats within the Project Site and the Study Area
Appendix 7.5 Butterfly Species Recorded in Major Habitats within the Project Site and the Study Area
Appendix 7.6 Dragonfly Species Recorded in Major Habitats within the Project Site and the Study Area

Appendix 8.1 Tree Assessment Schedule of Tree Groups within the Landscape Study Area

Figures





KEY PLAN (1:100000)

LEGEND

PROJECT BOUNDARY (COVERING THE ASSOCIATED WORKS)

PROJECT LOCATION OPTIONS

Rev	Date	Drawn	Description	Ch'k'd	App'd
P3	APR 17	MING	GENERAL REVISION	EY	EC
P2	JAN 17	MING	GENERAL REVISION	EY	JFP
P1	SEP 16	MING	FIRST ISSUE	EY	JFP

MOTT MACDONALD

20/F AIA Kowloon Tower
Landmark East
100 How Ming Street
Kwun Tong, Kowloon
Hong Kong
T +852 2828 5757
F +852 2827 1823
W mottmac.com

Client

PROFIT POINT ENTERPRISES LTD.

Project

PROPOSED INTERIM SEWAGE TREATMENT PLANT AND EFFLUENT REUSE FACILITY AT WO SHANG WAI, YUEN LONG

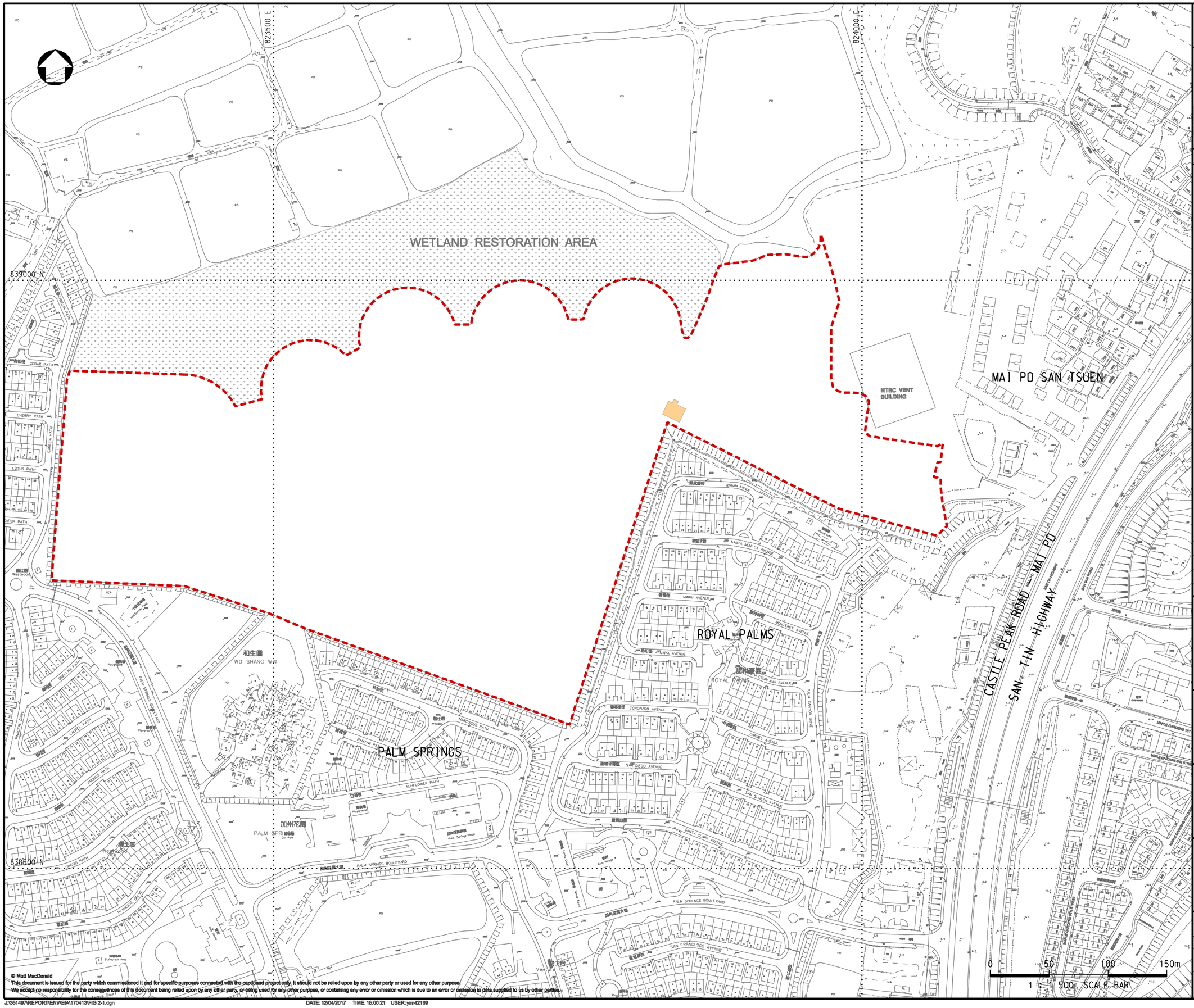
Title

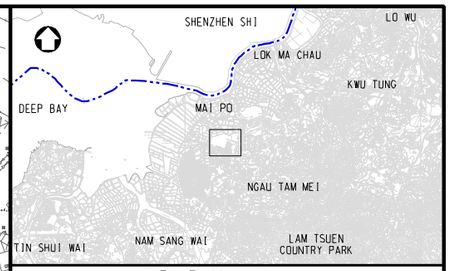
PROJECT LOCATION OPTIONS

Designed	EY		Eng check	JC	
Drawn	MING		Coordination	JC	
Dwg check	EY		Approved	EC	
Scale at A1 1:1500		Status PRE		Rev P3	

Drawing Number

FIGURE 2.1a





KEY PLAN (1:100000)

LEGEND

- PROJECT BOUNDARY (COVERING THE ASSOCIATED WORKS)
- PROPOSED SEWAGE TREATMENT PLANT (ABOVE-GROUND STRUCTURE)

Rev	Date	Drawn	Description	Ch'k'd	App'd
P3	APR 17	MING	GENERAL REVISION	EY	EC
P2	JAN 17	MING	GENERAL REVISION	EY	JFP
P1	SEP 16	MING	FIRST ISSUE	EY	JFP

MOTT MACDONALD

20/F AIA Kowloon Tower
Landmark East
100 How Ming Street
Kwun Tong, Kowloon
Hong Kong
T +852 2828 5757
F +852 2827 1823
W mottmac.com

Client

PROFIT POINT ENTERPRISES LTD.

Project

PROPOSED INTERIM SEWAGE TREATMENT PLANT AND EFFLUENT REUSE FACILITY AT WO SHANG WAI, YUEN LONG

Title

PROJECT LOCATION

Designed	EY		Eng check	JC	
Drawn	MING		Coordination	JC	
Dwg check	EY		Approved	EC	

Scale at A1: 1:1500

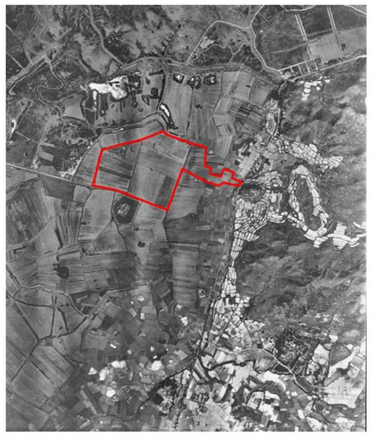
Status: PRE

Rev: P3

Drawing Number

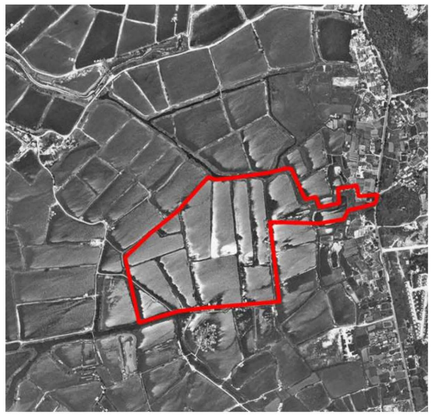
FIGURE 2.1b

J:\361497\REPORT\ENV\EIA\170413\FIG 2-1.dgn DATE: 12/04/2017 TIME: 15:00:21 USER: yim42169

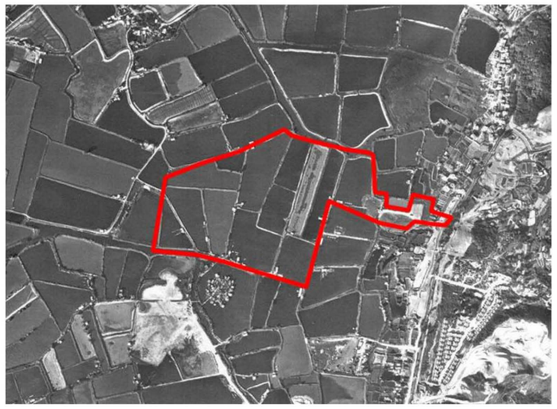


1945 – brackish paddies

1964 – freshwater fish ponds



1984 – continued fish ponds



1987 – commencement of filling of fish ponds

1990 – 90% of site filled

1991 – 100% of site filled

1994 – open storage in northeast of site & vegetation elsewhere

2004 – current situation – no change since 1994

Notes

Key to symbols

Reference drawings

Rev	Date	Drawn	Description	Ch'k'd	App'd

MOTT MACDONALD
20/F AIA Kowloon Tower
Landmark East
100 How Ming Street
Kwun Tong, Kowloon
Hong Kong
T +852 2828 5757
F +852 2827 1823
W mottmac.com

Client

PROFIT POINT ENTERPRISES LTD.

Project

PROPOSED INTERIM SEWAGE TREATMENT PLANT AND EFFLUENT REUSE FACILITY AT WO SHANG WAI, YUEN LONG

Title

HISTORICAL AERIAL PHOTOS

Designed			Eng check		
Drawn			Coordination		
Dwg check			Approved		
Scale at A1		Status		Rev	

Drawing Number

FIGURE 2.2

823800 E

823950 E

838900 N

SLUDGE TANK

ANOXIC TANK

ANOXIC TANK

AEROBIC / MEMBRANE TANK

AEROBIC / MEMBRANE TANK

EQUALIZATION TANK

RECLAIMED WATER SUPPLY PUMP ROOM

RECLAIMED WATER STORAGE TANK NO.1

RECLAIMED WATER STORAGE TANK NO.2

EMERGENCY STORAGE TANK

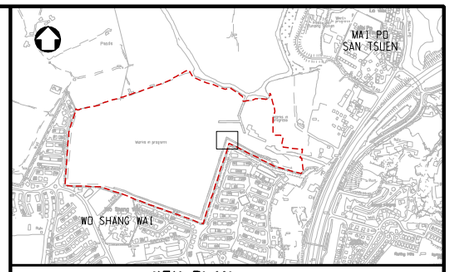
SWITCHROOM & CONTROL ROOM

UV DISINFECTION

TREATED EFFLUENT COLLECTION TANK

0 2 4 6 8 10 m

1 : 100 SCALE BAR



KEY PLAN (1:10000)

LEGEND

PROJECT BOUNDARY (COVERING THE ASSOCIATED WORKS)

PROPOSED EFFLUENT REUSE FACILITY (UNDERGROUND)

Rev	Date	Drawn	Description	Ch'k'd	App'd
P1	JUN 17	MING	FIRST ISSUE	SC	EC

MOTT MACDONALD

20/F AIA Kowloon Tower
Landmark East
100 How Ming Street
Kwun Tong, Kowloon
Hong Kong
T +852 2828 5757
F +852 2827 1823
W mottmac.com

Client

PROFIT POINT ENTERPRISES LTD.

Project

PROPOSED INTERIM SEWAGE TREATMENT PLANT AND EFFLUENT REUSE FACILITY AT WO SHANG WAI, YUEN LONG

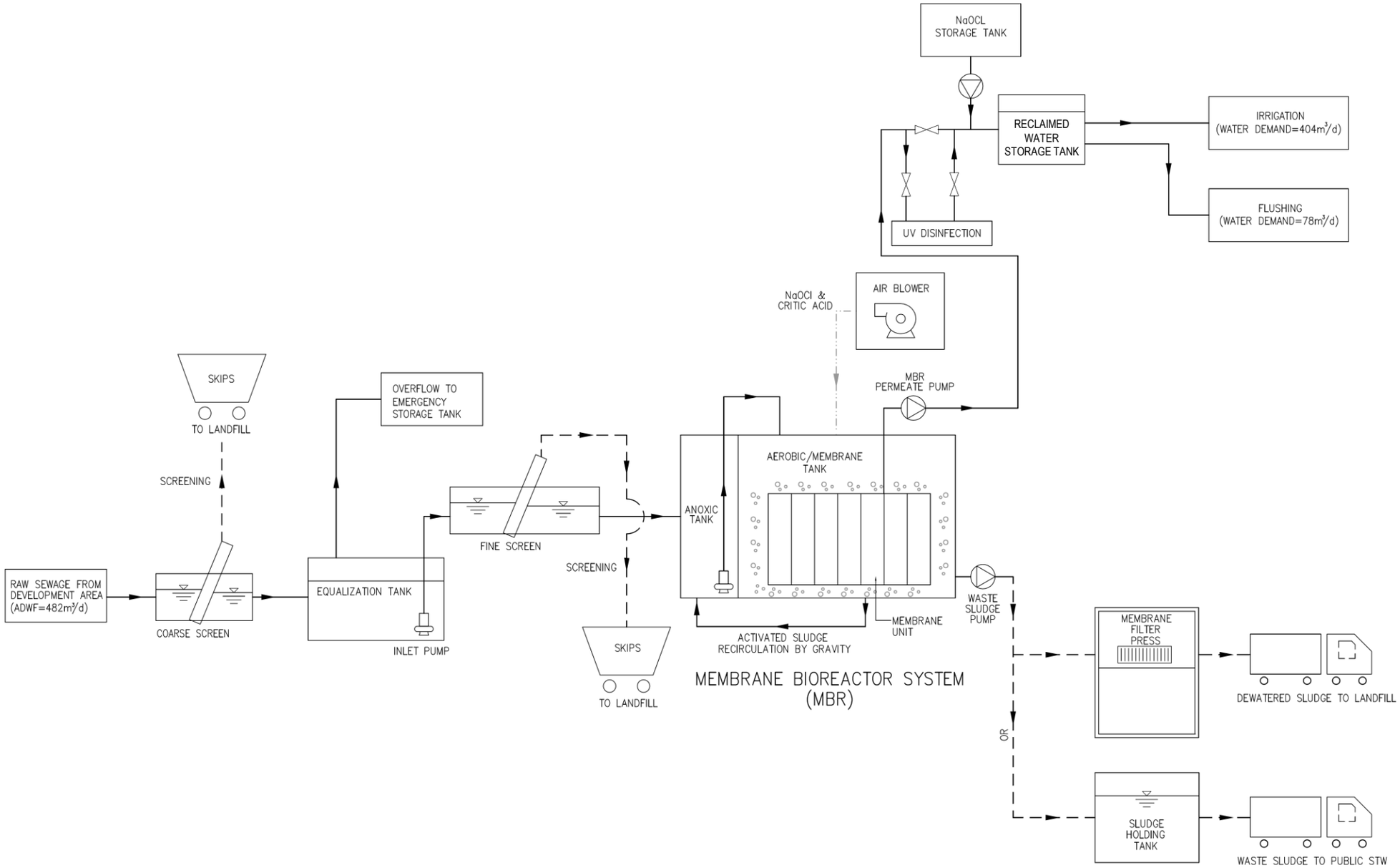
Title

PROPOSED EFFLUENT REUSE FACILITY

Designed	SC		Eng check	JC	
Drawn	MING		Coordination	JC	
Dwg check	SC		Approved	EC	
Scale at A1 1:100		Status PRE		Rev P1	

Drawing Number

FIGURE 2.3



Notes

Key to symbols

LEGEND:

SEWAGE FLOW

SLUDGE/SCREENING/GRIT FLOW

AIR FLOW

Reference drawings

Rev	Date	Drawn	Description	Chk'd	App'd
	Mar 18				

MOTT MACDONALD

20/F AIA Kowloon Tower
Landmark East
100 How Ming Street
Kwun Tong, Kowloon
Hong Kong
T +852 2828 5757
F +852 2827 1823
W mottmac.com

Client

PROFIT POINT ENTERPRISES LTD.

Project

PROPOSED INTERIM SEWAGE TREATMENT PLANT AND EFFLUENT REUSE FACILITY AT WO SHANG WAI, YUEN LONG

Title

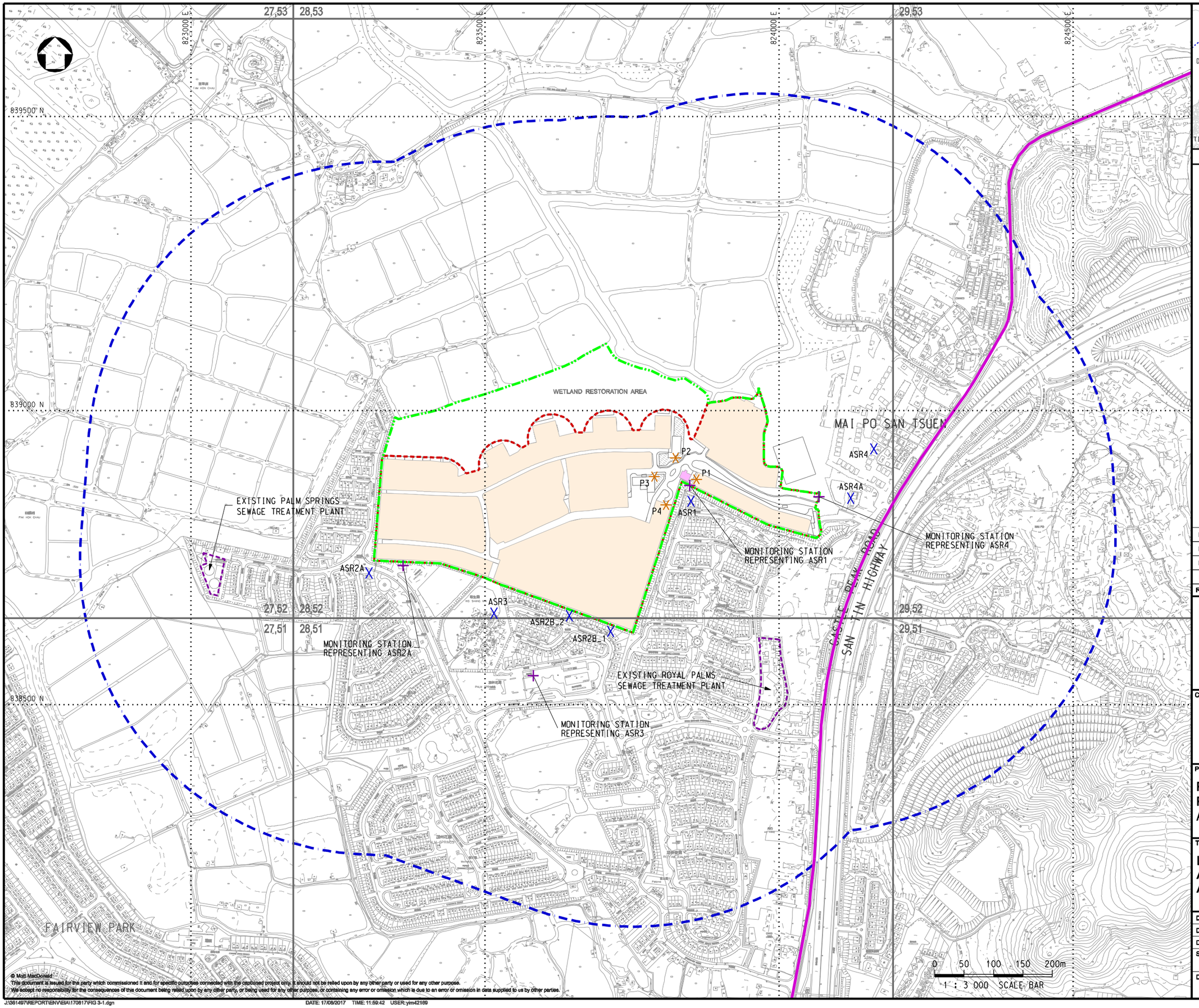
PROCESS FLOW DIAGRAM OF INTERIM ON-SITE STP

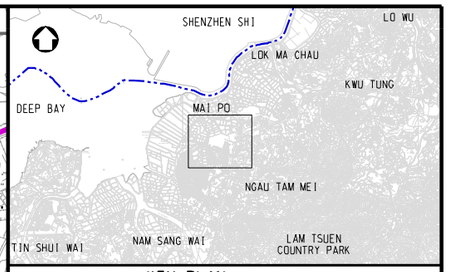
Designed			Eng check		
Drawn			Coordination		
Dwg check			Approved		
Scale at A1 N.T.S		Status		Rev	

Drawing Number

FIGURE 2.4

J:\361497\CAD_ADMIN\MMH-361497-P-A1_TLB-N.dgn DATE: 27/09/2016 TIME: 09:47:51 USER: ym42169





KEY PLAN (1:100000)

LEGEND

- 500m STUDY AREA
- PROJECT BOUNDARY (COVERING THE ASSOCIATED WORKS)
- COMPREHENSIVE DEVELOPMENT AT WO SHANG WAI (EP-311/2008/D)
- PROPOSED SEWAGE TREATMENT PLANT (ABOVE-GROUND STRUCTURE)
- WO SHANG WAI PLANNED RESIDENTIAL BLOCKS
- PATH-2016 GRID
- PLANNED NGAU TAM MEI PUBLIC TRUNK SEWER (YUEN LONG AND KAM TIN SEWERAGE AND SEWAGE DISPOSAL STAGE 2)
- REPRESENTATIVE AIR SENSITIVE RECEIVER (EXISTING)
- REPRESENTATIVE AIR SENSITIVE RECEIVER (PLANNED)
- CONSTRUCTION PHASE AIR QUALITY MONITORING STATION

Rev	Date	Drawn	Description	Ch'k'd	App'd
P4	AUG 17	MING	GENERAL REVISION	HC	EC
P3	APR 17	MING	GENERAL REVISION	HC	EC
P2	JAN 17	MING	GENERAL REVISION	HC	JFP
P1	SEP 16	MING	FIRST ISSUE	NN	JFP

MOTT MACDONALD
20/F AIA Kowloon Tower
Landmark East
100 How Ming Street
Kwun Tong, Kowloon
Hong Kong
T +852 2828 5757
F +852 2827 1823
W mottmac.com

Client

PROFIT POINT ENTERPRISES LTD.

Project

PROPOSED INTERIM SEWAGE TREATMENT PLANT AND EFFLUENT REUSE FACILITY AT WO SHANG WAI, YUEN LONG

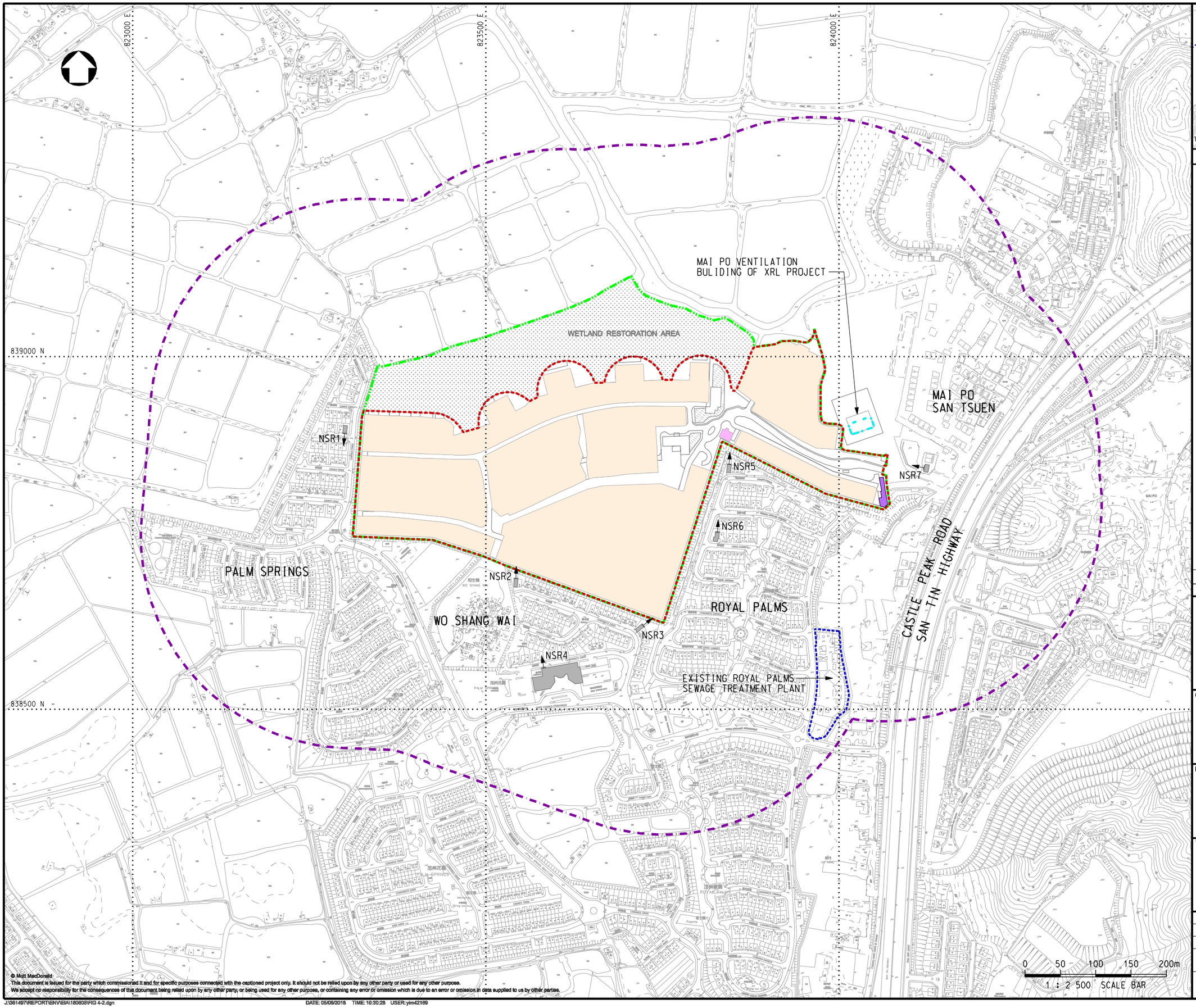
Title

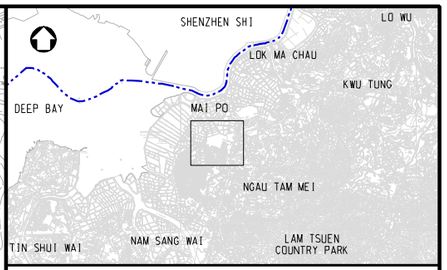
LOCATION OF REPRESENTATIVE AIR SENSITIVE RECEIVERS AND AIR QUALITY MONITORING STATIONS

Designed	NN		Eng check	JC	
Drawn	MING		Coordination	JC	
Dwg check	NN		Approved	EC	
Scale at A1	1:3000	Status	PRE	Rev	P4

Drawing Number

FIGURE 3.1





KEY PLAN (1:100000)

LEGEND

- 300m ASSESSMENT AREA
- PROJECT BOUNDARY (COVERING THE ASSOCIATED WORKS)
- COMPREHENSIVE DEVELOPMENT AT WO SHANG WAI (EP-311/2008/D)
- PROPOSED SEWAGE TREATMENT PLANT (ABOVE-GROUND STRUCTURE)
- WO SHANG WAI PLANNED RESIDENTIAL BLOCKS
- E & M BUILDING
- REPRESENTATIVE NOISE SENSITIVE RECEIVERS
- FACADE FACING

Rev	Date	Drawn	Description	Ch'k'd	App'd
P1	JUN 18	MING	FIRST ISSUE	HL	EC

MOTT MACDONALD
20/F AIA Kowloon Tower
Landmark East
100 How Ming Street
Kwun Tong, Kowloon
Hong Kong
T +852 2828 5757
F +852 2827 1823
W mottmac.com

Client

PROFIT POINT ENTERPRISES LTD.

Project

PROPOSED INTERIM SEWAGE TREATMENT PLANT AND EFFLUENT REUSE FACILITY AT WO SHANG WAI, YUEN LONG

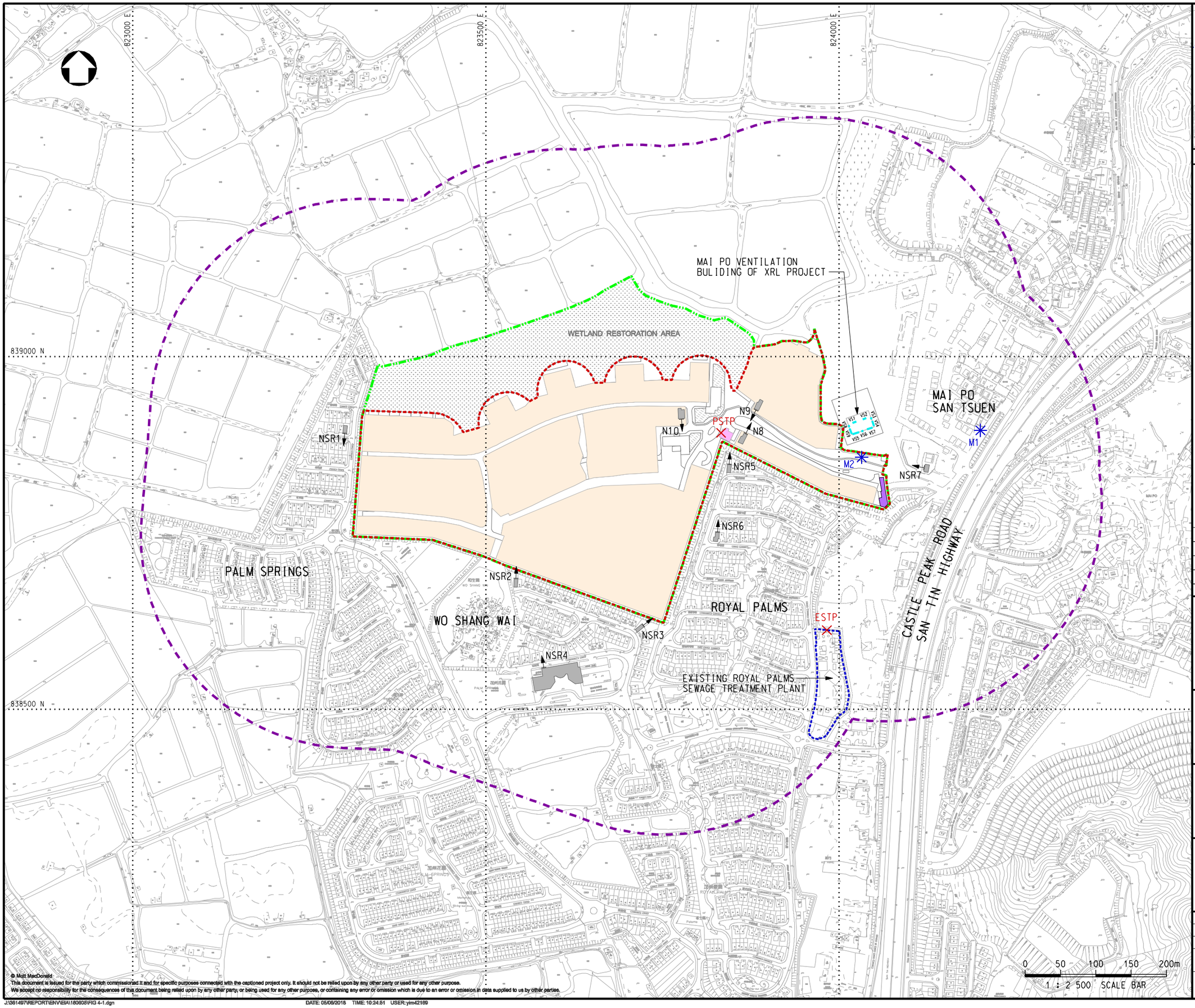
Title

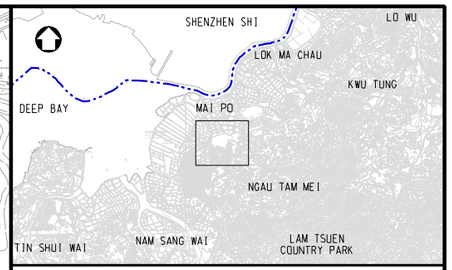
LOCATION OF REPRESENTATIVE NOISE SENSITIVE RECEIVERS (CONSTRUCTION PHASE)

Designed	HL		Eng check	JC	
Drawn	MING		Coordination	JC	
Dwg check	HL		Approved	EC	
Scale at A1	1:2500	Status	PRE	Rev	P1

Drawing Number

FIGURE 4.1





KEY PLAN (1:100000)

LEGEND

- 300m ASSESSMENT AREA
- PROJECT BOUNDARY (COVERING THE ASSOCIATED WORKS)
- COMPREHENSIVE DEVELOPMENT AT WO SHANG WAI (EP-311/2008/D)
- PROPOSED SEWAGE TREATMENT PLANT (ABOVE-GROUND STRUCTURE)
- WO SHANG WAI PLANNED RESIDENTIAL BLOCKS
- E & M BUILDING
- REPRESENTATIVE NOISE SENSITIVE RECEIVERS
- FACADE FACING
- EMISSION SOURCE
- PREVAILING BACKGROUND NOISE MEASUREMENT LOCATIONS

Rev	Date	Drawn	Description	Ch'k'd	App'd
P4	JUN 18	MING	GENERAL REVISION	HL	EC
P3	APR 17	MING	GENERAL REVISION	SC	EC
P2	JAN 17	MING	GENERAL REVISION	SC	JFP
P1	SEP 16	MING	FIRST ISSUE	SC	JFP

MOTT MACDONALD
20/F AIA Kowloon Tower
Landmark East
100 How Ming Street
Kwun Tong, Kowloon
Hong Kong
T +852 2828 5757
F +852 2827 1823
W mottmac.com

Client

PROFIT POINT ENTERPRISES LTD.

Project

PROPOSED INTERIM SEWAGE TREATMENT PLANT AND EFFLUENT REUSE FACILITY AT WO SHANG WAI, YUEN LONG

Title

LOCATION OF REPRESENTATIVE NOISE SENSITIVE RECEIVERS (OPERATION PHASE)

Designed	SC		Eng check	JC	
Drawn	MING		Coordination	JC	
Dwg check	HL		Approved	EC	
Scale at A1	1:2500	Status	PRE	Rev	P4

Drawing Number

FIGURE 4.2

NSR 1
House No. 7, Cherry Path, Palm Springs

NSR 2
House No. 1, Narcissus Path,
Palm Springs

NSR 3
House No. 61, Narcissus Path,
Palm Springs

NSR 4
St Lorraine English Kindergarten

NSR 7
House No. 202, Mai Po San Tsuen

NSR 5
House No. 1, Ventura Avenue,
Royal Palms

NSR 6
House No. 1, Mann Avenue,
Royal Palms

Notes

Key to symbols

Reference drawings

Rev	Date	Drawn	Description	Ch'k'd	App'd

MOTT MACDONALD

20/F AIA Kowloon Tower
Landmark East
100 How Ming Street
Kwun Tong, Kowloon
Hong Kong
T +852 2828 5757
F +852 2827 1823
W mottmac.com

Client

PROFIT POINT ENTERPRISES LTD.

Project

PROPOSED INTERIM SEWAGE TREATMENT PLANT AND EFFLUENT REUSE FACILITY AT WO SHANG WAI, YUEN LONG

Title

PHOTOS OF EXISTING REPRESENTATIVE NOISE SENSITIVE RECEIVERS

Designed			Eng check		
Drawn			Coordination		
Dwg check			Approved		
Scale at A1		Status		Rev	

Drawing Number

FIGURE 4.3

J:\361497\CAD_ADMIN\MMH-361497-P-A1_TLB-N.dgn DATE: 27/09/2016 TIME: 09:47:51 USER: yim42169

2.4m VISUAL BARRIERS REPLACED WITH EXISTING 1.8m CHAIN-LINK FENCEAFTER COMPLETION OF REPROFILING WORKS IN THE WETLAND RESTORATION AREA IN NOVERSBER 2010

2.4m SITE HOARDING TO BE PROVIDED AFTER THE RETURN OF TOA TO PROJECT PROPONENT

MAI PO VENTILATION BUILDING OF XRL PROJECT

10m NOISE BARRIER TO BE ERECTED BEFORE OCCUPANCY OF SENSITIVE USE IN V ZONE IN VINCINITY TO THE PROPOSED DEVELOPMENT

823500 E

824000 E

839000 N

838500 N

FISHPOND

FISHPOND

MAI PO SAN TSUEN

SAN TIN HIGHWAY

PALM SPRINGS

WO SHANG WAI VILLAGE

ROYAL PALMS

SCENIC HEIGHTS

10m

9m

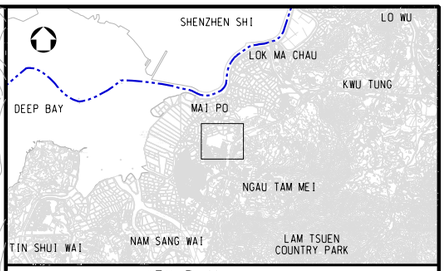
10m

9m

10m

0 50 100 150 200m

1 : 2 000 SCALE BAR



KEY PLAN (1:100000)

LEGEND

- SITE BOUNDARY
- PHASE BOUNDARY
- 3m SITE HOARDING
- EXTENT OF TEMPORARY NOISE BARRIERS FOR CONSTRUCTION PHASE
- 10m — 10m HIGH TEMPORARY NOISE BARRIERS FOR CONSTRUCTION PHASE
- AREA PERMANENTLY RESUMED FOR XRL PROJECT

REMARK:

LOCATIONS ARE INDICATIVE ONLY SUBJECT TO MINOR AMENDMENT ON-SITE

Rev	Date	Drawn	Description	Ch'k'd	App'd
P1	JUN 18	MING	FIRST ISSUE	HL	EC

MOTT MACDONALD

20/F AIA Kowloon Tower
Landmark East
100 How Ming Street
Kwun Tong, Kowloon
Hong Kong
T +852 2828 5757
F +852 2827 1823
W mottmac.com

Client

PROFIT POINT ENTERPRISES LTD.

Project

PROPOSED INTERIM SEWAGE TREATMENT PLANT AND EFFLUENT REUSE FACILITY AT WO SHANG WAI, YUEN LONG

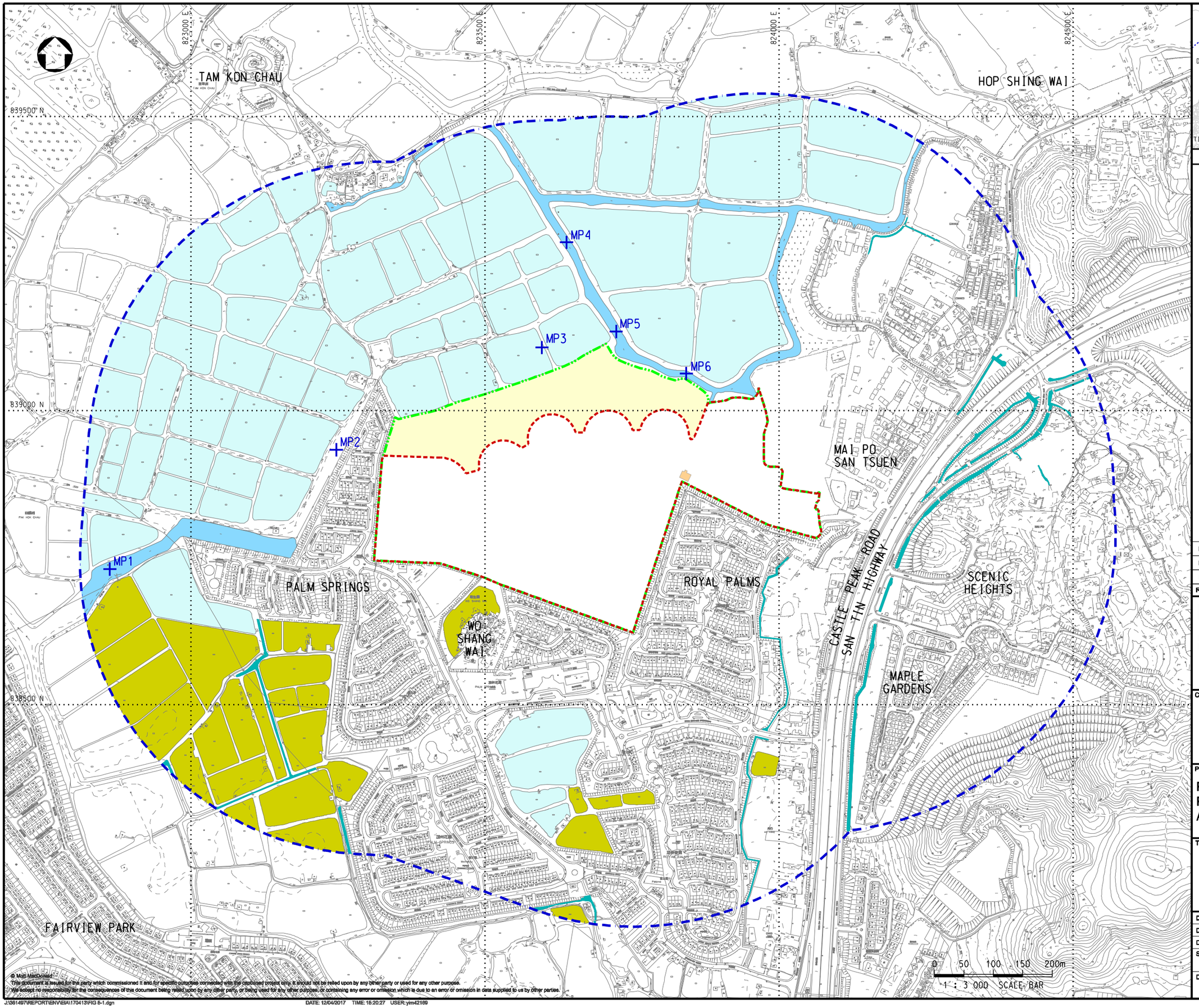
Title

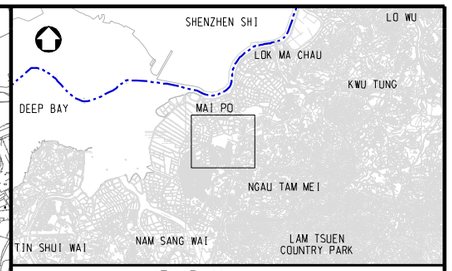
TEMPORARY NOISE BARRIER AND SITE HOARDING LOCATIONS FOR CONSTRUCTION PHASE

Designed	HL		Eng check	HL	
Drawn	MING		Coordination	JC	
Dwg check	HL		Approved	EC	
Scale at A1	1:2000	Status	PRE	Rev	P1

Drawing Number

FIGURE 4.4





KEY PLAN (1:100000)

LEGEND

- 500m STUDY AREA
- PROJECT BOUNDARY (COVERING THE ASSOCIATED WORKS)
- COMPREHENSIVE DEVELOPMENT AT WO SHANG WAI (EP-311/2008/D)
- PROPOSED SEWAGE TREATMENT PLANT (ABOVE-GROUND STRUCTURE)
- WETLAND RESTORATION AREA
- FISHPOND
- WATER DITCH
- POND
- DRAINAGE
- MONITORING LOCATION OF COMPREHENSIVE DEVELOPMENT AT WO SHANG WAI PROJECT

Rev	Date	Drawn	Description	Ch'k'd	App'd
P3	APR 17	MING	GENERAL REVISION	SS	EC
P2	JAN 17	MING	GENERAL REVISION	SS	JFP
P1	SEP 16	MING	FIRST ISSUE	SS	JFP

MOTT MACDONALD
20/F AIA Kowloon Tower
Landmark East
100 How Ming Street
Kwun Tong, Kowloon
Hong Kong
T +852 2828 5757
F +852 2827 1823
W mottmac.com

Client

PROFIT POINT ENTERPRISES LTD.

Project

PROPOSED INTERIM SEWAGE TREATMENT PLANT AND EFFLUENT REUSE FACILITY AT WO SHANG WAI, YUEN LONG

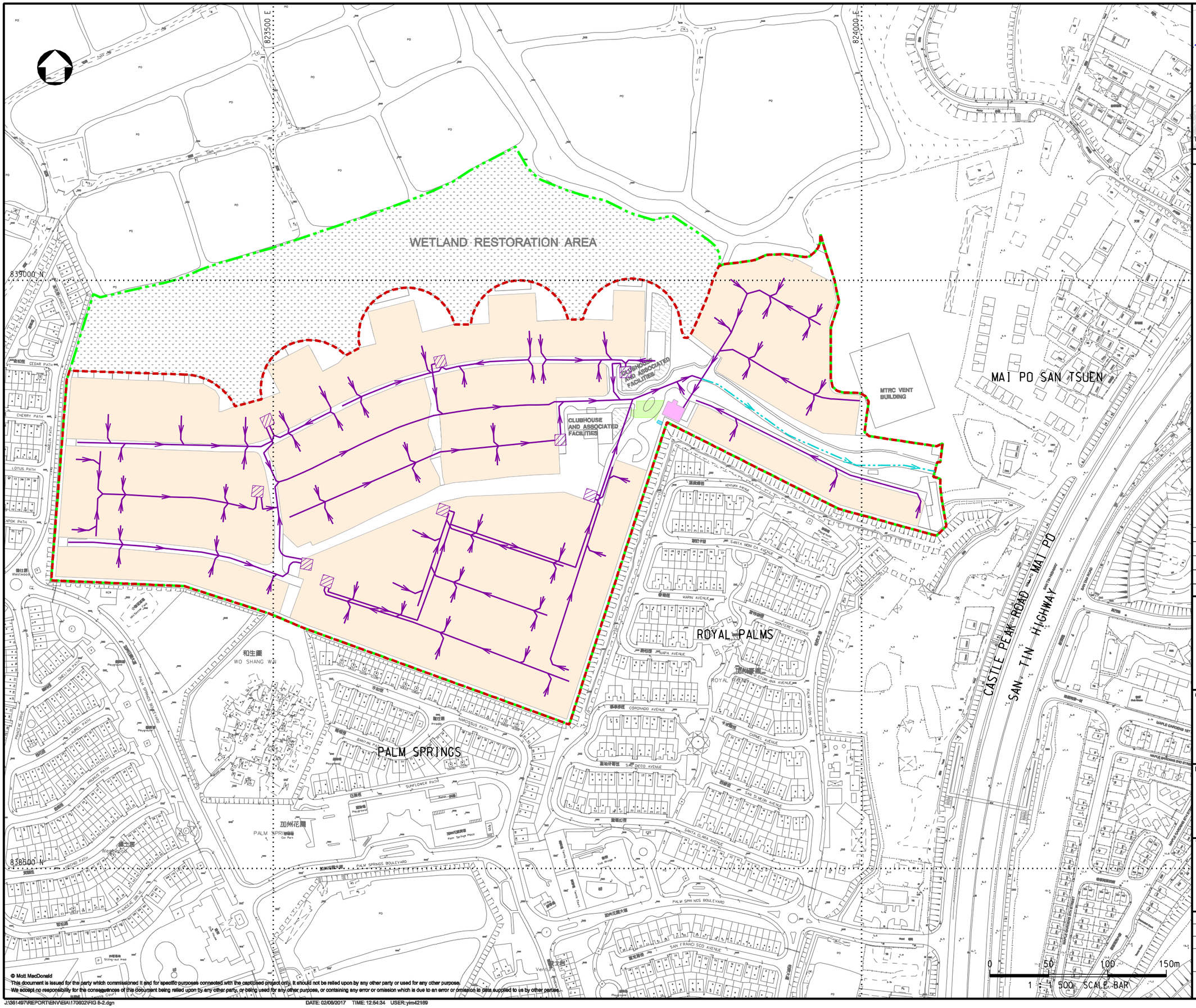
Title

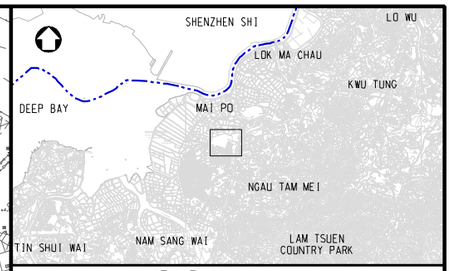
LOCATION OF REPRESENTATIVE WATER SENSITIVE RECEIVERS AND EXISTING MONITORING LOCATIONS

Designed	SS		Eng check	JC	
Drawn	MING		Coordination	JC	
Dwg check	SS		Approved	EC	
Scale at A1 1:3000		Status PRE		Rev P2	

Drawing Number

FIGURE 5.1





KEY PLAN (1:100000)

LEGEND

- PROJECT BOUNDARY (COVERING THE ASSOCIATED WORKS)
- COMPREHENSIVE DEVELOPMENT AT WO SHANG WAI (EP-311/2008/D)
- PROPOSED SEWAGE TREATMENT PLANT (ABOVE-GROUND STRUCTURE)
- WO SHANG WAI PLANNED RESIDENTIAL BLOCKS
- STORAGE WATER TANK FOR SEWAGE TREATMENT PLANT (UNDER-GROUND STRUCTURE)
- RECLAIMED WATER STORAGE TANK (UNDER-GROUND STORAGE STRUCTURE)
- PROPOSED FOUL SEWERAGE (UNDER-GROUND STRUCTURE)
- PROPOSED FOUL SEWERAGE (FOR PUBLIC FOUL SEWERAGE CONNECTION) (UNDER-GROUND STRUCTURE)
- PROPOSED SEWAGE PUMP ROOM (UNDER-GROUND STRUCTURE)

Rev	Date	Drawn	Description	Ch'k'd	App'd
P4	JUN 17	MING	GENERAL REVISION	EY	EC
P3	APR 17	MING	GENERAL REVISION	DC	EC
P2	JAN 17	MING	GENERAL REVISION	DC	JFP
P1	SEP 16	MING	FIRST ISSUE	DC	JFP

MOTT MACDONALD
20/F AIA Kowloon Tower
Landmark East
100 How Ming Street
Kwun Tong, Kowloon
Hong Kong
T +852 2828 5757
F +852 2827 1823
W mottmac.com

Client

PROFIT POINT ENTERPRISES LTD.

Project

PROPOSED INTERIM SEWAGE TREATMENT PLANT AND EFFLUENT REUSE FACILITY AT WO SHANG WAI, YUEN LONG

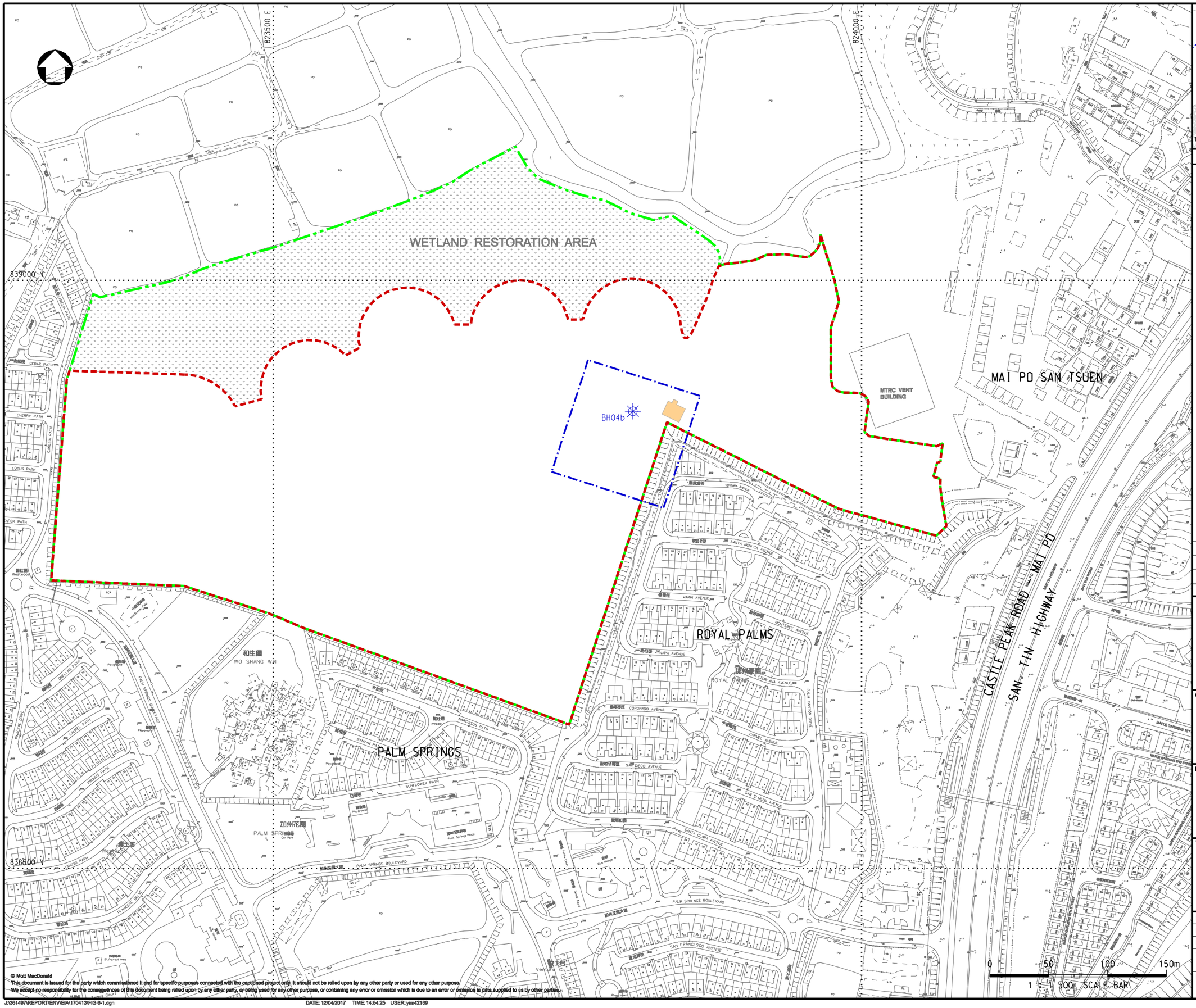
Title

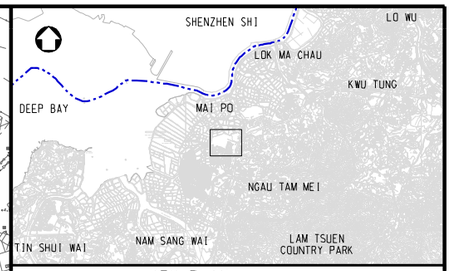
PROPOSED ONSITE SEWERAGE NETWORK

Designed	DC		Eng check	JC	
Drawn	MING		Coordination	JC	
Dwg check	DC		Approved	EC	
Scale at A1 1:1500		Status PRE		Rev P4	

Drawing Number

FIGURE 5.2





KEY PLAN (1:100000)

LEGEND

- PROJECT BOUNDARY (COVERING THE ASSOCIATED WORKS)
- COMPREHENSIVE DEVELOPMENT AT WO SHANG WAI (EP-311/2008/D)
- PROPOSED SEWAGE TREATMENT PLANT (ABOVE-GROUND STRUCTURE)
- 100m x 100m GRID
- BH04b BOREHOLE LOCATION

Rev	Date	Drawn	Description	Ch'k'd	App'd
P3	APR 17	MING	GENERAL REVISION	PL	EC
P2	JAN 17	MING	GENERAL REVISION	PL	JFP
P1	SEP 16	MING	FIRST ISSUE	PL	JFP

MOTT MACDONALD
20/F AIA Kowloon Tower
Landmark East
100 How Ming Street
Kwun Tong, Kowloon
Hong Kong
T +852 2828 5757
F +852 2827 1823
W mottmac.com

Client

PROFIT POINT ENTERPRISES LTD.

Project

PROPOSED INTERIM SEWAGE TREATMENT PLANT AND EFFLUENT REUSE FACILITY AT WO SHANG WAI, YUEN LONG

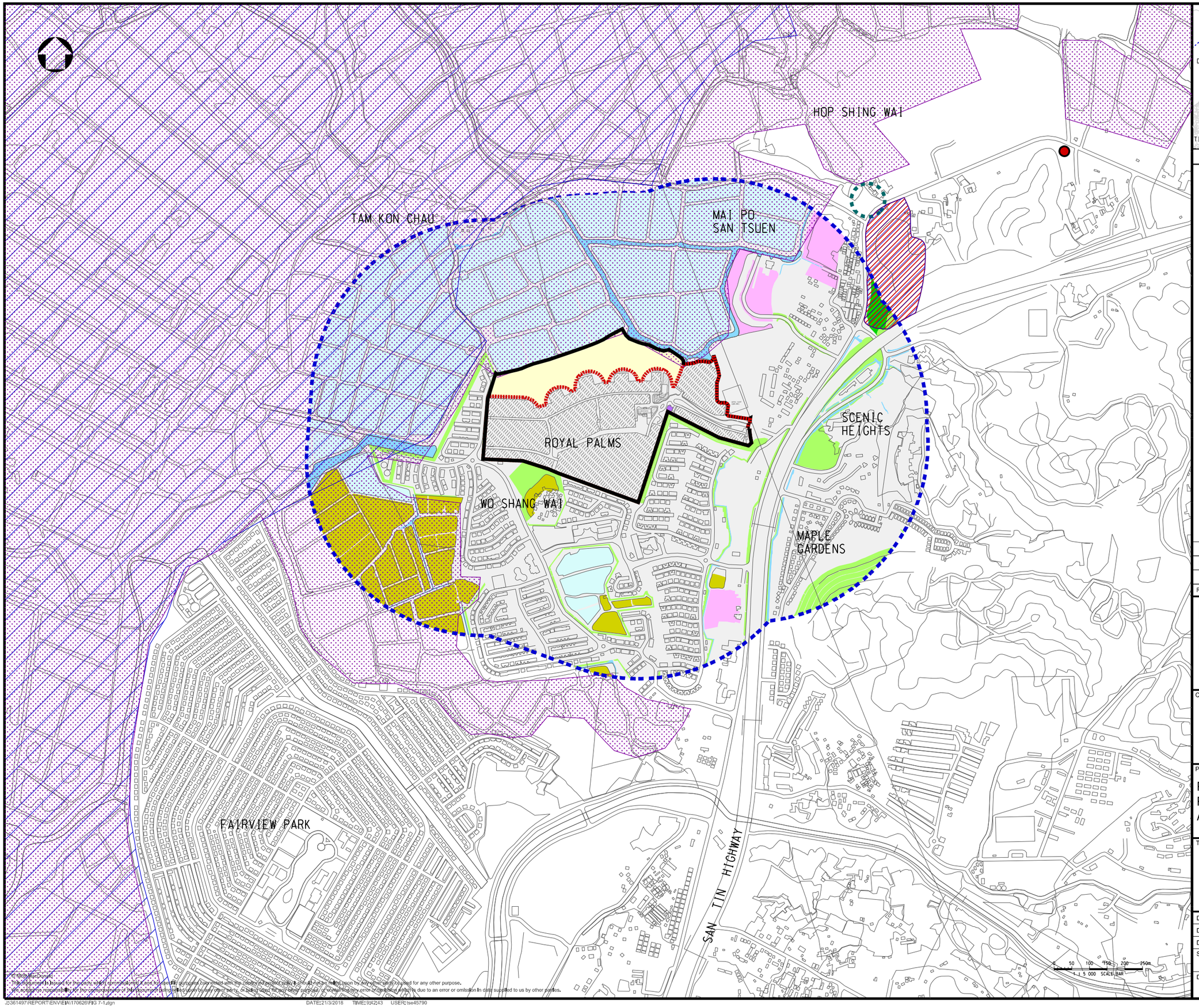
Title

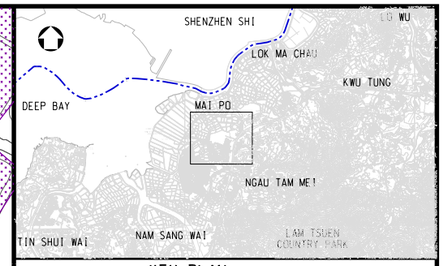
BOREHOLE LOCATIONS

Designed	PL		Eng check	JC	
Drawn	MING		Coordination	JC	
Dwg check	PL		Approved	EC	
Scale at A1	1:1500	Status	PRE	Rev	P3

Drawing Number

FIGURE 6.1





KEY PLAN (1:100000)

LEGEND

- 500m STUDY AREA
- PROJECT BOUNDARY (COVERING THE ASSOCIATED WORKS)
- COMPREHENSIVE DEVELOPMENT AT WO SHANG WAI (EP-311/2008/D)
- WETLAND CONSERVATION AREA
- MAI PO INNER DEEP BAY RAMSAR SITE
- WO SHANG WAI PLANNED RESIDENTIAL BLOCKS
- PROPOSED SEWAGE TREATMENT PLANT (ABOVE-GROUND STRUCTURE)
- WETLAND RESTORATION AREA
- SECONDARY WOODLAND
- PLANTATION
- MARSH / REEDBED
- FISHPOND
- WATER CHANNEL / DITCH
- ABANDONED FISHPOND
- DEVELOPED AREA
- SITE OF SPECIAL SCIENTIFIC INTEREST - MAI PO VILLAGE
- MAI PO VILLAGE EGRETRY (APPROXIMATE EXTENT)
- MAI PO LUNG EGRETRY

Rev	Date	Drawn	Description	Ch'k'd	App'd
P3	JUN 17	KT	GENERAL REVISION	KI	EC
P2	APR 17	MING	GENERAL REVISION	KI	EC
P1	SEP 16	MING	FIRST ISSUE	GC	JFP

MOTT MACDONALD
20/F AIA Kowloon Tower
Landmark East
100 How Ming Street
Kwun Tong, Kowloon
Hong Kong
T +852 2828 5757
F +852 2827 1823
W mottmac.com

Client

PROFIT POINT ENTERPRISES LTD.

Project

PROPOSED INTERIM SEWAGE TREATMENT PLANT AND EFFLUENT REUSE FACILITY AT WO SHANG WAI, YUEN LONG

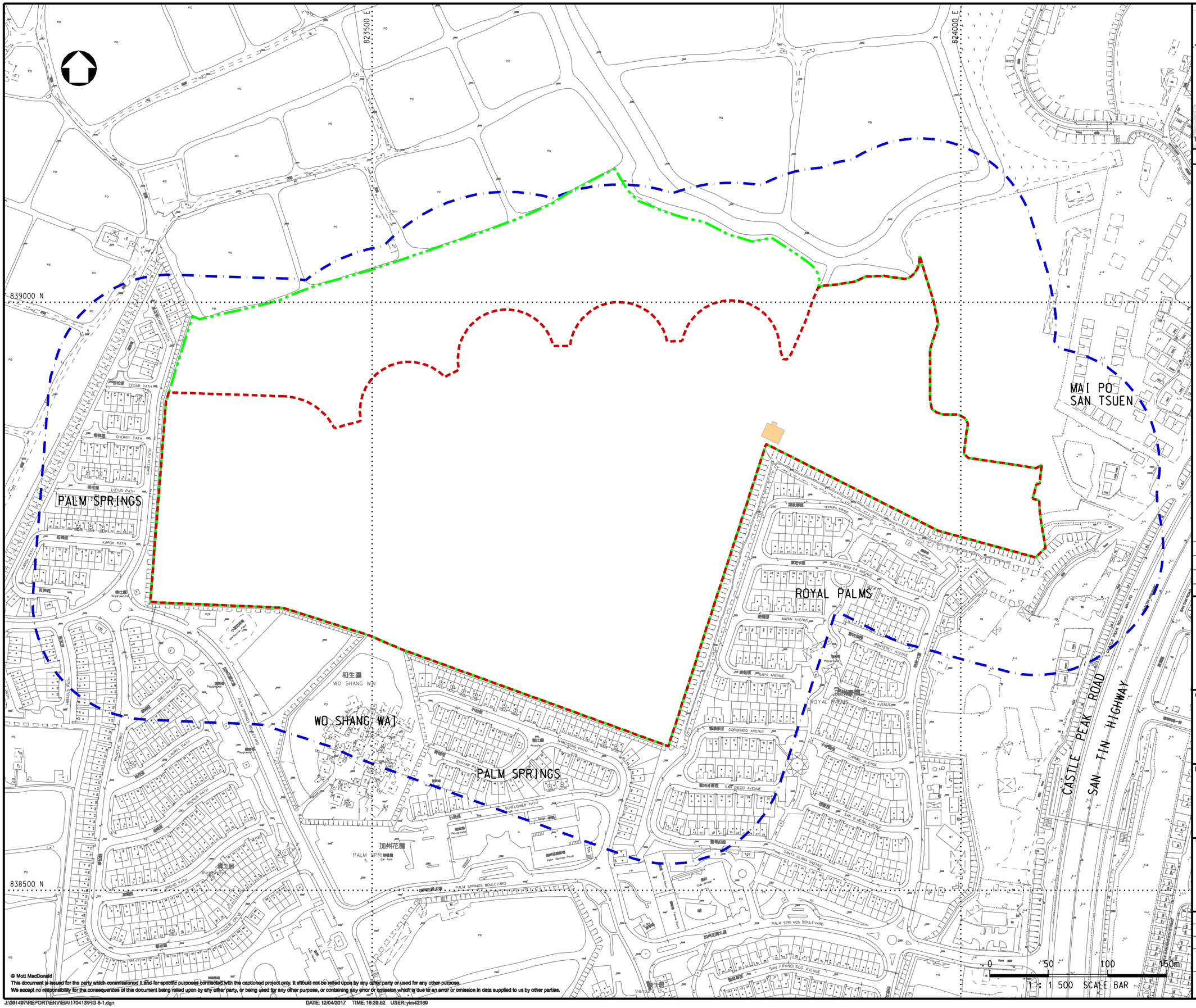
Title

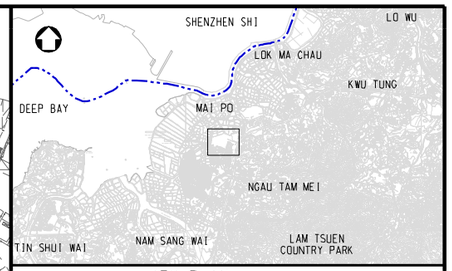
HABITAT MAP

Designed	Gav		Eng check	JC	
Drawn	MING		Coordination	JC	
Dwg check	GC		Approved	EC	
Scale at A1	1:5000	Status	PRE	Rev	P3

Drawing Number

FIGURE 7.1





KEY PLAN (1:100000)

LEGEND

- 100m LANDSCAPE STUDY AREA
- PROJECT BOUNDARY (COVERING THE ASSOCIATED WORKS)
- COMPREHENSIVE DEVELOPMENT AT WO SHANG WAI (EP-311/2008/D)
- PROPOSED SEWAGE TREATMENT PLANT (ABOVE-GROUND STRUCTURE)

Rev	Date	Drawn	Description	Ch'k'd	App'd
P3	APR 17	MING	GENERAL REVISION	PK	EC
P2	JAN 17	MING	GENERAL REVISION	PK	JFP
P1	SEP 16	MING	FIRST ISSUE	PK	JFP

MOTT MACDONALD
20/F AIA Kowloon Tower
Landmark East
100 How Ming Street
Kwun Tong, Kowloon
Hong Kong
T +852 2828 5757
F +852 2827 1823
W mottmac.com

Client

PROFIT POINT ENTERPRISES LTD.

Project

PROPOSED INTERIM SEWAGE TREATMENT PLANT AND EFFLUENT REUSE FACILITY AT WO SHANG WAI, YUEN LONG

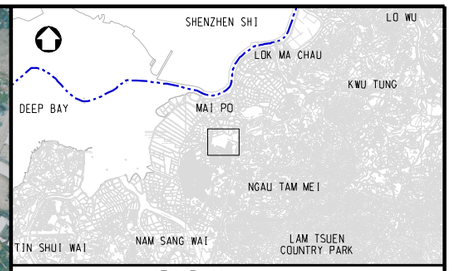
Title

LANDSCAPE STUDY AREA

Designed	PK		Eng check	JC	
Drawn	MING		Coordination	JC	
Dwg check	PK		Approved	EC	
Scale at A1 1:1500		Status PRE		Rev P3	

Drawing Number

FIGURE 8.1



KEY PLAN (1:100000)

LEGEND

- 100m LANDSCAPE STUDY AREA
- PROJECT BOUNDARY (COVERING THE ASSOCIATED WORKS)
- PROPOSED SEWAGE TREATMENT PLANT (ABOVE-GROUND STRUCTURE)

Rev	Date	Drawn	Description	Ch'k'd	App'd
P3	APR 17	MING	GENERAL REVISION	PK	EC
P2	JAN 17	MING	GENERAL REVISION	PK	EC
P1	SEP 16	MING	FIRST ISSUE	PK	JFP

MOTT MACDONALD
20/F AIA Kowloon Tower
Landmark East
100 How Ming Street
Kwun Tong, Kowloon
Hong Kong
T +852 2828 5757
F +852 2827 1823
W mottmac.com

Client

PROFIT POINT ENTERPRISES LTD.

Project

PROPOSED INTERIM SEWAGE TREATMENT PLANT AND EFFLUENT REUSE FACILITY AT WO SHANG WAI, YUEN LONG

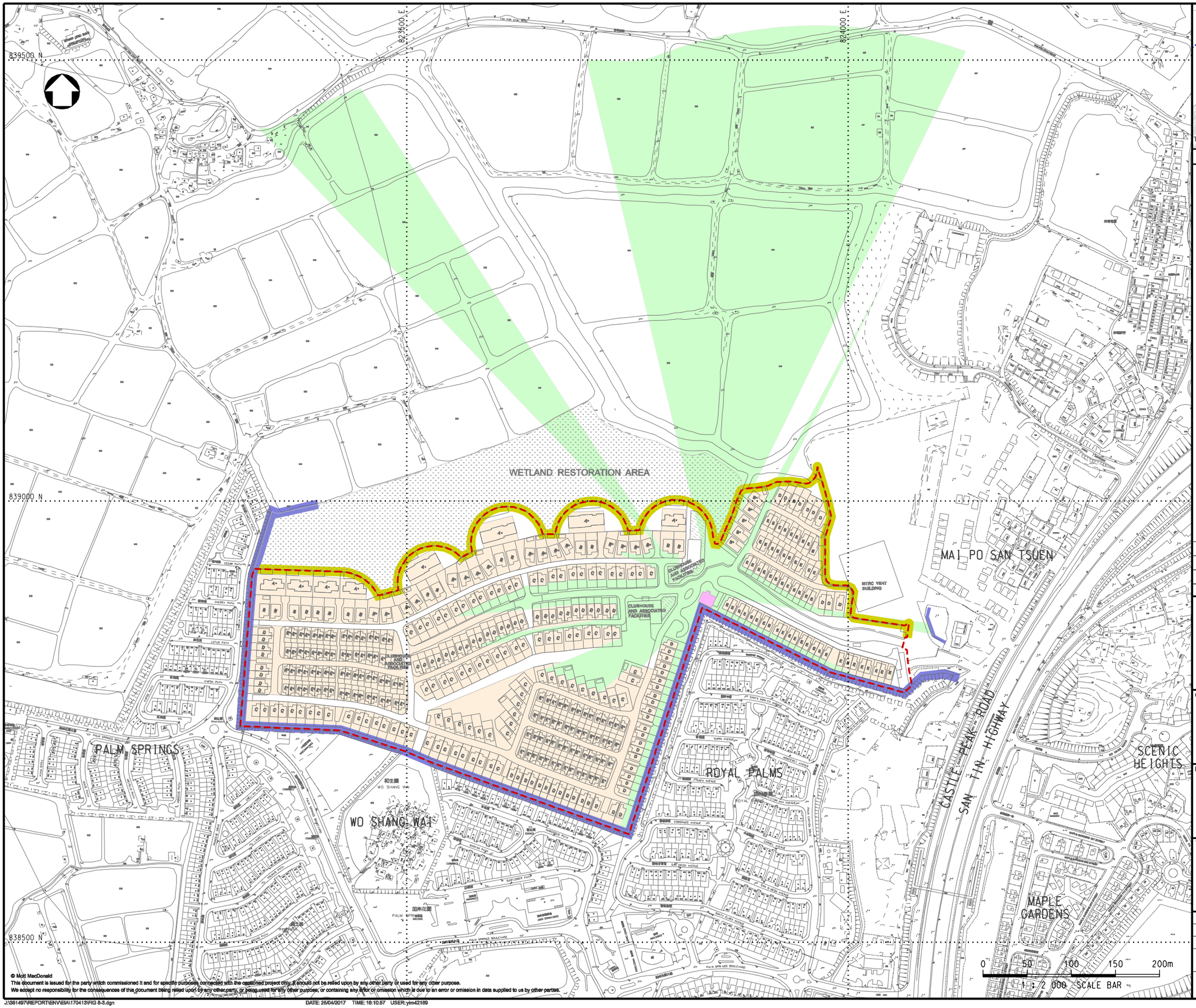
Title

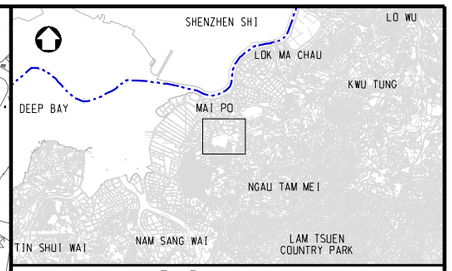
AERIAL VIEW OF LANDSCAPE STUDY AREA

Designed	PK		Eng check	JC	
Drawn	MING		Coordination	JC	
Dwg check	PK		Approved	EC	
Scale at A1	1:1500	Status	PRE	Rev	P3

Drawing Number

FIGURE 8.2





KEY PLAN (1:100000)

NOTE:

THE PRELIMINARY LAYOUT IS TENTATIVE AND IS USED FOR ASSESSMENT OF THE COVERAGE OF THE ZONE OF VISUAL INFLUENCE ONLY.

LEGEND:

- PROJECT BOUNDARY (COVERING THE ASSOCIATED WORKS)
- PROPOSED SEWAGE TREATMENT PLANT (ABOVE-GROUND STRUCTURE)
- ZONE OF VISUAL INFLUENCE DURING OPERATION PHASE
- WO SHANG WAI PLANNED RESIDENTIAL BLOCKS
- SITE HOARDING
- NOISE BARRIER

Rev	Date	Drawn	Description	Ch'k'd	App'd
P3	APR 17	MING	GENERAL REVISION	PK	EC
P2	JAN 17	MING	GENERAL REVISION	PK	JFP
P1	SEP 16	MING	FIRST ISSUE	PK	JFP

MOTT MACDONALD
20/F AIA Kowloon Tower
Landmark East
100 How Ming Street
Kwun Tong, Kowloon
Hong Kong
T +852 2828 5757
F +852 2827 1823
W mottmac.com

Client

PROFIT POINT ENTERPRISES LTD.

Project

PROPOSED INTERIM SEWAGE TREATMENT PLANT AND EFFLUENT REUSE FACILITY AT WO SHANG WAI, YUEN LONG

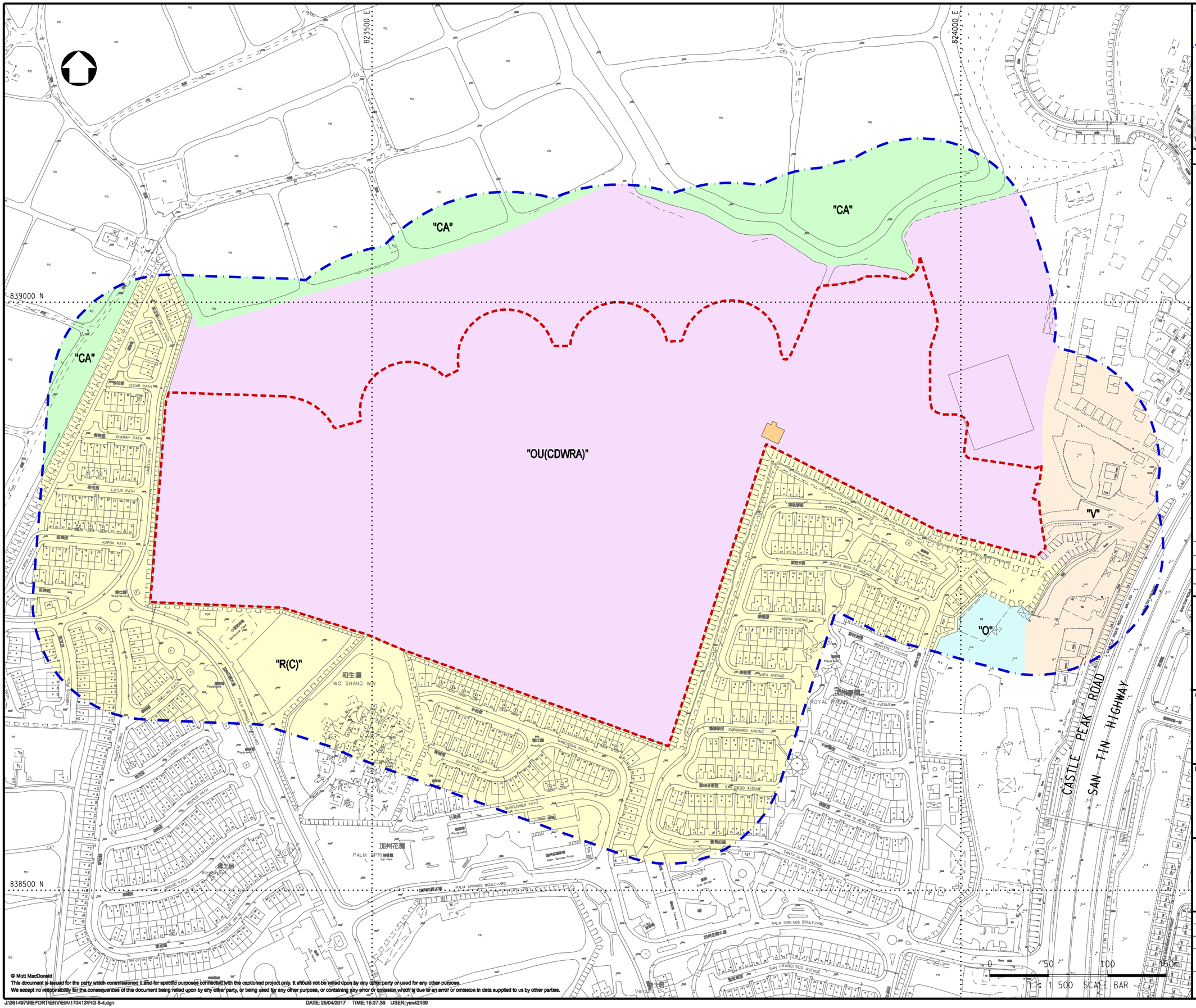
Title

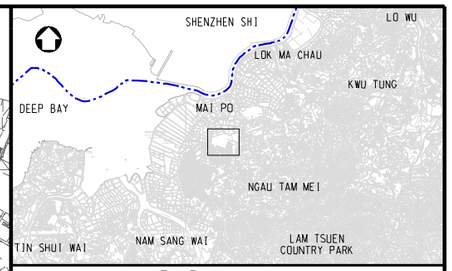
ZONE OF VISUAL INFLUENCE AND VISUALLY SENSITIVE RECEIVERS

Designed	PK		Eng check	JC	
Drawn	MING		Coordination	JC	
Dwg check	PK		Approved	JFP	
Scale at A1 1:2000		Status PRE		Rev P3	

Drawing Number

FIGURE 8.3





KEY PLAN (1:100000)

LEGEND

- 100m LANDSCAPE STUDY AREA
- PROJECT BOUNDARY (COVERING THE ASSOCIATED WORKS)
- PROPOSED SEWAGE TREATMENT PLANT (ABOVE-GROUND STRUCTURE)
- RESIDENTIAL (GROUP C) "R(C)"
- VILLAGE TYPE DEVELOPMENT "V"
- OPEN SPACE "O"
- OTHER SPECIFIED USES (COMPREHENSIVE DEVELOPMENT TO INCLUDE WETLAND RESTORATION AREA) "OU(CDWRA)"
- CONSERVATION AREA "CA"

Rev	Date	Drawn	Description	Ch'k'd	App'd
P3	APR 17	MING	GENERAL REVISION	PK	EC
P2	JAN 17	MING	GENERAL REVISION	PK	JFP
P1	SEP 16	MING	FIRST ISSUE	PK	JFP

MOTT MACDONALD
20/F AIA Kowloon Tower
Landmark East
100 How Ming Street
Kwun Tong, Kowloon
Hong Kong
T +852 2828 5757
F +852 2827 1823
W mottmac.com

Client

PROFIT POINT ENTERPRISES LTD.

Project

PROPOSED INTERIM SEWAGE TREATMENT PLANT AND EFFLUENT REUSE FACILITY AT WO SHANG WAI, YUEN LONG

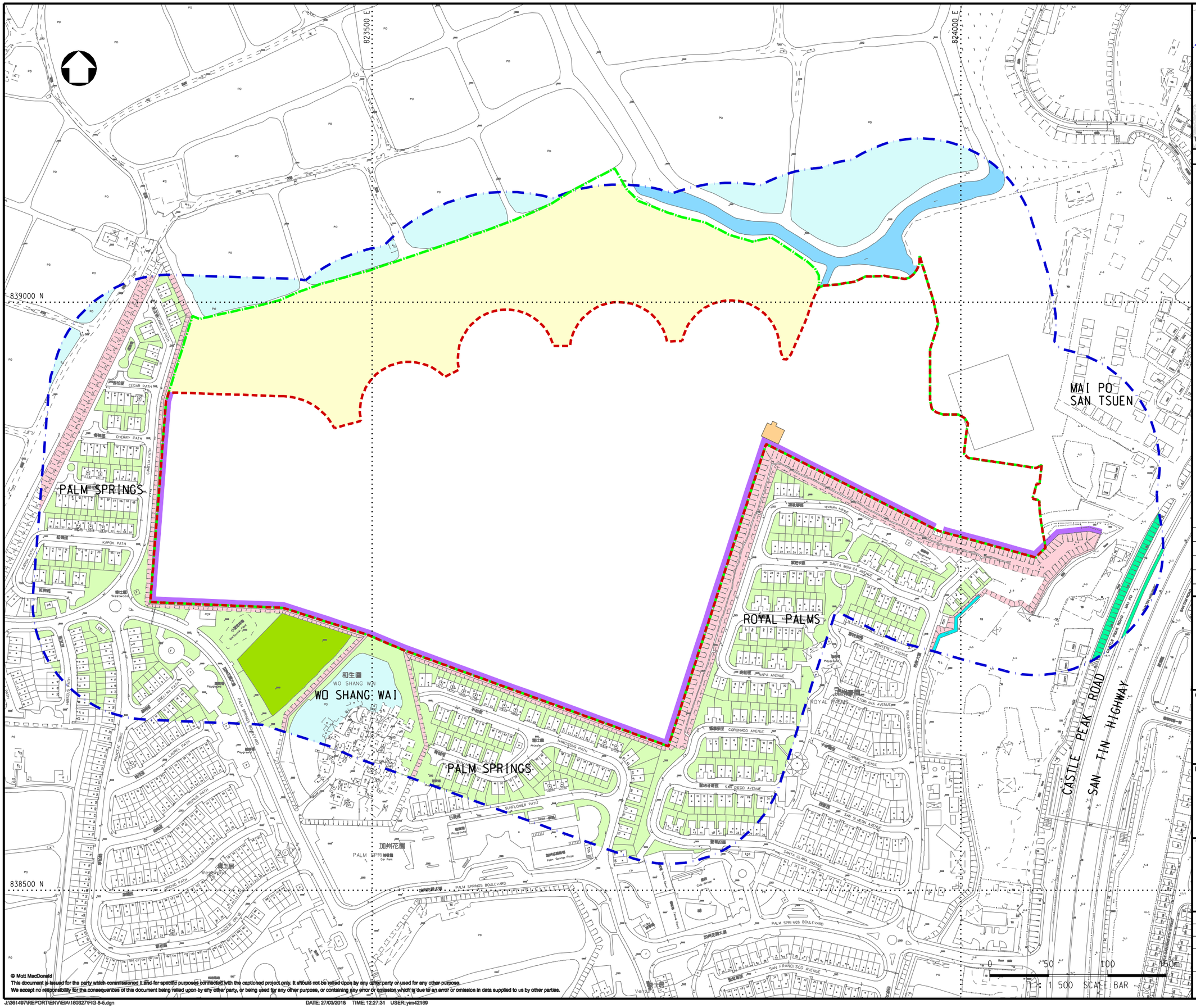
Title

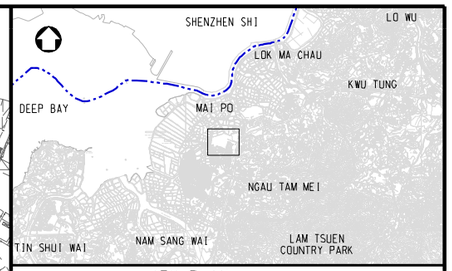
ZONING IN OUTLINE ZONING PLAN WITHIN THE LANDSCAPE STUDY AREA

Designed	PK		Eng check	JC	
Drawn	MING		Coordination	JC	
Dwg check	PK		Approved	JFP	
Scale at A1 1:1500		Status PRE		Rev P3	

Drawing Number

FIGURE 8.4





KEY PLAN (1:100000)

LEGEND

- 100m LANDSCAPE STUDY AREA
- PROJECT BOUNDARY (COVERING THE ASSOCIATED WORKS)
- COMPREHENSIVE DEVELOPMENT AT WO SHANG WAI (EP-311/2008/D)
- PROPOSED SEWAGE TREATMENT PLANT (ABOVE-GROUND STRUCTURE)
- LR1 - SCREEN PLANTING
- LR2 - PERIPHERY PLANTING
- LR3 - ROADSIDE PLANTING
- LR4 - AMENITY PLANTING
- LR5 - TREE PLANTING
- LR6 - RESTORED WETLAND
- LR7 - POND
- LR8.1 - WATERCOURSE (DRAINAGE CHANNELS AT THE EAST OF PALM SPRINGS)
- LR8.2 - WATERCOURSE (DRAINAGE CHANNELS AT THE NORTH OF THE PROJECT SITE)

Rev	Date	Drawn	Description	Ch'k'd	App'd
P4	MAR 18	MING	GENERAL REVISION	HL	EC
P3	APR 17	MING	GENERAL REVISION	PK	EC
P2	JAN 17	MING	GENERAL REVISION	PK	JFP
P1	SEP 16	MING	FIRST ISSUE	PK	JFP

MOTT MACDONALD
20/F AIA Kowloon Tower
Landmark East
100 How Ming Street
Kwun Tong, Kowloon
Hong Kong
T +852 2828 5757
F +852 2827 1823
W mottmac.com

Client

PROFIT POINT ENTERPRISES LTD.

Project

PROPOSED INTERIM SEWAGE TREATMENT PLANT AND EFFLUENT REUSE FACILITY AT WO SHANG WAI, YUEN LONG

Title

LOCATION PLAN OF LANDSCAPE RESOURCES

Designed	PK		Eng check	JC	
Drawn	MING		Coordination	JC	
Dwg check	HL		Approved	EC	
Scale at A1	1:1500	Status	PRE	Rev	P4

Drawing Number

FIGURE 8.5

LR1 – Screen Planting

LR3 – Roadside Planting

LR2 – Periphery Planting

J:\361497\CAD_ADMIN\MMH-361497-P-A1_TLB-N.dgn DATE: 27/09/2016 TIME: 09:47:51 USER: yim42169

Notes

Key to symbols

Reference drawings

Rev	Date	Drawn	Description	Ch'k'd	App'd
P3	MAR 18	HL	THIRD ISSUE	JC	JFP
P2	MAR 17	PC	SECOND ISSUE	JC	JFP
P1	SEP 16	PC	FIRST ISSUE	JC	JFP

MOTT MACDONALD
20/F AIA Kowloon Tower
Landmark East
100 How Ming Street
Kwun Tong, Kowloon
Hong Kong
T +852 2828 5757
F +852 2827 1823
W mottmac.com

Client

PROFIT POINT ENTERPRISES LTD.

Project

PROPOSED INTERIM SEWAGE TREATMENT PLANT AND EFFLUENT REUSE FACILITY AT WO SHANG WAI, YUEN LONG

Title

REPRESENTATIVE PHOTOGRAPHS OF LANDSCAPE RESOURCES (SHEET 1 OF 4)

Designed	PC		Eng check	JC	
Drawn	PC		Coordination	JC	
Dwg check	JC		Approved	JFP	
Scale at A1	N.A.	Status	PRE	Rev	P3

Drawing Number

FIGURE 8.6a

LR4 – Amenity Planting

LR5 – Tree Plantation

Notes

Key to symbols

Reference drawings

Rev	Date	Drawn	Description	Ch'k'd	App'd
P3	MAR 18	HL	THIRD ISSUE	JC	JFP
P2	MAR 17	PC	SECOND ISSUE	JC	JFP
P1	SEP 16	PC	FIRST ISSUE	JC	JFP

MOTT MACDONALD
20/F AIA Kowloon Tower
Landmark East
100 How Ming Street
Kwun Tong, Kowloon
Hong Kong
T +852 2828 5757
F +852 2827 1823
W mottmac.com

Client

PROFIT POINT ENTERPRISES LTD.

Project

PROPOSED INTERIM SEWAGE TREATMENT PLANT AND EFFLUENT REUSE FACILITY AT WO SHANG WAI, YUEN LONG

Title

REPRESENTATIVE PHOTOGRAPHS OF LANDSCAPE RESOURCES (SHEET 2 OF 4)

Designed	PC		Eng check	JC	
Drawn	PC		Coordination	JC	
Dwg check	JC		Approved	JFP	
Scale at A1	**N.A.**	Status	**PRE**	Rev	**P3**

Drawing Number

FIGURE 8.6b

LR6 – Restored Wetland

LR7 – Pond (North of Project Site)

Notes

Key to symbols

Reference drawings

Rev	Date	Drawn	Description	Ch'k'd	App'd
P3	MAR 18	HL	THIRD ISSUE	JC	JFP
P2	MAR 17	PC	SECOND ISSUE	JC	JFP
P1	SEP 16	PC	FIRST ISSUE	JC	JFP

MOTT MACDONALD
20/F AIA Kowloon Tower
Landmark East
100 How Ming Street
Kwun Tong, Kowloon
Hong Kong
T +852 2828 5757
F +852 2827 1823
W mottmac.com

Client

PROFIT POINT ENTERPRISES LTD.

Project

PROPOSED INTERIM SEWAGE TREATMENT PLANT AND EFFLUENT REUSE FACILITY AT WO SHANG WAI, YUEN LONG

Title

REPRESENTATIVE PHOTOGRAPHS OF LANDSCAPE RESOURCES (SHEET 3 OF 4)

Designed	PC		Eng check	JC	
Drawn	PC		Coordination	JC	
Dwg check	JC		Approved	JFP	
Scale at A1	N.A.	Status	PRE	Rev	P3

Drawing Number

FIGURE 8.6c

LR7 – Pond (at Wo Shang Wai)

LR8.1 – Watercourse (East of Palm Springs)

LR8.2 – Watercourse (North of Project Site)

J:\361497\CAD_ADMIN\MMH-361497-P-A1_TLB-N.dgn DATE: 27/09/2016 TIME: 09:47:51 USER: yim42169

Notes

Key to symbols

Reference drawings

Rev	Date	Drawn	Description	Ch'k'd	App'd
P2	MAR 18	HL	SECOND ISSUE	JC	JFP
P1	MAR 17	PC	FIRST ISSUE	JC	JFP

MOTT MACDONALD
20/F AIA Kowloon Tower
Landmark East
100 How Ming Street
Kwun Tong, Kowloon
Hong Kong
T +852 2828 5757
F +852 2827 1823
W mottmac.com

Client

PROFIT POINT ENTERPRISES LTD.

Project

PROPOSED INTERIM SEWAGE TREATMENT PLANT AND EFFLUENT REUSE FACILITY AT WO SHANG WAI, YUEN LONG

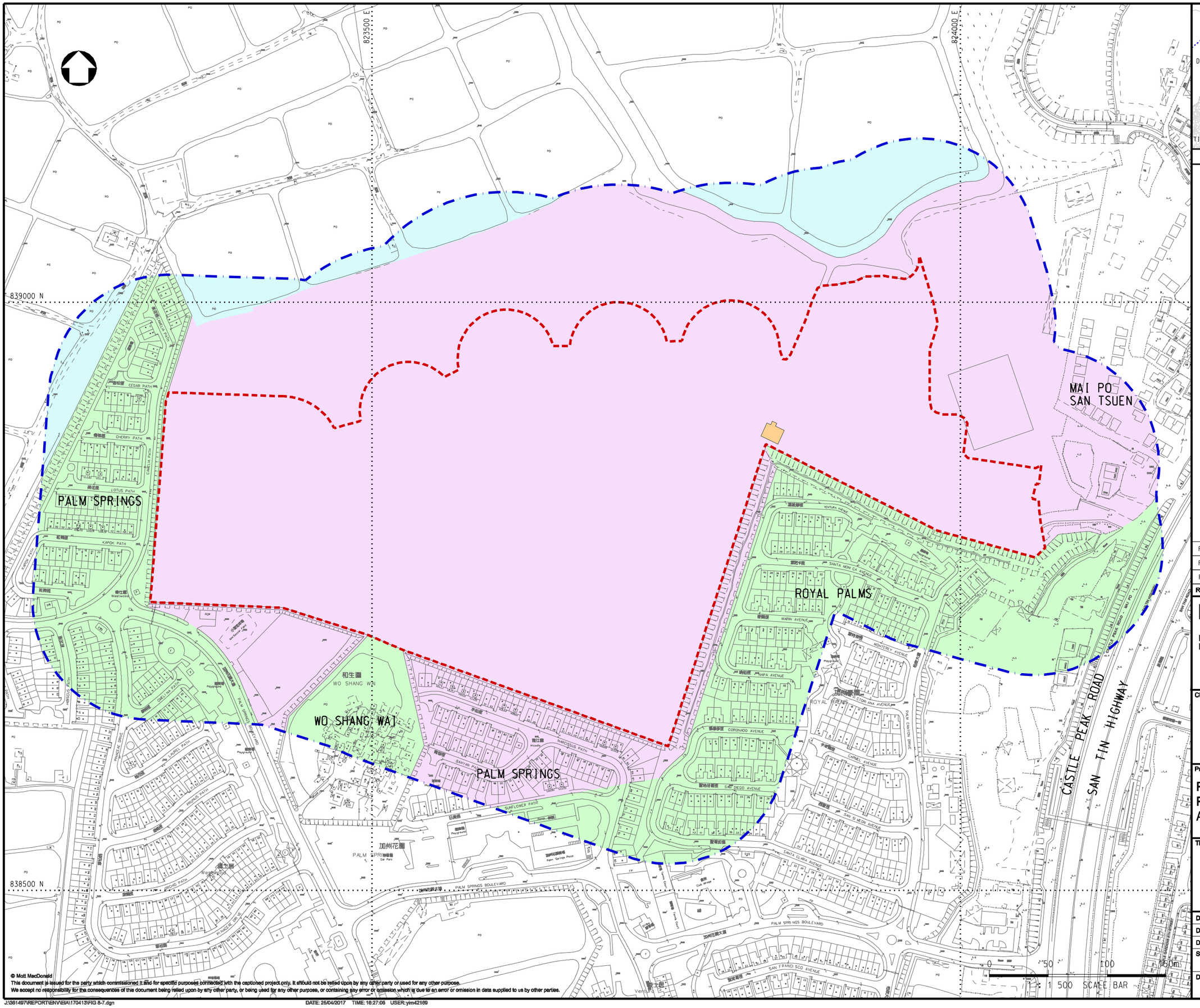
Title

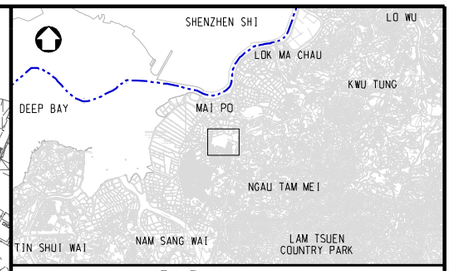
REPRESENTATIVE PHOTOGRAPHS OF LANDSCAPE RESOURCES (SHEET 4 OF 4)

Designed	PC		Eng check	JC	
Drawn	PC		Coordination	JC	
Dwg check	JC		Approved	JFP	
Scale at A1	N.A.	Status	PRE	Rev	P2

Drawing Number

FIGURE 8.6d





KEY PLAN (1:100000)

LEGEND

- 100m LANDSCAPE STUDY AREA
- PROJECT BOUNDARY (COVERING THE ASSOCIATED WORKS)
- PROPOSED SEWAGE TREATMENT PLANT (ABOVE-GROUND STRUCTURE)
- RURAL COASTAL PLAIN LANDSCAPE
- RURAL INLAND PLAIN LANDSCAPE
- COMPREHENSIVE RESIDENTIAL DEVELOPMENT LANDSCAPE

Rev	Date	Drawn	Description	Ch'k'd	App'd
P3	APR 17	MING	GENERAL REVISION	PK	EC
P2	JAN 17	MING	GENERAL REVISION	PK	JFP
P1	SEP 16	MING	FIRST ISSUE	PK	JFP

MOTT MACDONALD
20/F AIA Kowloon Tower
Landmark East
100 How Ming Street
Kwun Tong, Kowloon
Hong Kong
T +852 2828 5757
F +852 2827 1823
W mottmac.com

Client

PROFIT POINT ENTERPRISES LTD.

Project

PROPOSED INTERIM SEWAGE TREATMENT PLANT AND EFFLUENT REUSE FACILITY AT WO SHANG WAI, YUEN LONG

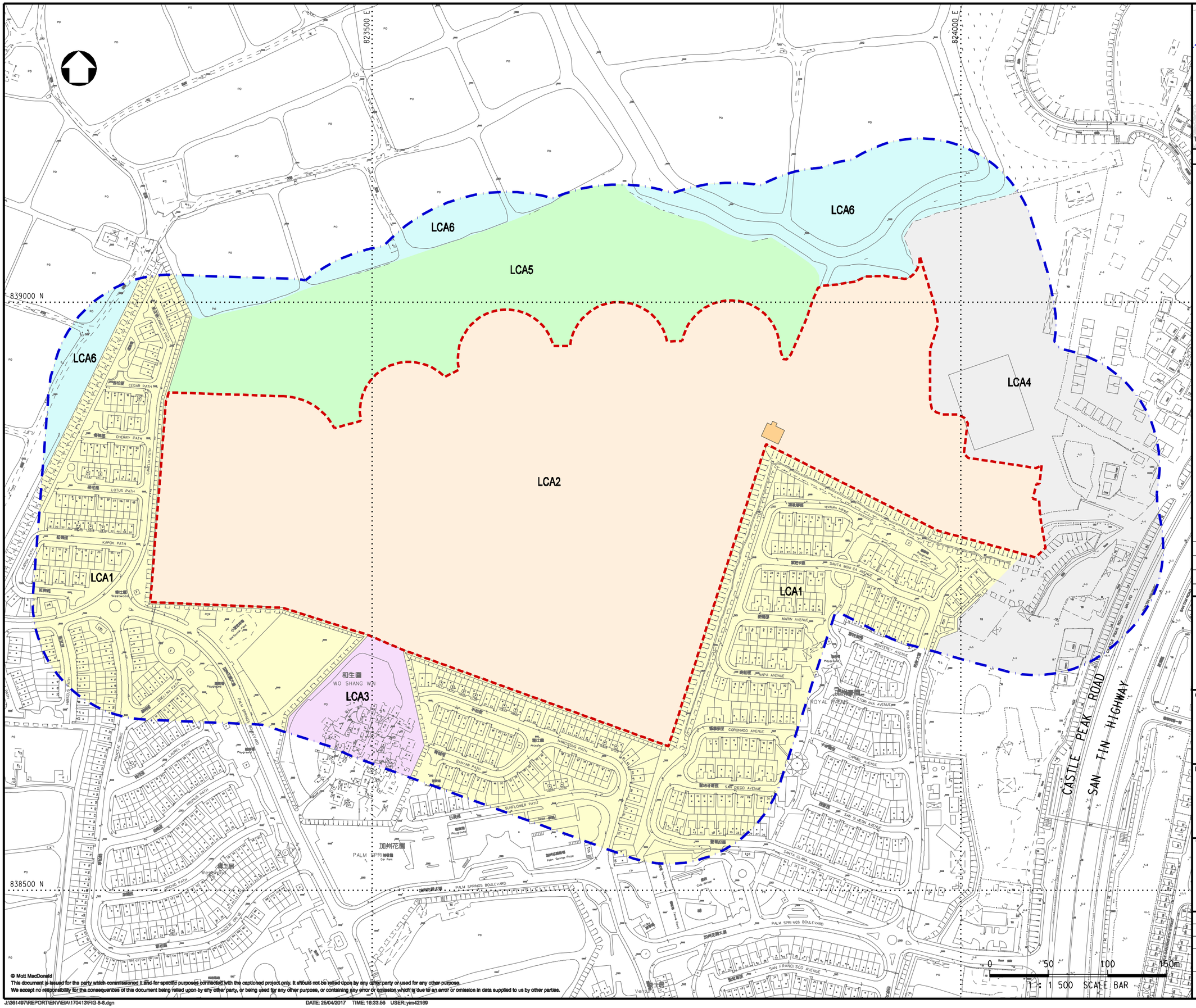
Title

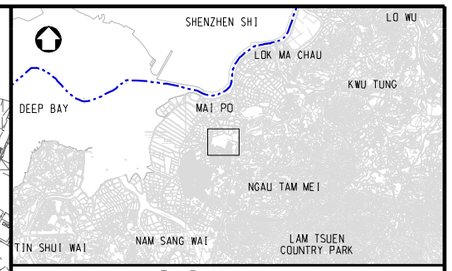
LOCATION PLAN OF LANDSCAPE CHARACTER TYPES

Designed	PK		Eng check	JC	
Drawn	MING		Coordination	JC	
Dwg check	PK		Approved	JFP	
Scale at A1 1:1500		Status PRE		Rev P3	

Drawing Number

FIGURE 8.7





KEY PLAN (1:100000)

LEGEND

- 100m LANDSCAPE STUDY AREA
- PROJECT BOUNDARY (COVERING THE ASSOCIATED WORKS)
- PROPOSED SEWAGE TREATMENT PLANT (ABOVE-GROUND STRUCTURE)
- LCA1 - LOW-RISE RURAL RESIDENTIAL DEVELOPMENT
- LCA2 - PLANNED COMPREHENSIVE DEVELOPMENT
- LCA3 - VILLAGE TYPE DEVELOPMENT
- LCA4 - RURAL OPEN AREA
- LCA5 - RESTORED WETLAND
- LCA6 - FISH PONDS

Rev	Date	Drawn	Description	Ch'k'd	App'd
P3	APR 17	MING	GENERAL REVISION	PK	EC
P2	JAN 17	MING	GENERAL REVISION	PK	JFP
P1	SEP 16	MING	FIRST ISSUE	PK	JFP

MOTT MACDONALD
20/F AIA Kowloon Tower
Landmark East
100 How Ming Street
Kwun Tong, Kowloon
Hong Kong
T +852 2828 5757
F +852 2827 1823
W mottmac.com

Client

PROFIT POINT ENTERPRISES LTD.

Project

PROPOSED INTERIM SEWAGE TREATMENT PLANT AND EFFLUENT REUSE FACILITY AT WO SHANG WAI, YUEN LONG

Title

LOCATION PLAN OF LANDSCAPE CHARACTER AREAS

Designed	PK		Eng check	JC	
Drawn	MING		Coordination	JC	
Dwg check	PK		Approved	JFP	
Scale at A1	1:1500	Status	PRE	Rev	P3

Drawing Number

FIGURE 8.8

LCA1 – Low-rise Rural Residential Development

LCA2 – Planned Comprehensive Residential Development

LCA3 – Village Type Development

J:\361497\CAD_ADMIN\MMH-361497-P-A1_TLB-N.dgn DATE: 27/09/2016 TIME: 09:47:51 USER: yim42189

Notes

Key to symbols

Reference drawings

Rev	Date	Drawn	Description	Ch'k'd	App'd
P1	SEP 16	PC	FIRST ISSUE	JC	JFP

MOTT MACDONALD
20/F AIA Kowloon Tower
Landmark East
100 How Ming Street
Kwun Tong, Kowloon
Hong Kong
T +852 2828 5757
F +852 2827 1823
W mottmac.com

Client

PROFIT POINT ENTERPRISES LTD.

Project

PROPOSED INTERIM SEWAGE TREATMENT PLANT AND EFFLUENT REUSE FACILITY AT WO SHANG WAI, YUEN LONG

Title

REPRESENTATIVE PHOTOGRAPHS OF LANDSCAPE CHARACTER AREAS (SHEET 1 OF 2)

Designed	PC		Eng check	JC	
Drawn	PC		Coordination	JC	
Dwg check	JC		Approved	JFP	
Scale at A1	N.A.	Status	PRE	Rev	P1

Drawing Number

FIGURE 8.9a

LCA4 – Rural Open Area

LCA6 – Fish Pond

LCA5 – Restored Wetland

Notes

Key to symbols

Reference drawings

Rev	Date	Drawn	Description	Ch'k'd	App'd
P2	MAR 17	PC	SECOND ISSUE	JC	JFP
P1	SEP 16	PC	FIRST ISSUE	JC	JFP

MOTT MACDONALD
20/F AIA Kowloon Tower
Landmark East
100 How Ming Street
Kwun Tong, Kowloon
Hong Kong
T +852 2828 5757
F +852 2827 1823
W mottmac.com

Client

PROFIT POINT ENTERPRISES LTD.

Project

PROPOSED INTERIM SEWAGE TREATMENT PLANT AND EFFLUENT REUSE FACILITY AT WO SHANG WAI, YUEN LONG

Title

REPRESENTATIVE PHOTOGRAPHS OF LANDSCAPE CHARACTER AREAS (SHEET 2 OF 2)

Designed	PC		Eng check	JC	
Drawn	PC		Coordination	JC	
Dwg check	JC		Approved	JFP	

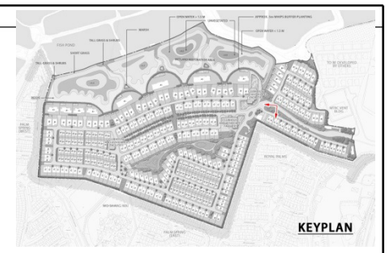
Scale at A1 **N.A.** Status **PRE** Rev **P2**

Drawing Number **FIGURE 8.9b**

Existing View from Selected Vantage Point without the Project

Anticipated View from Selected Vantage Point without the Project

Notes



Key to symbols

Reference drawings

Rev	Date	Drawn	Description	Ch'k'd	App'd
P1	SEP 16	PC	FIRST ISSUE	JC	JFP

MOTT MACDONALD
20/F AIA Kowloon Tower
Landmark East
100 How Ming Street
Kwun Tong, Kowloon
Hong Kong
T +852 2828 5757
F +852 2827 1823
W mottmac.com

Client

PROFIT POINT ENTERPRISES LTD.

Project

PROPOSED INTERIM SEWAGE TREATMENT PLANT AND EFFLUENT REUSE FACILITY AT WO SHANG WAI, YUEN LONG

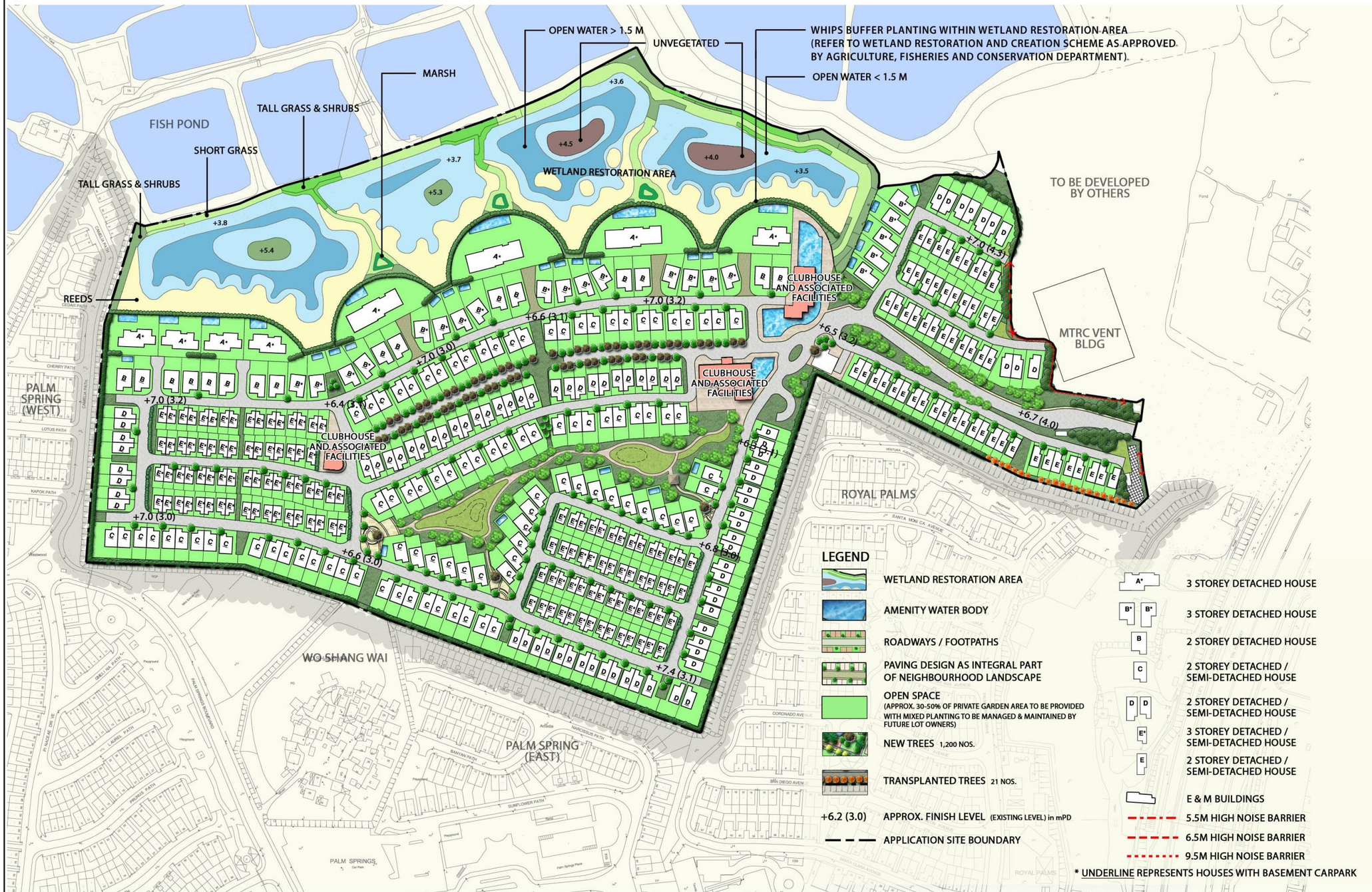
Title

EXISTING AND ANTICIPATED VIEWS FROM SELECTED VANTAGE POINT WITHOUT THE PROJECT

Designed	PC		Eng check	JC	
Drawn	PC		Coordination	JC	
Dwg check	JC		Approved	JFP	
Scale at A1	N.A.	Status	PRE	Rev	P1

Drawing Number

FIGURE 8.10



Notes

Key to symbols

Reference drawings

Rev	Date	Drawn	Description	Ch'k'd	App'd
P2	APR 18	HL	SECOND ISSUE	JC	JFP
P1	MAR 17	PC	FIRST ISSUE	JC	JFP

MOTT MACDONALD

20/F AIA Kowloon Tower
Landmark East
100 How Ming Street
Kwun Tong, Kowloon
Hong Kong
T +852 2828 5757
F +852 2827 1823
W mottmac.com

Client

PROFIT POINT ENTERPRISES LTD.

Project

PROPOSED INTERIM SEWAGE TREATMENT PLANT AND EFFLUENT REUSE FACILITY AT WO SHANG WAI, YUEN LONG

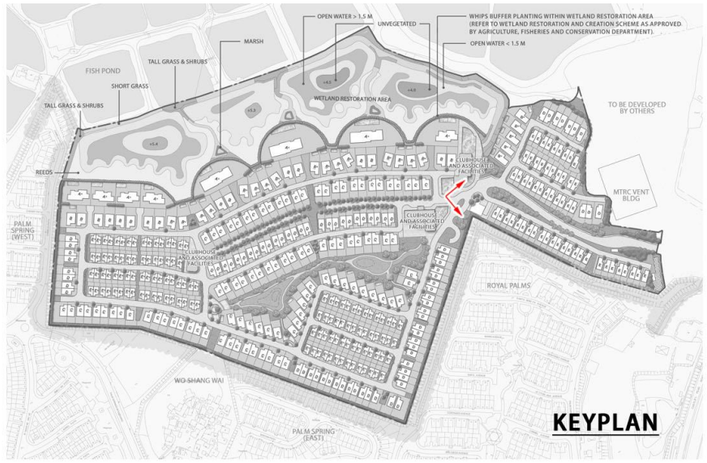
Title

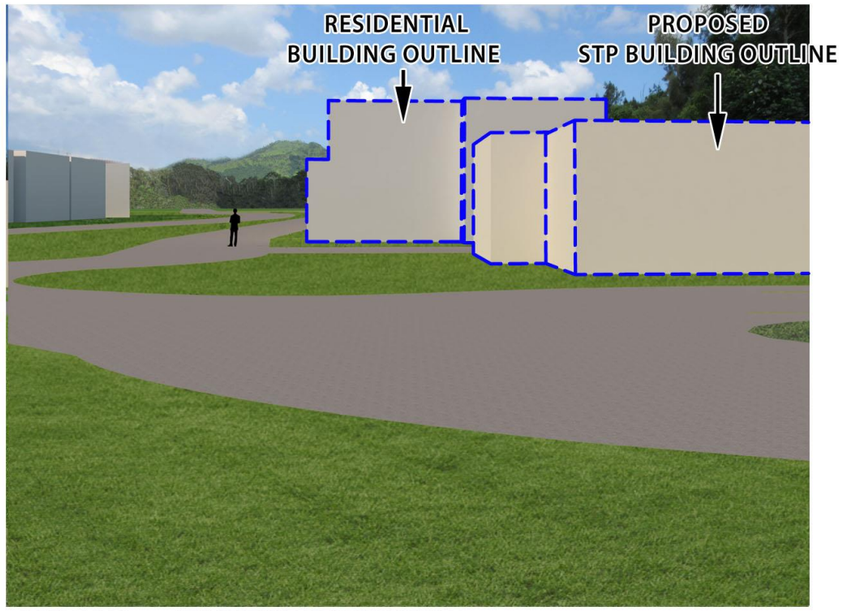
PRELIMINARY LANDSCAPE MASTER PLAN

Designed	PC		Eng check	JC	
Drawn	PC		Coordination	JC	
Dwg check	JC		Approved	JFP	
Scale at A1	N.A.	Status	PRE	Rev	P1

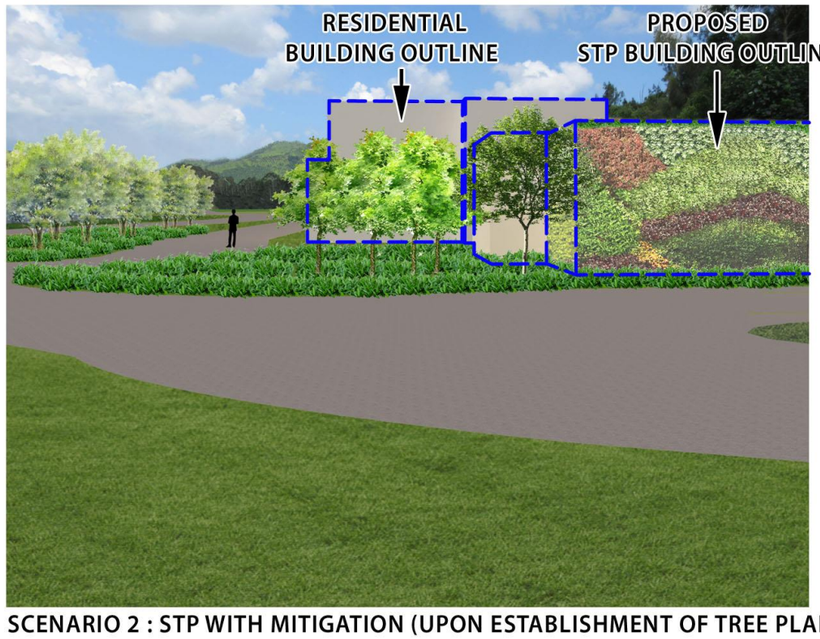
Drawing Number

FIGURE 8.11

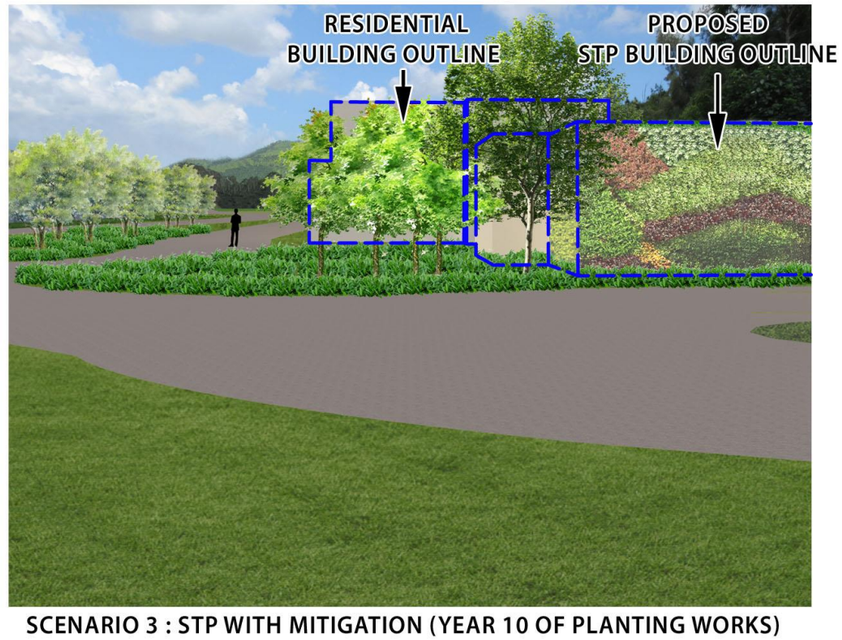




SCENARIO 1 : STP WITHOUT MITIGATION



SCENARIO 2 : STP WITH MITIGATION (UPON ESTABLISHMENT OF TREE PLANTING)



SCENARIO 3 : STP WITH MITIGATION (YEAR 10 OF PLANTING WORKS)

Notes

Key to symbols

Reference drawings

Rev	Date	Drawn	Description	Ch'k'd	App'd
P3	SEP 17	PC	THIRD ISSUE	JC	JFP
P2	MAR 17	PC	SECOND ISSUE	JC	JFP
P1	SEP 16	PC	FIRST ISSUE	JC	JFP

MOTT MACDONALD
20/F AIA Kowloon Tower
Landmark East
100 How Ming Street
Kwun Tong, Kowloon
Hong Kong
T +852 2828 5757
F +852 2827 1823
W mottmac.com

Client

PROFIT POINT ENTERPRISES LTD.

Project

PROPOSED INTERIM SEWAGE TREATMENT PLANT AND EFFLUENT REUSE FACILITY AT WO SHANG WAI, YUEN LONG

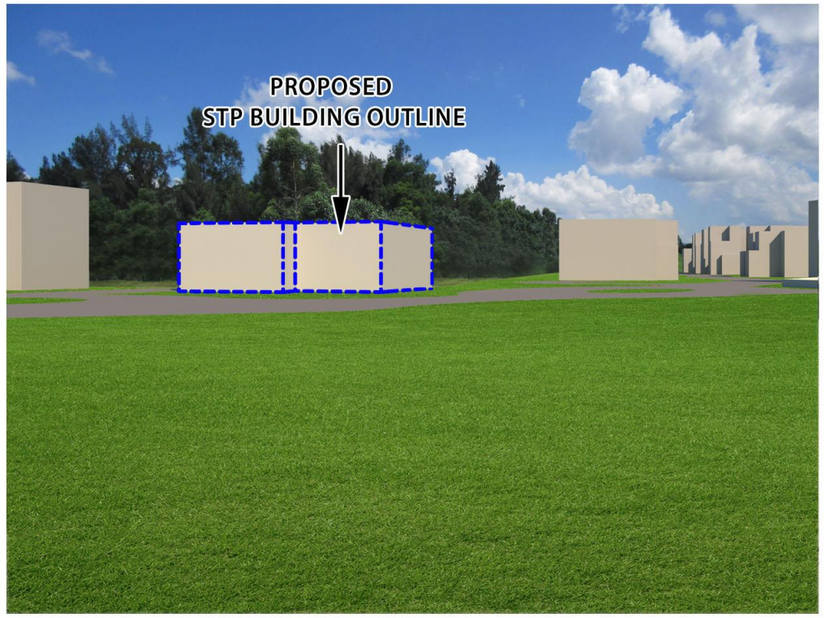
Title

PHOTOMONTAGES FOR VANTAGE POINT AT VSR1

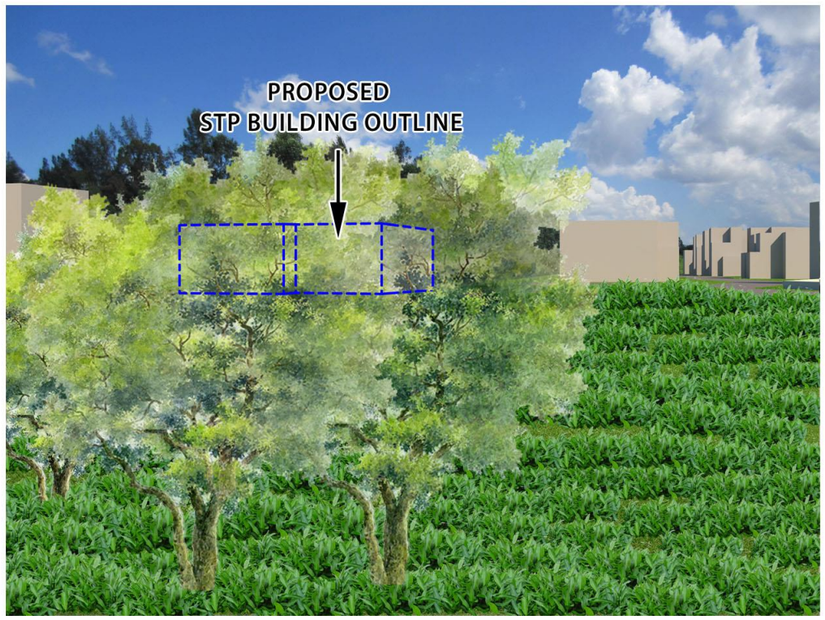
Designed	PC		Eng check	JC	
Drawn	PC		Coordination	JC	
Dwg check	JC		Approved	JFP	
Scale at A1	N.A.	Status	PRE	Rev	P3

Drawing Number

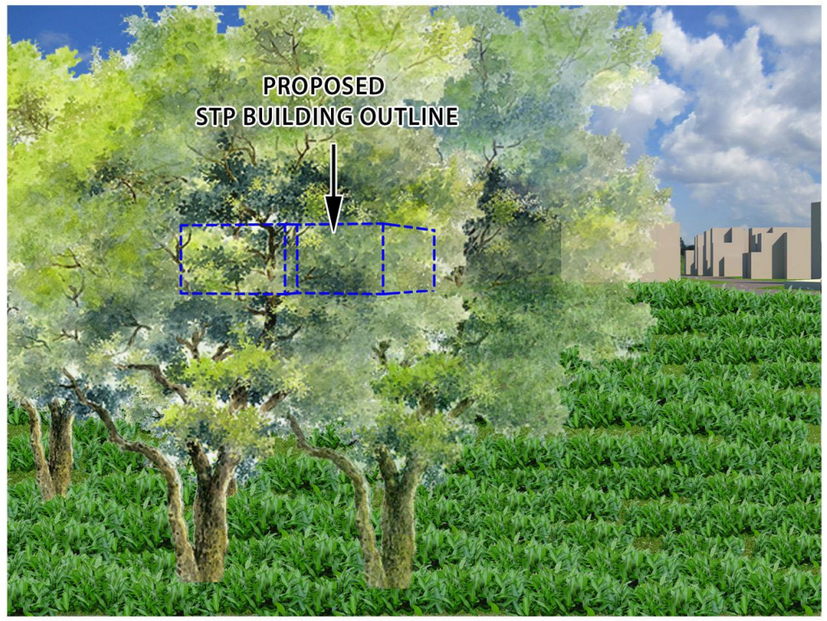
FIGURE 8.12a



SCENARIO 1 : STP WITHOUT MITIGATION



SCENARIO 2 : STP WITH MITIGATION (UPON ESTABLISHMENT OF TREE PLANTING)



SCENARIO 3 : STP WITH MITIGATION (YEAR 10 OF PLANTING WORKS)

J:\361497\CAD_ADMIN\MMH-361497-P-A1_TLB-N.dgn DATE: 27/09/2016 TIME: 09:47:51 USER: yim42169

Notes

Key to symbols

Reference drawings

Rev	Date	Drawn	Description	Ch'k'd	App'd
P1	SEP 17	PC	FIRST ISSUE	JC	JFP

MOTT MACDONALD
20/F AIA Kowloon Tower
Landmark East
100 How Ming Street
Kwun Tong, Kowloon
Hong Kong
T +852 2828 5757
F +852 2827 1823
W mottmac.com

Client

PROFIT POINT ENTERPRISES LTD.

Project

PROPOSED INTERIM SEWAGE TREATMENT PLANT AND EFFLUENT REUSE FACILITY AT WO SHANG WAI, YUEN LONG

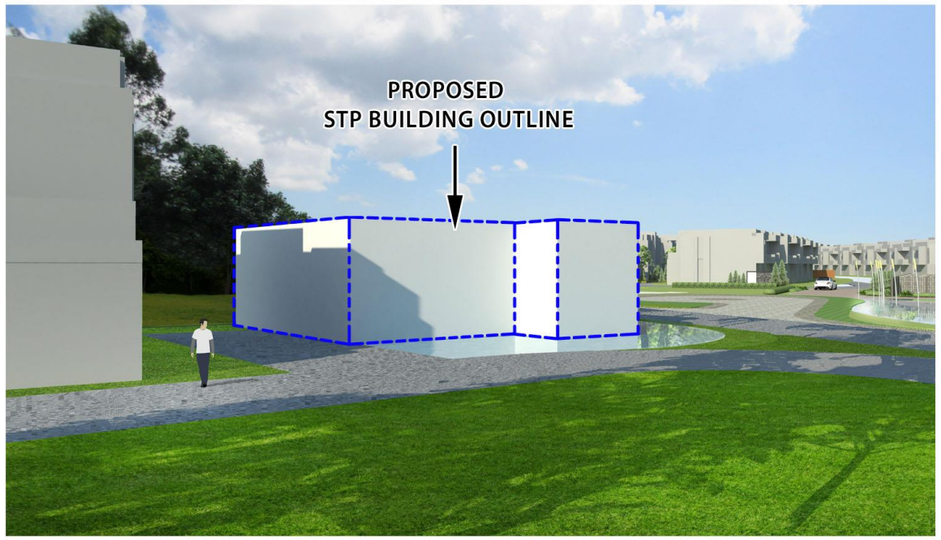
Title

PHOTOMONTAGES FOR VANTAGE POINT AT VSR2

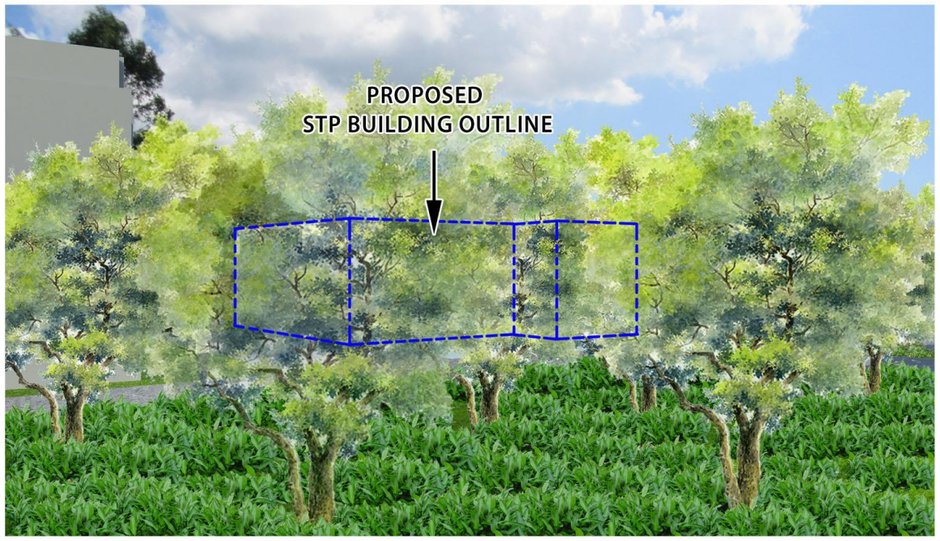
Designed	PC		Eng check	JC	
Drawn	PC		Coordination	JC	
Dwg check	JC		Approved	JFP	
Scale at A1	N.A.	Status	PRE	Rev	P1

Drawing Number

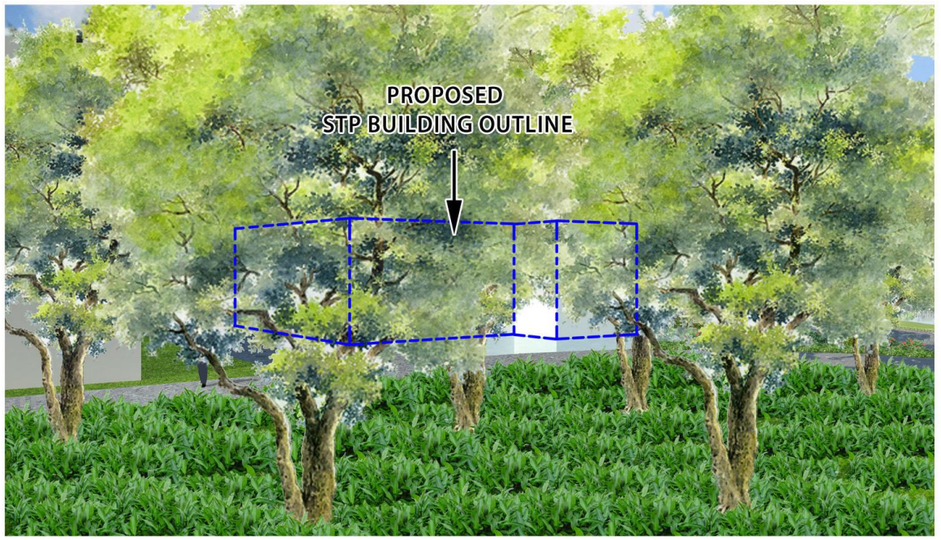
FIGURE 8.12b



SCENARIO 1 : STP WITHOUT MITIGATION



SCENARIO 2 : STP WITH MITIGATION (UPON ESTABLISHMENT OF TREE PLANTING)



SCENARIO 3 : STP WITH MITIGATION (YEAR 10 OF PLANTING WORKS)

Notes

Key to symbols

Reference drawings

Rev	Date	Drawn	Description	Ch'k'd	App'd
P1	SEP 17	PC	FIRST ISSUE	JC	JFP

MOTT MACDONALD
20/F AIA Kowloon Tower
Landmark East
100 How Ming Street
Kwun Tong, Kowloon
Hong Kong
T +852 2828 5757
F +852 2827 1823
W mottmac.com

Client

PROFIT POINT ENTERPRISES LTD.

Project

PROPOSED INTERIM SEWAGE TREATMENT PLANT AND EFFLUENT REUSE FACILITY AT WO SHANG WAI, YUEN LONG

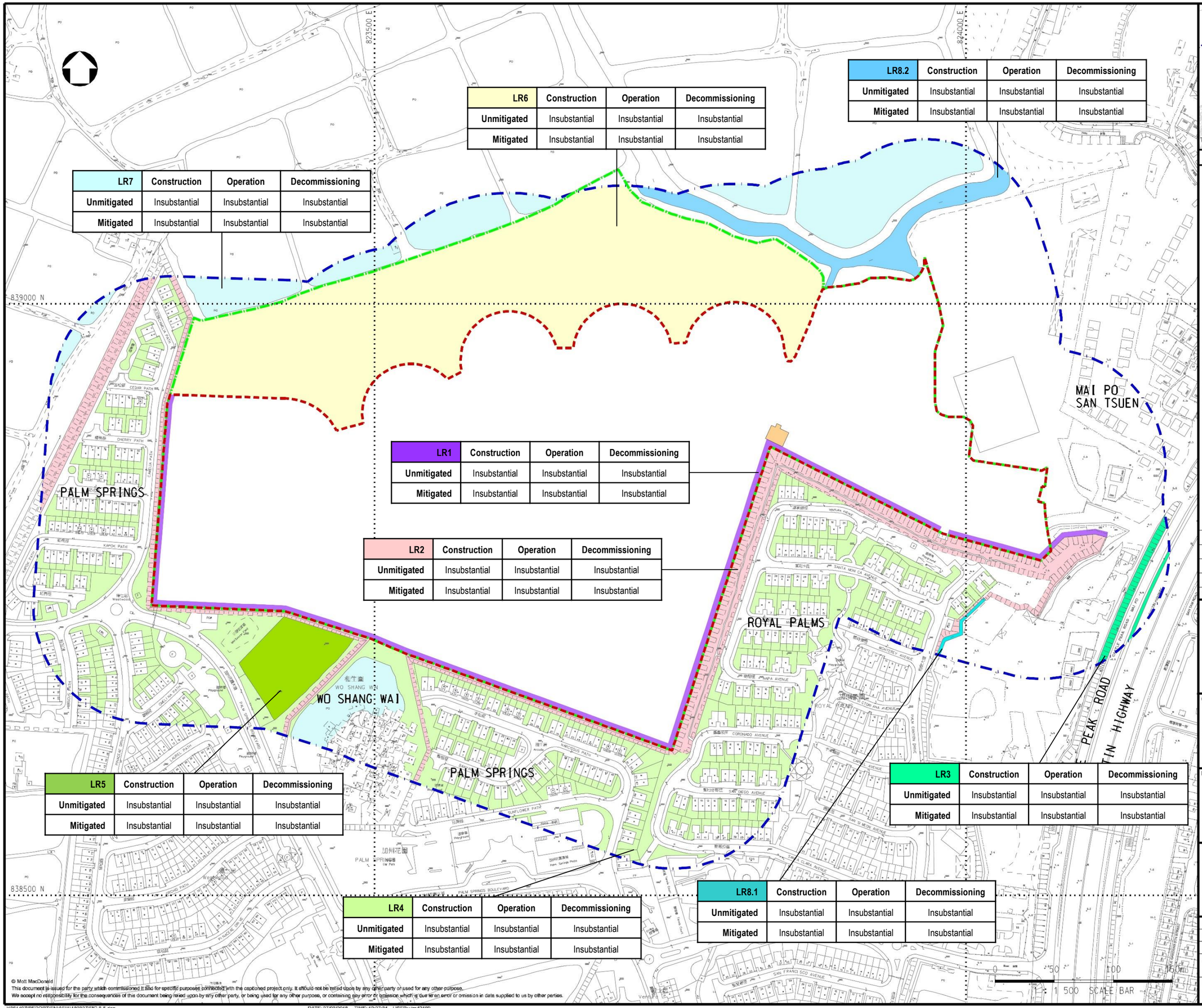
Title

PHOTOMONTAGES FOR VANTAGE POINT AT VSR3

Designed	PC		Eng check	JC	
Drawn	PC		Coordination	JC	
Dwg check	JC		Approved	JFP	

Scale at A1: **N.A.** Status: **PRE** Rev: **P1**

Drawing Number: **FIGURE 8.12c**



LR6	Construction	Operation	Decommissioning
Unmitigated	Insubstantial	Insubstantial	Insubstantial
Mitigated	Insubstantial	Insubstantial	Insubstantial

LR8.2	Construction	Operation	Decommissioning
Unmitigated	Insubstantial	Insubstantial	Insubstantial
Mitigated	Insubstantial	Insubstantial	Insubstantial

LR7	Construction	Operation	Decommissioning
Unmitigated	Insubstantial	Insubstantial	Insubstantial
Mitigated	Insubstantial	Insubstantial	Insubstantial

LR1	Construction	Operation	Decommissioning
Unmitigated	Insubstantial	Insubstantial	Insubstantial
Mitigated	Insubstantial	Insubstantial	Insubstantial

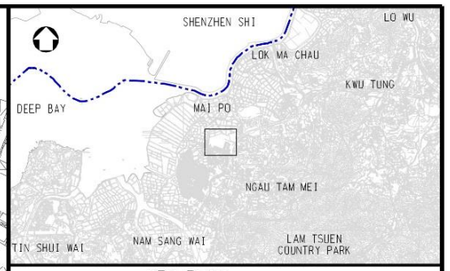
LR2	Construction	Operation	Decommissioning
Unmitigated	Insubstantial	Insubstantial	Insubstantial
Mitigated	Insubstantial	Insubstantial	Insubstantial

LR5	Construction	Operation	Decommissioning
Unmitigated	Insubstantial	Insubstantial	Insubstantial
Mitigated	Insubstantial	Insubstantial	Insubstantial

LR3	Construction	Operation	Decommissioning
Unmitigated	Insubstantial	Insubstantial	Insubstantial
Mitigated	Insubstantial	Insubstantial	Insubstantial

LR4	Construction	Operation	Decommissioning
Unmitigated	Insubstantial	Insubstantial	Insubstantial
Mitigated	Insubstantial	Insubstantial	Insubstantial

LR8.1	Construction	Operation	Decommissioning
Unmitigated	Insubstantial	Insubstantial	Insubstantial
Mitigated	Insubstantial	Insubstantial	Insubstantial



KEY PLAN (1:100000)

LEGEND

- 100m LANDSCAPE STUDY AREA
- PROJECT BOUNDARY (COVERING THE ASSOCIATED WORKS)
- COMPREHENSIVE DEVELOPMENT AT WO SHANG WAI (EP-311/2008/D)
- PROPOSED SEWAGE TREATMENT PLANT (ABOVE-GROUND STRUCTURE)
- LR1 - SCREEN PLANTING
- LR2 - PERIPHERY PLANTING
- LR3 - ROADSIDE PLANTING
- LR4 - AMENITY PLANTING
- LR5 - TREE PLANTING
- LR6 - RESTORED WETLAND
- LR7 - POND
- LR8.1 - WATERCOURSE (DRAINAGE CHANNELS AT THE EAST OF PALM SPRINGS)
- LR8.2 - WATERCOURSE (DRAINAGE CHANNELS AT THE NORTH OF THE PROJECT SITE)

Rev	Date	Drawn	Description	Ch'k'd	App'd
P4	MAR 18	MING	GENERAL REVISION	HL	EC
P3	APR 17	MING	GENERAL REVISION	PK	EC
P2	JAN 17	MING	GENERAL REVISION	PK	JFP
P1	SEP 16	MING	FIRST ISSUE	PK	JFP

MOTT MACDONALD
20/F AIA Kowloon Tower
Landmark East
100 How Ming Street
Kwun Tong, Kowloon
Hong Kong
T +852 2828 5757
F +852 2827 1823
W mottmac.com

Client

PROFIT POINT ENTERPRISES LTD.

Project

PROPOSED INTERIM SEWAGE TREATMENT PLANT AND EFFLUENT REUSE FACILITY AT WO SHANG WAI, YUEN LONG

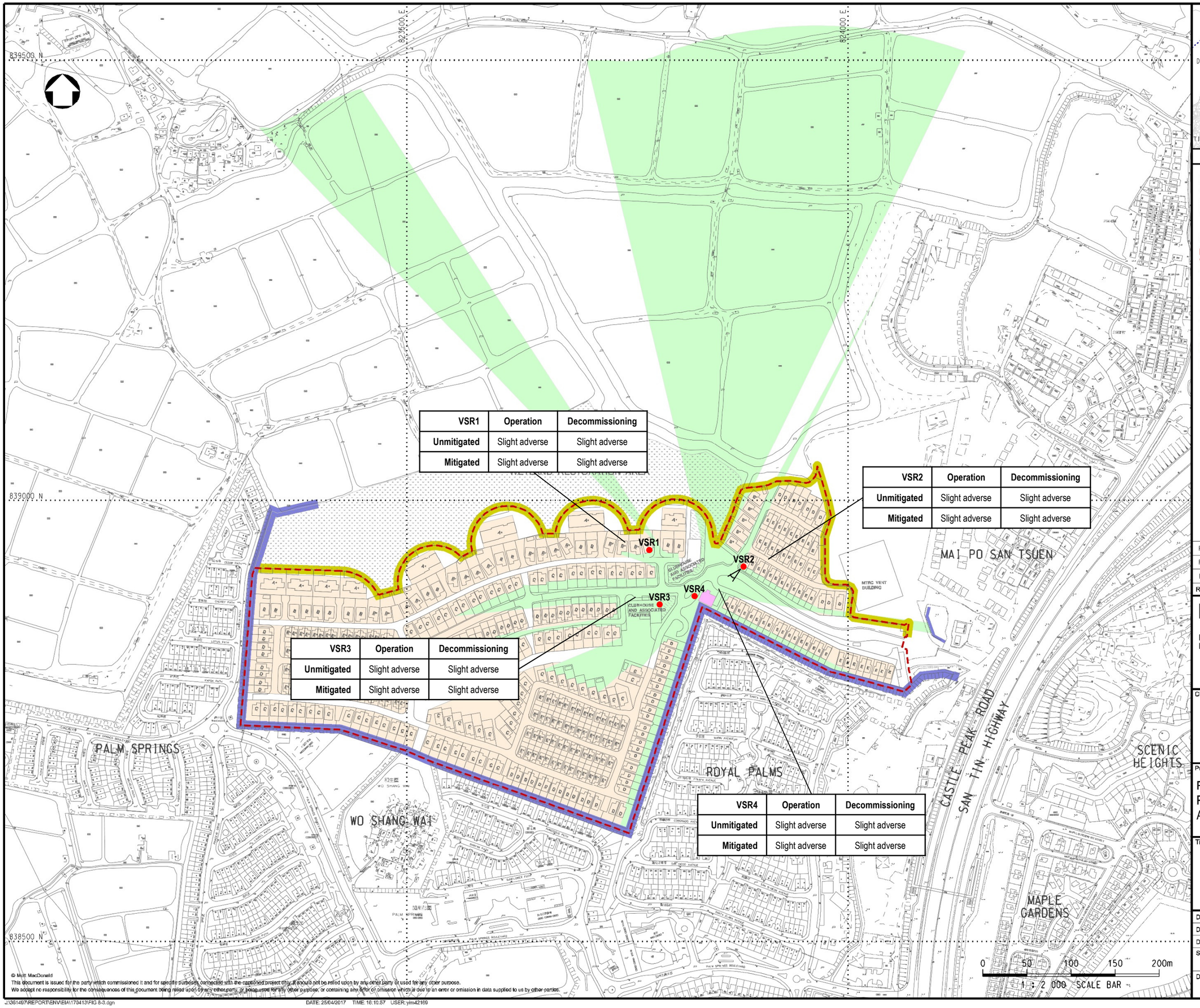
Title

ASSESSMENT OF LANDSCAPE IMPACT

Designed	PK		Eng check	JC	
Drawn	MING		Coordination	JC	
Dwg check	HL		Approved	EC	
Scale at A1	1:1500	Status	PRE	Rev	P4

Drawing Number

FIGURE 8.13

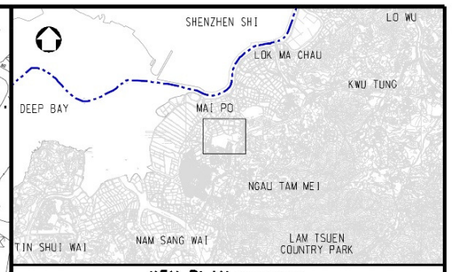


VSR1	Operation	Decommissioning
Unmitigated	Slight adverse	Slight adverse
Mitigated	Slight adverse	Slight adverse

VSR2	Operation	Decommissioning
Unmitigated	Slight adverse	Slight adverse
Mitigated	Slight adverse	Slight adverse

VSR3	Operation	Decommissioning
Unmitigated	Slight adverse	Slight adverse
Mitigated	Slight adverse	Slight adverse

VSR4	Operation	Decommissioning
Unmitigated	Slight adverse	Slight adverse
Mitigated	Slight adverse	Slight adverse



KEY PLAN (1:100000)

NOTE:

THE PRELIMINARY LAYOUT IS TENTATIVE AND IS USED FOR ASSESSMENT OF THE COVERAGE OF THE ZONE OF VISUAL INFLUENCE ONLY.

LEGEND:

- PROJECT BOUNDARY (COVERING THE ASSOCIATED WORKS)
- PROPOSED SEWAGE TREATMENT PLANT (ABOVE-GROUND STRUCTURE)
- ZONE OF VISUAL INFLUENCE DURING OPERATION PHASE
- WO SHANG WAI PLANNED RESIDENTIAL BLOCKS
- SITE HOARDING
- NOISE BARRIER
- VISUALLY SENSITIVE RECEIVER
- VANTAGE POINT

Rev	Date	Drawn	Description	Ch'k'd	App'd
P3	APR 17	MING	GENERAL REVISION	PK	EC
P2	JAN 17	MING	GENERAL REVISION	PK	JFP
P1	SEP 16	MING	FIRST ISSUE	PK	JFP

MOTT MACDONALD
20/F AIA Kowloon Tower
Landmark East
100 How Ming Street
Kwun Tong, Kowloon
Hong Kong
T +852 2828 5757
F +852 2827 1823
W mottmac.com

Client

PROFIT POINT ENTERPRISES LTD.

Project

PROPOSED INTERIM SEWAGE TREATMENT PLANT AND EFFLUENT REUSE FACILITY AT WO SHANG WAI, YUEN LONG

Title

ASSESSMENT OF VISUAL IMPACT

Designed	PK PC		Eng check	JC JC	
Drawn	MING		Coordination	JC	
Dwg check	PK		Approved	JFP	
Scale at A1 1:2000		Status PRE		Rev P3	

Drawing Number

FIGURE 8.14

Appendix 2.1
Approved Sewerage Impact Assessment

Interim Sewage Treatment Plant and

Effluent Reuse Facility at Wo Shang Wai, Yuen Long

Sewerage Impact Assessment

January 2016

AECOM

CONTENTS

LIST OF FIGURES

LIST OF ANNEXES

1. INTRODUCTION

1.1 Background

1.1.1.1 AECOM Asia Company Limited (AECOM) was commissioned by Profit Point Enterprises Limited to act as an engineering consultant for the proposed Comprehensive Residential Development at Wo Shang Wai, Yuen Long.

1.1.1.2 Presently, the planning application for this project under Section 16 of Town Planning Ordinance (Cap. 131) (application no. A/YL-MP/229) was approved with conditions by the Rural and New Town Planning Committee of the Town Planning Board on 27 February 2015. This Sewerage Impact Assessment (SIA) report serves as a supporting document for discharging approval conditions (o) from Planning Department.

1.1.1.3 The site area of Comprehensive Development in Wo Shang Wai (hereinafter referred to as the "WSW Development") is located by the side of Castle Peak Road and San Tin Highways as shown in **Figure 1**. To the immediate south and west of the WSW Development, there are the existing Wo Shang Wai Village, residential developments namely Royal Palms and Palm Springs. Besides, there are fish ponds to the north and village development to the east of the WSW Development.

1.1.1.4 The WSW Development comprises of houses and residential facilities including club house, landscaped open spaces, refuse collection point, car parks, and a wetland restoration area.

1.1.1.5 The Development will be occupied in phases, with the delineation as shown on Figure 1. According to the latest schedule, Phase 1 area (i.e. western portion of the Site) would be occupied by early 2017, while Phase 2 (i.e. eastern portion of the Site) is tentatively scheduled to be occupied by end 2017. This assessment covers the sewage flow to be generated by both phases of the development.

1.1.1.6 As stipulated in the Environmental Permit (EP) No. EP-311/2008/C Condition 5.13, "the residential units shall be occupied only after sewage can be discharged to government sewerage network". However, the implementation programme of the government sewerage network outside the WSW Development is uncertain at the current moment. The population in-take for the proposed development would likely be in advance to the commissioning of the public sewer, it is necessary to consider the provision of the on-site sewage treatment facility as an interim measure to handle the sewage generated from the WSW Development before the availability of public sewerage for connection despite connection to the public sewerage system at Castle Peak Road is still the permanent and long term measure.

1.1.1.7 The interim sewage treatment facility consists of an on-site sewage treatment plant (STP) and an effluent reuse facility. Except serving as an interim measure before the government sewerage network is available, the interim Sewage Treatment Plant will also involve sewage treatment for on-site effluent reuse for toilet flushing and irrigation of landscape areas including communal landscape area, vertical green and private gardens.

1.1.1.8 The application for the interim sewage treatment plant will follow the statutory process under the Environmental Impact Assessment Ordinance (EIAO) (Cap. 499).

1.2 Objective of the Report

1.2.1.1 The purpose of this SIA is to assess the impact of the sewage generated due to the proposed development and the revised occupation schedule. Mitigation measures would be recommended whenever necessary.

1.3 Structure of the Report

1.3.1.1 The remainder of this Report, in addition to Section 1, is structured as follows:-

- Section 2: Sewerage Impact Assessment
- Section 3: Proposed Mitigation Measures
- Section 4: Conclusions

2. SEWERAGE IMPACT ASSESSMENT

2.1 Existing and Committed Sewerage System

2.1.1.1 The existing land use for the WSW Development comprises bare ground and grassland. The site falls within the Yuen Long / Kam Tin sewerage catchment. According to the existing sewerage record, there is no sewerage system in the vicinity to the site area. The area where the WSW Development located is classified as unsewered area under the Yuen Long and Kam Tin Sewerage Master Plan (YLKT SMP).

2.1.1.2 In the Yuen Long/ Kam Tin sewerage catchment, only Yuen Long town centre, Hung Shui Kiu and Tin Shui Wai are currently served by the public sewerage network. The collected sewage in the public sewer is conveyed to the Yuen Long Sewage Treatment Works (YLSTW), which is located at north of Yuen Long town centre, for secondary treatment before discharging into the Deep Bay.

2.1.1.3 Sewerage provision to unsewered areas in Yuen Long and Kam Tin areas was proposed under the review of YLKT SMP. Further to the recommendation made in the previous studies, a DN900 twin rising mains and the Nam Sang Wai Sewage Pumping Station was constructed under PWP Item No. 4215DS. The pumping station is located adjacent to Kam Tin River and is connected to the rising mains which run along Kam Tin River and Shan Pui River to YLSTW. The alignment of the proposed rising mains and location of the pumping station are shown in **Figures 2 and 3**. This sewerage system is designed to transport the sewage from Kam Tin, San Tin and Ngau Tam Mei catchments to YLSTW for treatment. The construction works commenced in December 2005 and was completed in 2010.

2.1.1.4 Apart from the committed works mentioned above, there is another proposed trunk sewer , namely Ngau Tam Mei trunk sewer, which serves the Ngau Tam Mei and San Tin sewerage catchment under PWP Item No. 4235DS. The Ngau Tam Mei trunk sewer, size ranges from DN525 to DN825, runs along Castle Peak Road southward to the proposed Ngau Tam Mei Sewage Pumping Station, which will pump the sewage to the Nam Sang Wai Sewage Pumping Station constructed under 4215DS.

2.1.1.5 As advised by the Mainland North Division of Drainage Services Department (DSD/MND) in the Rural and New Town Planning Committee (RNTPC) Paper No. A/YL-MP/229C dated 27 February 2015, the Ngau Tam Mei Trunk Sewerage is tentatively scheduled to commence in the end of 2017 for completion in 2021 provided that local/public support can be obtained shortly and funding is available. The PNTPC paper is attached in **Annex A** for information. The proposed trunk sewerage might not be available in the near future, which means that the implementation programme is uncertain.

2.2 Population Projection

2.2.1.1 The WSW Development will be occupied in phases. According to the schedule, Phase 1 area (i.e. western portion of the Site) would be occupied by early 2017, while Phase 2 (i.e. eastern portion of the Site) is tentatively scheduled to be occupied by end 2017.

2.2.1.2 The population for the WSW Development is summarised in **Table 1**:-

Table 1 - Population Projection

Population Type	Head
Resident [(1)]	
Number of House[(3)]	400
Number of Head per House	3
Total Residential Population	1200
Staff [(2)]	
Total Staff	45
Total Population	1245

Remarks:-

(1) It is assumed that each house is occupied by 1 household and each household contains 3 persons.

(2) It is assumed that there will be a total of 45 staff which includes management office staff, club house staff and security staff.

(3) Number of houses are the total of both Phase 1 and Phase 2 of the development.

2.3 Sewage Flow Projection

2.3.1.1 The sewage discharge from the proposed residential development comprises of flow contribution from residential population, the security staff, club house and the management staff. The accumulative average dry weather flows of proposed development are estimated based on the *Guidelines for Estimating Sewage Flows for Sewage Infrastructure Planning* published by EPD and shown in **Table 2**:-

Table 2 - Flow Projection for the WSW Development

	Units	Resident	Staff	Pool[(2)]	Total
Design Population	head	1200	45	-	1245
Unit Flow Factor[(1)]	m^3/head/d	0.37	0.28	-	-
Design Average Dry Weather Flow (ADWF)	m^3/d	444	13	25	482

Note:

(1) The unit flow factors for the resident and staff are extracted from Guidelines for Estimating Sewage Flows for Sewage Infrastructure Planning. The unit flow factor for commercial activities type J11, community, social & personal services is adopted for estimating the flow generated by the staff.

*(2) The sewage flow generated from the pools in clubhouse and individual houses is estimated to be 25m^3/day. The estimation of the sewage flow from pools is attached in **Annex B** for reference.*

2.3.1.2 For estimating the peak flows of the proposed sewerage system, design peaking factors, including stormwater allowance, as stipulated in Table T-5 of Guideline for Estimating Sewage Flows (GESF) is adopted. The estimated peak flow will be adopted for the design of the proposed sewers within the WSW Development. The design peak flow of the WSW Development is 32.0 l/s.

2.4 Sewerage Impact

2.4.1.1 In general, within the WSW Development area, manholes will be located at various points along the sewers either to accept a connection from individual building or at a change of horizontal or vertical alignment. The manholes will provide access for cleaning and maintenance purposes. The sewer will be designed in accordance with the Sewerage Manual published by Drainage Services Department (DSD) and the Building Ordinance.

2.4.1.2 The size of the proposed sewerage system is determined by Colebrook-white equation. The proposed size of sewer is ranged from 150mm to 375mm depending on the sewerage catchment area. The detailed design of the sewerage system within the WSW Development area will be submitted to relevant departments, including BD and DSD, for comments in detailed design stage.

2.4.1.3 As sewage will be discharged into the public foul sewer at Castle Peak Road which will be eventually conveyed to the YLSTW, effluents discharged into the public sewers will follow the standards laid down in Table 1 of the EPD's technical memorandum of "*Standards for Effluents Discharged into Drainage and Sewerage Systems, Inland and Coastal Waters*" under Water Pollution Control Ordinance (WPCO), Cap. 358, S21.

2.4.1.4 Size of the planned Ngau Tam Mei trunk sewer ranges from DN525 to DN825 which are at the gradient of 1 in 450 to 1 in 750. The trunk sewer will be laid along Castle Peak Road and connect to Ngau Tam Mei Sewage Pumping Station next to Kam Pok Road.

2.4.1.5 An assessment has been carried out to check the capacity of Ngau Tam Mei trunk sewer, with details shown in **Annex C**. As revealed from the assessment result, the Ngau Tam Mei trunk sewer, which has a maximum capacity of 0.463m^3/s, is sufficient to receive the sewage flow from the WSW Development as well as other developments within Ngau Tam Mei and San Tin sewerage catchment.

2.4.1.6 The Feasibility Study of Provision of Sewerage to Unsewered Areas/Villages in Northwest New Territories revealed that the total projected flow to be conveyed to YLSTW in Year 2030 is 44,790m^3/d, whilst the design capacity of the planned YLSTW will be changed from 70,000m^3/d to 46,000m^3/d under the ongoing project of effluent polishing scheme. Even with the reduced design capacity, the YLSTW will still have sufficient capacity to handle the flow generated from the WSW Development of 482m^3/d. As such, both the trunk sewer and the YLSTW have sufficient capacity to cater for the additional flow from the WSW Development. There will not be any adverse impact on the existing and planned sewerage system due to the WSW Development. In this regards, it is proposed to connect the sewerage system for the WSW Development to the public sewerage system at Castle Peak Road as permanent and long term measure. The schematic layout of sewerage network within the WSW Development is shown in **Figure 4** for reference.

2.4.1.7 Since the population in-take for the WSW Development would be in advance to the commissioning of the public sewer, it is necessary to consider the provision of the on-site sewage treatment facility as an interim measure to handle the sewage generated from the WSW Development before the availability of public sewerage for connection despite connection to the public sewerage system at Castle Peak Road is still the permanent and long term measure.

3. PROPOSED MITIGATION MEASURES

3.1 Proposed Interim On-Site Sewage Treatment Plant

3.1.1.1 The estimated average dry weather flow (ADWF) due to development is about 482m^3/day. Previous experience revealed that the use of temporary sewage storage for tankering away this quantity of sewage to YLSTW is unlikely feasible, due to the associated odour problems and the high demand, if not impossible, of tanker.

3.1.1.2 It is considered that the provision of on-site sewage treatment plant (STP) as an interim measures is one of the feasible options to handle the sewage generated from the WSW Development. The on-site STP will be provided near the roundabout beside the future clubhouse, and commissioned prior to the occupation of Phase 1 development. The preliminary design of interim sewerage network within the WSW Development is shown in **Figure 5** for reference.

3.1.1.3 It is proposed to adopt Membrane Bioreactor (MBR) technology for sewage treatment in the STP. The process flow diagram showing the treatment process of the interim STP is illustrated in **Figure 6** for reference. The on-site sewage treatment facility will be designed generally in accordance with EPD's "Guidelines for the Design of Small Sewage Treatment Plant". Considering the high sensitivity of the development site, it is proposed to design the STP with capacity to handle a peak flow of 3 times of ADWF (i.e. 1,446m^3/d) with the excess flow over 3 times of ADWF being equalized in an equalization tank of adequate volume to store up at least such flow for 4 hours (i.e. 241m^3).

3.1.1.4 The on-site sewage treatment facility will be decommissioned when the trunk sewer becomes available for connection. The wastewater flow generated from the WSW Development of 482m^3/d will ultimately be discharged to the Ngau Tam Mei trunk sewer.

3.1.1.5 Except serving as interim measure before the government sewerage network is available, the treated effluent by the interim STP will be fully reused for toilet flushing and irrigation of landscape areas.

3.1.1.6 According to unit flow factor as recommended in Appendix III(3) of EPD's "Guidelines for Estimating Sewage Flows for Sewage Infrastructure Planning", the estimated toilet flushing water demand for the Development is 78m^3/d. The quantities of treated effluent from the STP (i.e. 482m^3/d) will be sufficient for supplying toilet flushing water for the whole Development with surplus to be used for irrigation.

3.1.1.7 A minimum of 50,850m^2 landscape areas within the Development will be maintained, adopting the remaining reclaimed effluent for irrigation, including communal landscape area, vertical green and private gardens. The layout of different types of landscape areas with effluent reuse for irrigation is shown in **Figure 7**. An average irrigation rate of 10 l/m^2/d is assumed with reference to the irrigation rate adopted in the approved Water Supply Impact Assessment of the project "CE35/2006 (CE) - Kai Tak Engineering Study cum Design and Construction of Advance Works – Investigation, Design and Construction". The assumed irrigation rate has made allowance for rainy days, which means a higher irrigation demand would be required during non-rainy days. Reference has also made to the approved EIA report of the project "Sludge Treatment Facilities" (EIA-155/2008), which estimated reclaimed water demand for the landscaping area based on a daily consumption rate of 12 l/m^2/d. As such, the adopted average irrigation rate (i.e. 10 l/m^2/d) is considered conservative for the purpose of estimation of irrigation water demand for the proposed Development. Additionally, the excessive reclaimed water, if any, will also be reused for irrigation of vertical green to be proposed under detailed landscape design.

3.1.1.8 The estimations of reclaimed water demand for toilet flushing and landscape irrigation are tabulated in **Table 3A and 3B** below:-

Table 3A – Estimation of Reclaimed Water Demand for Toilet Flushing(1)

	Units	Toilet Flushing	
		Resident	Staff
Design Population	head	1200	45
Unit Flow Factor(1)	m^3/head/d	0.063	0.05
Average Daily Demand	m^3/d	**78**	

Note:

(1) Quantity of toilet flushing is estimated according to Appendix III of Guidelines for Estimating Sewage Flows for Sewage Infrastructure Planning.

Table 3B – Estimation of Reclaimed Water Demand for Landscape Irrigation(1)

	Units	Landscape Irrigation				Total
		Communal Open Space's Landscape	Communal Landscape & Perimeter Landscape	Communal Streetside Landscape	Private Garden	
Area	m^2	11,681	7,500	2,000	29,669(2)	--
Irrigation Rate	l/m^2/d	10(3)				--
Average Daily Demand	m^3/d	117	75	20	297	**509**

Note:

(1) Figures in the table are approximate and subject to detailed design. The Deed of Mutual Covenant (DMC) will stipulate the minimum requirement of landscape area (50,850m^2) adopting reclaimed water for irrigation in the development, which is one of the design parameters of the Planning Submission. The DMC Manager shall manage and maintain the common landscape area while he/she shall also manage the private gardens by house rules to ensure the minimum landscape areas are provided. Should there be any intention of modification or removal of landscape area or irrigation system inside the private garden by future private house owners, prior approval should be obtained from the DMC Manager.
In addition, a pre-set semi-automatic control irrigation system with underground drip pipes would be installed in the private garden and managed by DMC manager to ensure that reclaimed water would be used up for irrigation. Should there be any intention of modification or removal of landscape area or irrigation system inside the private garden by future private house owners, prior approval should be obtained from the DMC Manager.

(2) The overall landscape coverage in private garden (29,669m^2) is about 50% of the total private garden area (59,337m^2).

(3) The irrigation rate is an average rate with allowance for rainy days, and an average water demand of 10 l/m^2/d would be required under the detailed landscaping design.

3.1.1.9 As shown above, the treated effluent water could be fully utilized within the site (i.e. 78m^3/d + 509m^3/d =587m^3/d, which is larger than 482m^3/d). In case of potential adverse weather condition (e.g. successive heavy rainy days) or maintenance period of landscape area, an effluent storage buffer tank, which does not form part of the storage volume for regular operation of the STP, would be provided on site to temporarily store any excessive reclaimed water. The reclaimed water would be progressively consumed in following period or used in case of shortage of irrigation water. Any further excessive reclaimed water will be tanked away to public Sewage Treatment Works to prevent overflow of treated effluent.

3.1.1.10 The buffer tank is sized with adequate volume to cater for most of the extreme weather condition so that the frequency for tanking away can be minimized. In order to size the buffer tank, the past rainfall records from 2004 to 2013 at a nearby weather station (Au Tau Automatic Weather Station) were reviewed. It is considered that no irrigation would be required when the soil is saturated at the landscaping area. It is thus assumed that irrigation would normally stop when daily rainfall depth reaches 15mm (assuming a runoff coefficient of 0.35), which is equivalent to the average daily irrigation rate (i.e. 10 l/m^2/d). According to the rainfall records, successive rainfall events with daily rainfall depth over 15mm mostly occurred in the form of 2 or 3 successive days, accounting for over 90% of the total number of adverse weather events. Therefore, a 1,180m^3 effluent storage buffer tank, which is 3 times of the net daily production rate of treated effluent (i.e. 482 – 78(flushing) – 13(sludge)), is proposed to temporarily store the excessive reclaimed water. With provision of the buffer tank capable to cater for most of the successive extreme rainfall events, the frequency for tanker service can be minimized.

3.1.1.11 The production of sludge is estimated to be 13m3/d for solid content of 1% w/w. The sludge will be screened and dewatered (with a minimum solid content of 30%). Based on reference to other similar projects, the dewatered sludge will be collected by a licensed collector at regular intervals and disposed at the landfill. As an alternative to on-site dewatering of sludge, sludge could be transferred by tankers to Government's STW for off-site treatment due to its small quantity. Provided that the handling, storage and disposal of the wastes are properly managed and accidental release to the surrounding environment does not occur, adverse environmental impacts are not expected. In any case our sludge handling arrangement will be in compliance with requirements of the Water Pollution Control Ordinance (WPCO). Such approach for sludge disposal has also been adopted for some other projects, such as "Liantang / Heung Yuen Wai Boundary Control Point and Associated Works", "Redeveloped Lo Wu Correctional Institution" and "CLP Black Point Power Station".

3.2 Preventive Measures for Overflow of Raw Sewage /Treated Effluent

3.2.1.1 As "no net increase of pollution load requirement" as stipulated in the Town Planning Board Guideline (TPB PG-No. 12C), no overflow of either raw sewage or treated effluent should be allowed in the proposed STP. The following mitigation measures would be adopted in the design of STP to ensure no overflow of raw sewage / treated effluent at any times:-

Prevention of overflow of raw sewage: -

- Provision of equalization tank to store up 3 times of ADWF for a period of 4 hours;
- Dual or standby power supply;
- Standby unit for major equipment to allow for partial shut down for maintenance;
- Flow measurement and level sensors connected with alarm signalizing system will be installed to keep monitoring on inflow rate to avoid sewage overflow; and
- Raw sewage will be tanked away to public Sewage Treatment Works in case the operation of STP could not be resumed after all the above mitigation measures utilized.

Prevention of overflow of treated effluent: -

- Provision of a 1,180m^3 effluent storage tank to store excessive treated effluent in case of emergency (e.g. extreme adverse weather) or maintenance of landscape area;
- Effluent storage tank will be partitioned into several compartment to allow partial shut-down of the tank for maintenance;
- Level sensors connected with alarm signalizing system will be installed to keep monitoring on storage volume of treated effluent to avoid overflow of treated effluent. The warning signal will be automatically generated and sent to Estate Manager when the flow in the tank reached as pre-set level so as to allow the Estate Manager sufficient time (e.g. 1 day) to arrange and mobilize tanker service to tank away the excessive treated effluent with 1-day effluent storage capacity reserved as contingency; and
- Any further excessive treated effluent will be tanked away to public Sewage Treatment Works when irrigation is stopped due to continuous adverse weather or prolonged suspension of irrigation or flushing water supply systems for maintenance / repairing.

3.3 Compliance with WSD Standards of Effluent Reuse

3.3.1.1 A review of reference standards or guidelines on reuse water quality from both individual HK projects and overseas has been carried out under the EIA study of "North East New Territories New Development Areas Planning and Engineering Study - Investigation" (EIA-213/2013), and a set of reuse water quality standards has been proposed. This set of reuse water quality standards has been recommended in the "Water Supplies Department (WSD) Inter-departmental Working Group on the Implementation of Reclaimed Water Supply in Sheung Shui and Fanling" for non-portable uses, which is also comparable to international guidelines such as the USEPA Guidelines for Water Reuse (2012). The WSD reuse water quality standards and USEPA water quality standards for unrestricted urban reuse are summarised in **Table 4** below. In this regards, it is proposed to make reference to and fully adopt the WSD reuse water quality standards for the effluent quality of the proposed STP.

Table 4 – Summary of WSD Reuse Water Quality Standard and USEPA Unrestricted Urban Reuse Water Quality Standards

Water Quality Parameters	Unit	WSD Criteria*	USEPA Criteria#	
		Irrigation & Non-Portable Uses	Toilet Flushing	Irrigation
pH	--	6-9	6-9	6-9
Turbidity	NTU	≤ 5	≤ 2	≤ 2
TSS	mg/L	≤ 5	N.S.	≤ 30
BOD_5	mg/L	≤ 10	≤ 10	≤ 30
E. coli	cfu/100ml	Non-detectable	Non-detectable	≤ 200
Total Residual Chlorine (TRC)	mg/L	≥1/L (out of treatment system); ≥0.2 (at point-of-use)	≥ 1	≥ 1
Dissolved oxygen (DO)	mg/L	≥2	N.S.	N.S.
Color	Hazen Unit	≤20	N.S.	N.S.
Threshold Odour Number (TON)	TON	≤100	N.S.	N.S.
Ammonia nitrogen	mg/L	≤1	N.S.	N.S.
Synthetic detergents	mg/L	≤5	N.S.	N.S.
Note: Apart from total residual chlorine which has been specified, the water quality standards for all parameters shall be applied at the point-of-use of the system				

Remarks:-

N.S. – Not Specified;

** Standard of effluent reuse from WSD Inter-departmental Working Group on the Implementation of Reclaimed Water Supply to Sheung Shui and Fanling*

 # From Table 4-4 of USEPA (2012) Guidelines for Water Reuse

3.3.1.2 MBR is a combined system of biological treatment and microfiltration process. It is a proven technology, which is capable to generate high quality effluent in terms of low turbidity, BOD, TSS, nitrogen and bacteria. The treated effluent from MBR process will undergo ultraviolet (UV) disinfection, which will serve as second disinfection barrier to ensure the E. coli level in the effluent being reduced to non-detectable level. Followed by UV disinfection, appropriate levels of sodium hypochlorite solution (liquid chlorine) will be added to the UV-disinfected effluent so as to maintain the total residual chlorine (TRC) above 1 mg/L according to the WSD's recommended water quality standard prior to on-site effluent reuse for toilet flushing and irrigation.

3.3.1.3 MBR have been widely adopted in overseas for producing reclaimed water for non-portable uses, such as toilet flushing and landscape irrigation. In Hong Kong, there are also a number of local applications in using MBR for producing reclaimed water with water quality similar to the WSD's recommended water quality standard, such as Redeveloped Lo Wu Correctional Institution with effluent reuse for toilet flushing, Liantang/Heung Yuen Wai Boundary Control Point and Associated Works with effluent reuse for irrigation, and Stonecutters Island Sewage Treatment Works with effluent reuse for toilet flushing, make-up water, ground and facility washing. It has been confirmed by EPD that the proposed reuse of treated effluent by MBR is environmentally acceptable. In view of successful local applications of MBR, it is evident that the proposed treatment processes for the STP could meet the proposed reuse water quality standards.

3.4 Compliance with Town Planning Board Guidelines

3.4.1.1 For complying with the Zero Discharge Policy for the Deep Bay, it is necessary to demonstrate that the interim sewage disposal scheme would not pose a net increase in pollution loads to the Deep Bay WCZ, in accordance with the Town Planning Board (TPB) Guidelines, i.e. TPB PG-No.12C.

3.4.1.2 Since all sewage generated from this development will be fully reused on-site, the proposed development will not cause any net increase in pollution flow and load to the Deep Bay area. In this regards, compliance with Town Planning Board guideline will be fulfilled.

3.5 Operation and Maintenance of Interim Sewage Treatment Plant

3.5.1.1 Proper operation and maintenance of interim sewage treatment plant is essential to safeguard the quality of treated effluent for reuse, subject to the following aspects:

a. A team of competent technicians will be assigned to operate the STP. They are to be fully conversant with the operating procedures as stipulated in the operation and maintenance manuals.

b. The STP is to be kept in a tidy state. This includes regular hosing down, scraping of the walkways, whitewashing the walls, cleaning and painting the metalwork and maintaining adequate lighting and ventilation.

c. Adequate spare parts for the plant will have to be made readily available by storage.

d. Qualified personnel will be hired to inspect and maintain the plant on a regular basis.

e. Where parts of the STP are sited beneath ground, forced ventilation will be provided.

f. An easily accessible sampling point will be provided for taking samples of the treated effluent.

g. Samples of treated effluent will be taken regularly and tested to ensure compliance with reuse criteria.

h. The production of sludge is estimated to be $13m^3/d$ (also described in Section 3.1.1.10 above). All the sludge will be dewatered and disposed at landfill or alternatively transported from the Interim STP to Public STW for off-site treatment and disposal.

3.5.1.2 Preventive Measures for Cross Contamination and Mis-use of Reclaimed Water:

With reference to the recommendations in the approved EIA report of "North East New Territories New Development Areas Planning and Engineering Study - Investigation", the following preventive measures would be adopted for prevention of cross contamination between reclaimed water and freshwater supplied from WSD, and misuse of reclaimed water for portable use:-

Engineering Measures:

- Water to be supplied for portable use, toilet flushing and irrigation should be stored in three different tanks in different colors and clearly labeled;
- All pipes and fittings used for the reclaimed water supply and associated distribution system should be purple in color (exact color code to be reviewed) for distinguishing them from the pipes and fittings used for the fresh water supply and its distribution systems;
- Regular checking/inspections of the reclaimed water supply and associated distribution systems should be carried out to identify any possible cross connection to the fresh water supply and distribution system. Non-toxic dye may be adopted in the checking/inspections;
- Non-return valves should be installed on both the inlet pipes feed from effluent storage tank and WSD's supply mains, to the toilet flushing and irrigation waters storage tanks; and
- All precaution measures should be clearly stated in the O&M manual of the STP, toilet flushing and irrigation systems.

Management Measures:

- Warning plate with sign and letter "NOT FOR PORTABLE USE 不能飲用" would be shown on the toilet flushing and irrigation water storage tanks, and tagged on all accessible water taps supplying reclaimed water if any within the developments, notifying the staff, visitors and the public at large that treated effluent is being used and is not suitable for drinking;
- All water taps of reclaimed water at communal areas if any should be locked in order to avoid mis-use of reclaimed water for other non-planned use;
- Requirements of Fire Services Department (FSD) for bulk storage of sodium hypochlorite solution (liquid chlorine) or chlorine gas cylinders for STP operation shall be properly observed under the Dangerous Goods Ordinance (Cap. 295) to prevent potential hazard to life.
- Proper signage, promotion and training workshops will be provided periodically to all management and operation staffs of the Development, as well as future land owners on the proper use of reclaimed water and portable water; and
- All precaution measures should be clearly stated in the management manual of the Development.

3.5.1.3 Preventive Measures for Excessive Irrigation:

A preset semi-automatic control irrigation system would be adopted with provision of underground drip pipes (about 200mm below soil level) to prevent irrigation water entering into surface drains. The irrigation system should only be operated by designated landscape maintenance team, following the procedures as stated in the O&M manual.

4. CONCLUSIONS

4.1.1.1 The proposed WSW development is located by the side of Castle Peak Road and San Tin Highways, with fish ponds to the north and village development to the east.There is no existing public sewerage system in the vicinity to the WSW Development.

4.1.1.2 As stipulated in the Environmental Permit (EP) No. EP-311/2008/C Condition 5.13, "the residential units shall be occupied only after sewage can be discharged to government sewerage network". The wastewater flow generated from the WSW Development (i.e. 482m^3/d) is to be discharged to the Ngau Tam Mei trunk sewer which subsequently conveyed to YLSTW for treatment and disposal. The Ngau Tam Mei trunk sewer is currently planned under PWP Item No. 4235DS for Yuen Long and Kam Tin Sewerage and Sewage Disposal.

4.1.1.3 The sewerage system within the WSW Development area will be designed to facilitate the future connection to the government sewerage system at Castle Peak Road. The proposed sewerage system for the WSW Development will be connected to Ngau Tam Mei sewerage system as permanent measure. It has been proved that the public sewer and YLSTW have sufficient capacity to cater for the additional flow and load from the WSW Development.

4.1.1.4 However, the proposed Ngau Tam Mei trunk sewerage might not be available in near future, it is necessary to consider the provision of an on-site STP as an interim measure to handle the sewage. The treated effluent will be treated by the on-site sewage treatment plant and fully reused on site. The on-site sewage treatment plant will be commissioned prior to the occupation of Phase 1 development, and will be decommissioned when the trunk sewer becomes available for connection. The wastewater flow generated from the WSW Development of 482m^3/d will be ultimately discharged to the Ngau Tam Mei trunk sewer when it is constructed.

4.1.1.5 The on-site sewage treatment facility with the enhanced tertiary treatment process of MBR with UV disinfection system will treat the 482m^3/day sewage from the development to achieve effluent quality to meet the standard for on-site effluent reuse for toilet flushing and irrigation for landscape areas within the Development. Since all sewage generated from this development will be fully reused on-site, the proposed development will not cause any net increase in pollution flow and load to the Deep Bay area. In this regards, compliance with Town Planning Board guideline will be fulfilled.

4.1.1.6 Adverse short-term and long-term environmental impacts in respect of water quality, health and safety arising from both the long term and interim sewerage scheme are not anticipated. No adverse sewerage impact will be incurred as a result of occupation of the WSW Development.

FIGURES

820000 E
822000 E
824000 E
826000 E
840000 N
838000 N
836000 N
N
SHEN ZHEN SPECIAL ECONOMIC ZONE
SHEN ZHEN RIVER
DEEP BAY
(SHENZHEN WAN)
MAI PO
SAN TIN
MAI PO TRIBUTARY
SAN TIN HIGHWAY
MAI PO NATURE RESERVE
(RESTRICTED AREA)
PROPOSED DEVELOPMENT
PHASE 2
PHASE 1
KAM TIN AND YUEN LONG
DRAINAGE CHANNELS
TAI SANG WAI
NAM SANG WAI
KAM TIN RIVER
SHAN PUI RIVER

LEGEND:

PROPOSED DEVELOPMENT

AECOM

PROPOSED COMPREHENSIVE DEVELOPMENT IN WO SHANG WAI

LOCATION PLAN OF PROPOSED DEVELOPMENT

SCALE	A3 1 : 25000	DATE	NOV. 2012
CHECK	–	DRAWN	GHX
JOB No.	60097289	DRAWING No.	FIGURE 1
		REV	–

Q:\PROJECT\60097289\DRAWING\REPORT\SIA\FIGURE 1.dwg 21/11/2012 10:24 WANGDF

821700 E

824600 E

826500 E

837700 N

835300 N

MAI PO

MAI PO SAN TSUEN

TAI LONG KEI

大欖涌

MAI PO NATURE RESERVE (RESTRICTED AREA)

米埔自然保護區(禁區)

PROPOSED DEVELOPMENT SITE
POPULATION=1071
ADWF=0.00483m³/s

UPSTREAM
POPULATION=12828
ADWF=0.0328m³/s

Ø525

PALM SPRINGS

ROYAL PALMS

MAPLE GARDENS

PLANNED NGAU TAM MEI TRUNK SEWER
UNDER PWP ITEM NO. 4235DS

INFLOW TO NGAU TAM MEI
SEWAGE PUMPING STATION
POPULATION=40903
ADWF=0.1138m³/s

Ø525

Ø825

FAIRVIEW PARK

RM

RM

RM

LUT CHAU

PLANNED NGAU TAM MEI SEWAGE
PUMPING STATION, ASSOCIATED
SEWER AND RISING MAIN UNDER
PWP ITEM NO. 4235DS

EXISTING NAM SANG WAI
SEWAGE PUMPING STATION
AND ASSOCIATED
EXISTING KAM TIN RISING MAINS
UNDER PWP ITEM NO.4215DS

NGAU TAM MEI

TAI SANG WAI

KAM TIN RIVER

RM

RM

RM

RM

RM

Ø900

YUEN LONG SEWAGE
TREATMENT WORKS

KAM SANG WAI

N

LEGEND:

- PROPOSED DEVELOPMENT
- PROPOSED DEVELOPMENT BOUNDARY
- PLANNED GRAVITY SEWER
- RM PLANNED RISING MAINS
- EXISTING GRAVITY SEWER
- RM EXISTING RISING MAINS
- YUEN LONG SEWAGE TREATMENT WORKS
- PLANNED PUMPING STATION

AECOM

PROPOSED COMPREHENSIVE DEVELOPMENT IN WO SHANG WAI

SEWERAGE IMPACT ASSESSMENT – PROPOSED NGAU TAM MEI TRUNK SEWERAGE (KEY PLAN)

SCALE	A3 1 : 20000	DATE	NOV. 2012
CHECK	–	DRAWN	GHX
JOB No.	60097289	DRAWING No.	FIGURE 2
		REV	–

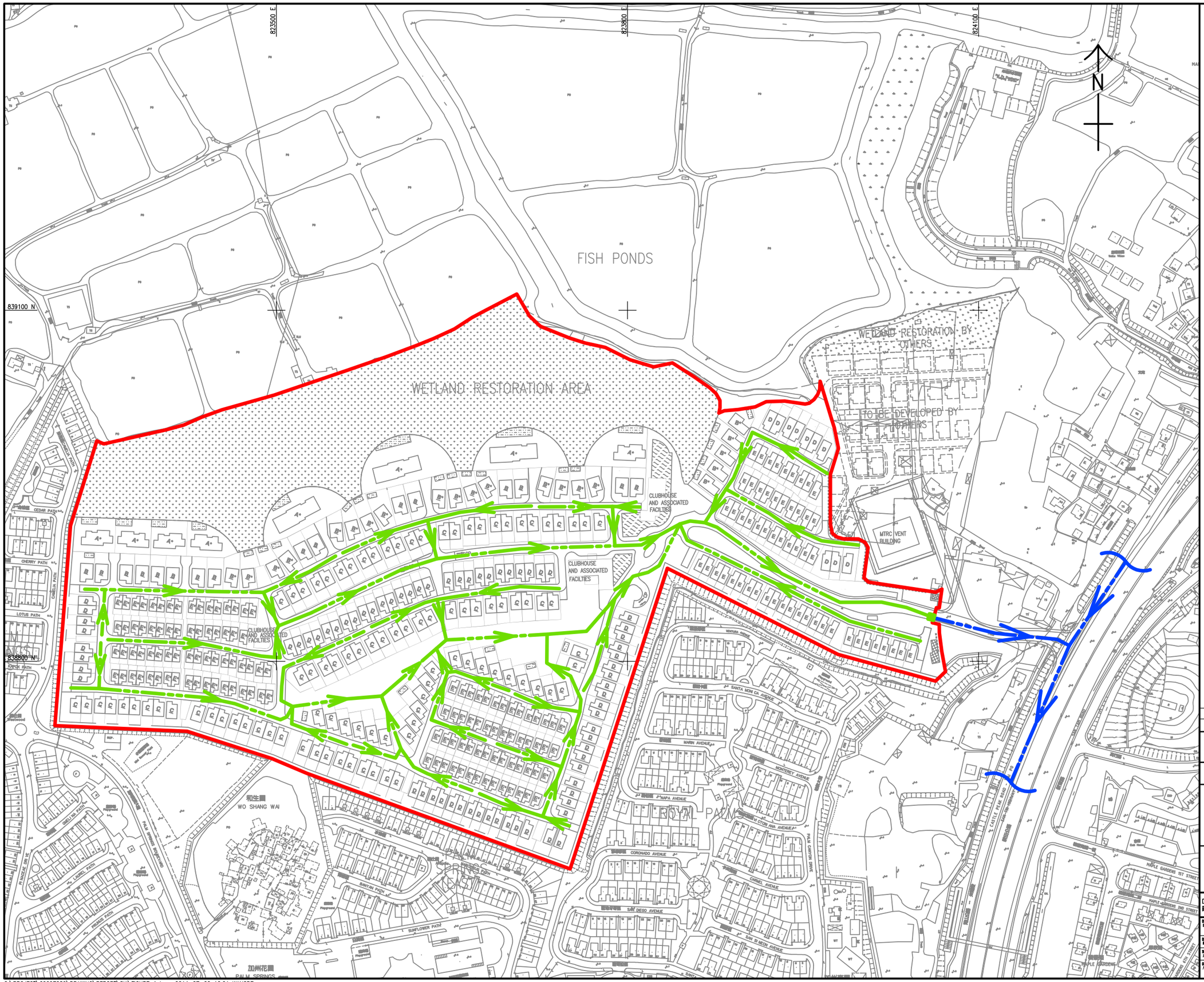
Q:\PROJECT\60097289\DRAWING\REPORT\SIA\FIGURE 2.dwg 02/11/2012 10:01 WANGDF

PROPOSED COMPREHENSIVE DEVELOPMENT IN WO SHANG WAI

SEWERAGE IMPACT ASSESSMENT – PROPOSED NGAU TAM MEI TRUNK SEWERAGE

SCALE	A3 1 : 2000	DATE	NOV. 2012
CHECK	–	DRAWN	GHX
JOB No.	60097289	DRAWING No.	FIGURE 3
		REV	–

Q:\PROJECT\60097289\DRAWING\REPORT\SIA\FIGURE 3.dwg 02/11/2012 10:02 WANGDF



LEGEND:

- SITE BOUNDARY
- PUBLIC FOUL SEWERAGE SYSTEM
- PROPOSED FOUL SEWERAGE

REV. 修訂	DESCRIPTION 內容摘要	DR. 繪	P.E. 核	DATE 日期
–	BD SUBMISSION	YWF	JYCH	OCT.11

PROFIT POINT ENTERPRISE LIMITED

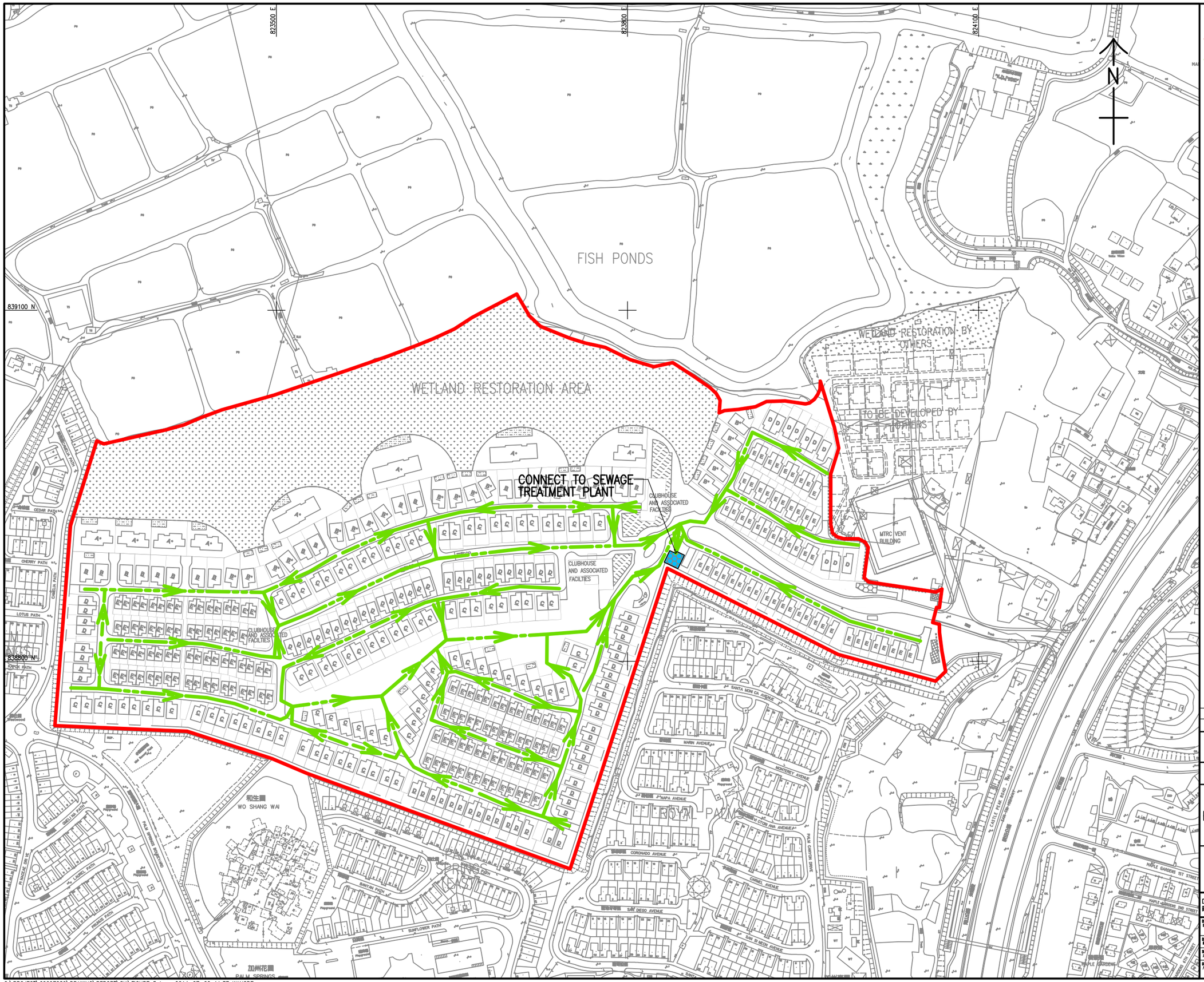
PROPOSED COMPREHENSIVE DEVELOPMENT AT WO SHANG WAI, YUEN LONG

LAYOUT PLAN OF PRELIMINARILY DESIGNED PERMANENT SEWERAGE SYSTEM

AECOM

DRG.NO. 圖紙編號: FIGURE 4

DESIGNED BY 設計: –	CONTRACT NO. 合約編號:	P. In. APPROVED 批准人
DRAWN BY 繪圖: WDF	STATUS 階段:	
SCALE 比例: A1 1 : 1500		
DIMENSIONS ARE IN 尺寸單位: METER		



LEGEND:

- SITE BOUNDARY
- PROPOSED FOUL SEWERAGE
- INTERIM SEWAGE TREATMENT PLANT

REV. 修訂	DESCRIPTION 內容摘要	DR. 繪	CHECKED 核	DATE 日期
–	BD SUBMISSION	YWF	JYCH	OCT.11

PROFIT POINT ENTERPRISE LIMITED

PROPOSED COMPREHENSIVE DEVELOPMENT AT WO SHANG WAI, YUEN LONG

LAYOUT PLAN OF PRELIMINARILY DESIGNED INTERIM SEWERAGE SYSTEM

AECOM

DRG.NO. 圖紙編號 FIGURE 5

DESIGNED BY 設計	CONTRACT NO. 合約編號	P. Dir. APPROVED 批准人
–		
DRAWN BY 繪圖 WDF	STATUS 階段	
SCALE 比例 A1 1 : 1500		
DIMENSIONS ARE IN 尺寸單位 METER	© COPYRIGHT RESERVED 版權所有	

O:\PROJECT\60097289\DRAWING\REPORT\SIA\FIGURE 5.dwg 2014-07-02 11:37 WANGDF

LEGEND:

SEWAGE FLOW

SLUDGE/SCREENING/GRIT FLOW

AIR FLOW

NaOCL STORAGE TANK

STORAGE TANK FOR WATER REUSE

IRRIGATION (WATER DEMAND=404m³/d)

FLUSHING (WATER DEMAND=78m³/d)

UV DISINFECTION

NaOCl & CRITIC ACID

AIR BLOWER

MBR PERMEATE PUMP

SKIPS

TO LANDFILL

SCREENING

OVERFLOW TO EMERGENCY STORAGE TANK

RAW SEWAGE FROM DEVELOPMENT AREA (ADWF=482m³/d)

COARSE SCREEN

EQUALIZATION TANK

INLET PUMP

FINE SCREEN

SCREENING

SKIPS

TO LANDFILL

AEROBIC/MEMBRANE TANK

ANOXIC TANK

MEMBRANE UNIT

ACTIVATED SLUDGE RECIRCULATION BY GRAVITY

WASTE SLUDGE PUMP

MEMBRANE BIOREACTOR SYSTEM (MBR)

OR

MEMBRANE FILTER PRESS

DEWATERED SLUDGE TO LANDFILL

SLUDGE HOLDING TANK

WASTE SLUDGE TO PUBLIC STW

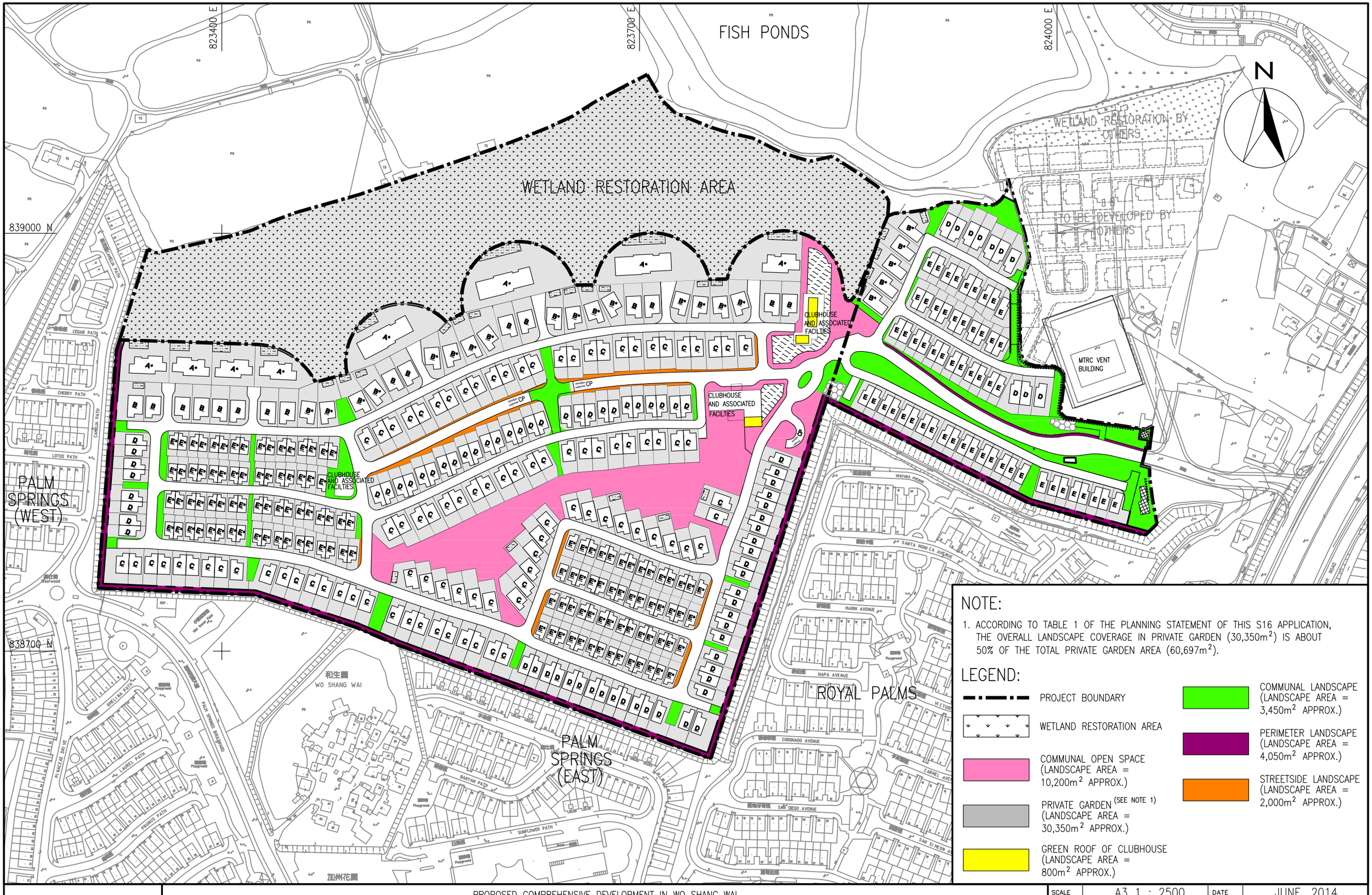
AECOM

PROPOSED COMPREHENSIVE DEVELOPMENT IN WO SHANG WAI

PROPOSED PROCESS FLOW DIAGRAM OF INTERIM ON-SITE SEWAGE TREATMENT PLANT

SCALE	N.T.S.	DATE	OCT. 2014
CHECK	—	DRAWN	WDF
JOB No.	60097289	DRAWING No.	FIGURE 6
		REV	-

Q:\PROJECT\60097289\DRAWING\REPORT\SIA\FIGURE 6.dwg 17/10/2014 15:02 WANGDF



NOTE:

1. ACCORDING TO TABLE 1 OF THE PLANNING STATEMENT OF THIS S16 APPLICATION, THE OVERALL LANDSCAPE COVERAGE IN PRIVATE GARDEN (30,350m^2) IS ABOUT 50% OF THE TOTAL PRIVATE GARDEN AREA (60,697m^2).

LEGEND:

- PROJECT BOUNDARY
- WETLAND RESTORATION AREA
- COMMUNAL OPEN SPACE (LANDSCAPE AREA = 10,200m^2 APPROX.)
- PRIVATE GARDEN (SEE NOTE 1) (LANDSCAPE AREA = 30,350m^2 APPROX.)
- GREEN ROOF OF CLUBHOUSE (LANDSCAPE AREA = 800m^2 APPROX.)
- COMMUNAL LANDSCAPE (LANDSCAPE AREA = 3,450m^2 APPROX.)
- PERIMETER LANDSCAPE (LANDSCAPE AREA = 4,050m^2 APPROX.)
- STREETSIDE LANDSCAPE (LANDSCAPE AREA = 2,000m^2 APPROX.)

AECOM

PROPOSED COMPREHENSIVE DEVELOPMENT IN WO SHANG WAI

LAYOUT PLAN OF LANDSCAPE AREA (WITH EFFLUENT REUSE FOR IRRIGATION)

SCALE	A3 1 : 2500	DATE	JUNE. 2014
CHECK	–	DRAWN	WDF
JOB No.	60097289	DRAWING No.	FIGURE 7
		REV	–

Q:\PROJECT\60097289\DRAWING\REPORT\SIA\FIGURE 7.dwg 02/12/2014 13:40 WANGDF

ANNEX A

RNTPC Paper No. A/YL-MP/229C

RNTPC Paper No. A/YL-MP/229C
For Consideration by
the Rural and New Town
Planning Committee
on 27.2.2015

APPLICATION FOR PERMISSION
UNDER SECTION 16 OF THE TOWN PLANNING ORDINANCE

APPLICATION NO. A/YL-MP/229

Applicant : Profit Point Enterprises Limited represented by Masterplan Limited

Site : Lots 43 S.A RP, 50 S.A and 50 RP in D.D. 101, Wo Shang Wai, Mai Po, Yuen Long

Site Area : 207,408m² (about)

Lease : Block Government Lease (demised for agricultural use)

Plan : Approved Mai Po and Fairview Park Outline Zoning Plan (OZP) No. S/YL-MP/6

Zoning : "Other Specified Uses" annotated "Comprehensive Development to include Wetland Restoration Area" ("OU(CDWRA)")

[restricted to a maximum plot ratio of 0.4 and a maximum building height of 6 storeys including car park. Minor relaxation of the stated restrictions, based on the merits of individual development or redevelopment proposals, may be considered by the Town Planning Board on application under section 16 of the Town Planning Ordinance.]

Application : Proposed Comprehensive House and Wetland Habitat Development with Filling and Excavation of Land

1. Proposal

1.1 The applicant seeks planning permission for a proposed comprehensive house and wetland habitat development with a plot ratio of 0.4 and a building height of 2 to 3 storeys (i.e. 7.8m to 11.3m (15.6mPD to 19.1mPD)) over 1 common basement floor car park, and wetland habitat at the application site (the site) **(Plans A-1 to A-3)**. The proposed development also involves filling and excavation of land for site formation.

1.2 The site falls within an area zoned "OU(CDWRA)" on the approved Mai Po and Fairview Park OZP. According to the Notes for "OU(CDWRA)" zone on the OZP, 'House', 'Wetland Habitat' and filling and excavation of land require planning

permission from the Town Planning Board (the Board).

1.3 The site is the subject of 2 previously approved Applications No. A/YL-MP/166 and 185 submitted by the current applicant for the same uses. Both applications were approved with conditions by the Rural and New Town Planning Committee (the Committee) of the Board on 19.9.2008 and 21.10.2011 respectively. Application No. A/YL-MP/185-1 for minor amendments to the approved scheme was approved by the Director of Planning under the delegation of the Board on 19.7.2012. The approved schemes under Applications No. A/YL-MP/185 and 185-1 are both valid until 21.10.2015. The construction works for the wetland habitat at the wetland restoration area (WRA) under the approved scheme of Application No. A/YL-MP/185 has been completed while site formation works for the residential portion is being carried out (site photos on **Plans A-4a** and **A-4b**).

1.4 A comparison of the major development parameters of the previously approved scheme under Application No. A/YL-MP/185 and the proposed scheme under current application are listed as follows **(Drawing A-1)**:

Major Development Parameters	Previously Approved Application (No. A/YL-MP/185) (a)	Current Application Scheme (No. A/YL-MP/229) (b)	Difference (b) - (a)
Gross Site Area (m^2)	207,408 (about)	207,408 (about)	0
Residential Area (m^2)	160,008 (77.15%)	160,008 (77.15%)	0
WRA (m^2)	47,400 (22.85%)	47,400 (22.85%)	0
Plot Ratio (PR)			
Gross site	0.4	0.4	0
Net site (excluding WRA)	0.52	0.52	0
Maximum Domestic Gross Floor Area (GFA) (m^2)	82,963.2	82,963.2	0
Site Coverage (%)	25	25	0
Number of Houses/ Storeys and Building Height	344 -315 houses with 2-storey above ground (15.6mPD) -29 houses with 3-storey above ground (19.1mPD)	400 -248 house with 2-storey above ground (15.6mPD) -152 houses with 3-storey above ground (19.1mPD)	+56 (+16.3%)
Average House Size (m^2)	241.17	207.4	-33.77 (-14%)
Clubhouse Floor Area (m^2)	4,148 (5% of domestic GFA)	3,000 (3.6% of domestic GFA)	-1,148 (-27.7%)
Clubhouse Building Height	2 storeys without basement (13.1m high)	3 storeys (including basement)(17mPD)	+1
Communal Open Space Area (m^2)	11,616	13,066	+1,450 (+12.5%)
Communal and Streetside Landscape/Waterbody	9,022	10,956	+1,934 (+21.4%)
Private Garden (m^2)	57,694	60,697	+3,003 (+5.2%)
No. of Car Parking Spaces:	736	835	+99 (+13.5%)
Residents	731	829	
Visitor	5 (including 1 for the disabled)	6 (including 1 for the disabled)	
No. of Motorcycle Parking Spaces	37	42	+5 (+13.5%)
Loading/Unloading Bay	1	1	0

Major Development Parameters	Previously Approved Application (No. A/YL-MP/185) (a)	Current Application Scheme (No. A/YL-MP/229) (b)	Difference (b) - (a)
Mean Site Formation Level	6.3mPD	6.8mPD	+0.5m (+8%)
Sewage Treatment Plant	Nil	1	Newly proposed

1.5 In the previously approved scheme of Application No. A/YL-MP/185, sewage generated from the proposed development would be discharged to the planned Ngau Tam Mei Trunk Sewerage. In view of the uncertain development programme of the planned Ngau Tam Mei Trunk Sewerage, the applicant now proposes to provide a temporary on-site sewage treatment plant (STP) at the southeast part of the site **(Drawing A-3)** as an interim mitigation measure in order to meet the anticipated completion date of the development by 2017. The treated effluent from the STP will be reused for toilet flushing and landscape irrigation within the site **(Drawing A-4)** in order to meet the requirement of no net increase in pollution load to the Deep Bay. Furthermore, an effluent storage buffer tank will be provided on site to temporarily store any excessive treated effluent. Any further excessive treated effluent will be tanked away to the public sewage treatment works to prevent overflow of treated effluent.

1.6 According to the applicant, the Deed Mutual Covenant (DMC) will stipulate the minimum requirement of 50,850m^2 landscape area (including the communal landscape areas and private gardens) adopting treated effluent for irrigation **(Drawing A-4)**. Any modification or removal of private garden by the future house owners should obtain prior approval from the DMC Manager. In addition, a pre-set semi-automatic irrigation system with underground pipes would be installed in the private gardens and will be managed by the DMC Manager to ensure that the treated effluent could be fully used up for irrigation. Upon the availability of the public sewerage system, the temporary STP will be decommissioned and a permanent sewerage pipe connection to the Ngau Tam Mei Trunk Sewerage will be provided.

1.7 Apart from the STP stated in paragraph 1.5 above, the current application has the following proposed amendments to the previously approved scheme:

(a) increase in number of houses from 344 to 400 and decrease in the average house size from 241.17m^2 to 207.4m^2;

(b) increase in the communal open space area from 11,616m^2 to 13,066m^2, communal landscape from 9,022m^2 to 10,956m^2, private garden from 57,694m^2 to 60,697m^2;

(c) increase in mean site formation level from 6.3mPD to 6.8mPD. The applicant explains that the design of the site formation has taken into account the flood prevention measure and the drainage provision;

(d) increase in number of car parking spaces from 736 to 835 in accordance with the revised number of houses and the relevant requirements of the Hong Kong Planning Standards and Guidelines (HKPSG);

(e) reduction in the GFA of the clubhouses from 4,148m^2 to 3,000m^2. Addition of the third clubhouse at the western part of the site (**Drawing A-1**);

(f) extension of the basement access road system and common basement car park from the central part of the development under the approved scheme to cover the southern part of the development (**Drawing A-7**);

(g) reduction in height on part of the noise barrier at the entrance from 6m to 5.5m (**Drawing A-5**); and

(h) replacement of a series of sporadic and broken open spaces to a central open space design (**Drawing A-2**).

1.8 To address the long-term maintenance and management of the WRA, the applicant has proposed to follow the previously agreed arrangements under Application No. A/YL-MP/185 for an upfront lump sum donation to the Environment and Conservation Fund (ECF), and confirmed that the land exchange and/or lease modification for the proposed development shall not be executed prior to the compliance with the approval condition in relation to submission and implementation of the funding arrangement with the ECF (**Appendix Ih**).

1.9 The application was first received on 14.11.2013. Upon the requests of the applicant, the Committee agreed to defer a decision on the application for three times on 9.5.2014, 22.8.2014 and 12.12.2014 respectively. On 11.12.2013, 6.1.2014, 14.1.2014, 13.2.2014, 17.3.2014, 20.3.2014, 10.4.2014, 4.7.2014 and 20.10.2014, 3.12.2014 and 12.1.2015, the applicant submitted further information to support the application.

1.10 In support of the application, the applicant has submitted the following documents:

(a) Application Form received on 14.11.2013 **(Appendix I)**

(b) Supplementary Planning Statement including a Master Layout Plan (MLP), Diagrammatic schematic sections, Landscape Master Plan (LMP), Landscape and Visual Impact Assessment (LVIA), Environmental Assessment (EA), Sewerage Impact Assessment (SIA), Drainage Impact Assessment (DIA), Traffic Impact Assessment (TIA) **(Appendix Ia)**

(c) Letter dated 13.11.2013 providing supplementary information **(Appendix Ib)**

(d) Letter dated 21.11.2013 providing supplementary information *((a) to (d) published on 22.11.2013)* **(Appendix Ic)**

(e) Letter dated 11.12.2013 providing responses to departmental comments and Ecological Impact Assessment (EcoIA) *(published on 20.12.2013)* **(Appendix Id)**

(f) Letter dated 2.1.2014 providing responses to departmental comments and revised DIA **(Appendix Ie)**

(g) Letter dated 14.1.2014 providing responses to departmental comments and revised EcoIA *((f) and (g) published on 24.1.2014)* **(Appendix If)**

(h) Letter dated 13.2.2014 providing a Wetland Restoration and Creation Scheme (WRCS) *(published on 21.2.2014)* **(Appendix Ig)**

(i) Letters dated 17.3.2014 and 20.3.2014 providing a funding and long-term management proposal of the WRA, and responses to departmental comments *(published on 4.4.2014)* **(Appendix Ih)**

(j) Letter dated 10.4.2014 providing responses to departmental comments **(Appendix Ii)**

(k) Letter dated 4.7.2014 providing responses to departmental comments and revised SIA *(published on 18.7.2014)* **(Appendix Ij)**

(l) Letter dated 20.10.2014 providing responses to departmental comments and revised SIA *(published on 7.11.2014)* **(Appendix Ik)**

(m) Letter dated 3.12.2014 providing responses to departmental comments **(Appendix Il)**

(n) Letter dated 12.1.2015 providing responses to departmental comments **(Appendix Im)**

2. Justifications from the Applicant

The justifications put forth by the applicant in support of the application are detailed in the Planning Statements at **Appendix Ia,** and further information at (**Appendices Id** to **Im**). They can be summarised as follows: -

(a) The proposed residential development under the current scheme is roughly the same as the previously approved scheme under Application No. A/YL-MP/185, and is in line with the planning intention of the "OU(CDWRA)" zone. It will not have any adverse impact on the restored wetlands at the site or the adjoining fishponds. The increased housing production from the proposed residential development is consistent with the Chief Executive's Policy Address 2013 advocating for increased housing supply.

(b) The site falls within the Wetland Buffer Area (WBA) under the Town Planning Board Guidelines for Application for Developments within Deep Bay Area under Section 16 of the Town Planning Ordinance (TPB PG-No. 12C). The proposed residential development at the site is in line with the TPB PG-No. 12C.

(c) The provision of the public sewer by Government is uncertain. The proposed interim on-site STP is a practical solution and positive measure to ensure timely housing provision at the site, while complying with the requirement on "no net increase on pollution load" to the Deep Bay. Once the public sewer is available and connected to the development, the interim STP would be decommissioned.

(d) The proposed residential development under previously approved Application No. A/YL-MP/185 is a designated project under the Environmental Impact Assessment Ordinance (EIAO). An EIA report was approved in July 2008, an Environmental Permit (EP) No. EP-311/2008 was issued in September 2009 and subsequent Variations to the EP were issued in March 2013. A condition of the EP requires that the residential units shall be occupied only after the sewage from the development can be discharged to the Government sewerage network. The applicant will apply to the Director of Environmental Protection (DEP) for

approval on variation to the approved EIA report under the EIAO.

(e) The current scheme has provided a more efficient road system. The basement carpark is extended and vehicular movements above ground are reduced. The buildings and internal roads have been re-arranged to minimise the frontage addressing the secondary roads. The central open space and the clubhouse buildings will be served by the secondary roads envisaged for shared vehicular/pedestrian movements fostering traffic safety.

(f) To improve the interface and privacy with the neighbouring developments, a further building setback for the 2-storey houses along the southern boundary of the site is proposed.

(g) The proposed residential development will not have adverse traffic, visual and environmental impacts to the surrounding areas.

3. Compliance with the "Owner's Consent/Notification" Requirements

The applicant is the sole "current land owner". Detailed information would be deposited at the meeting for Members' reference.

4. Town Planning Board Guidelines

According to the Town Planning Board Guidelines for Application for Developments within Deep Bay Area under Section 16 of the Town Planning Ordinance (TPB PG-No. 12C), the site falls within the WBA. The relevant assessment criteria are summarized as follows:

(a) the intention of the WBA is to protect the ecological integrity of the fish ponds and wetland within the WCA and prevent development that would have a negative off-site disturbance impact on the ecological value of fish ponds. A buffer area of about 500m along the landward boundary of the WCA is thus designated as a WBA;

(b) within the WBA, for development or redevelopment which requires planning permission from the Board, an EcoIA would also need to be submitted. Development/redevelopment which may have negative impacts on the ecological value of the WCA would not be supported by the Board, unless the EcoIA can demonstrate that the negative impacts could be mitigated through positive measures. The assessment study should also demonstrate that the development will not cause net increase in pollution load to Deep Bay; and

(c) proposals for residential/recreational developments on degraded sites to remove/replace existing open storage or container back-up uses and/or to restore lost wetlands may be given sympathetic consideration by the Board subject to satisfactory ecological and other impact assessments. Residential developments should be compatible with the surrounding land uses and the rural setting of the area. Consideration should also be given to the compatibility of recreational use with any adjoining fish pond area and to other planning and environmental implications of the development.

5. Background

The site is not the subject of any active planning enforcement action.

6. Previous Applications (Plan A-1)

6.1 The site is the subject of two previous applications (No. A/YL-MP/166 and 185) submitted by the current applicant for residential development with WRA. Both were approved with conditions by the Committee.

6.2 Application No. A/YL-MP/166 for the same use with a plot ratio of 0.4 and a maximum building height of 13.1m above ground was approved with conditions by the Committee on 19.9.2008. The planning permission lapsed on 19.9.2012.

6.3 Application No. A/YL-MP/185 for the same use with the same plot ratio of 0.4 and the same maximum building height of 13.1m above ground was approved with conditions by the Committee on 21.10.2011. The application was approved on the grounds that it mainly involved amendments to the previously approved scheme Application No. A/YL-MP/166 which included the reduction of the site area/ adjustment to the lot boundary, reduction of domestic GFA/ number of units; amendments to the design of the residential blocks/ general layout of the residential part of the proposed development. The WRA under the approved scheme Application No. A/YL-MP/166 had already been implemented to the satisfaction of the Director of Agriculture, Fisheries and Conservation (DAFC). The proposed development would not worsen the previous approved scheme. The proposed development was in line with the TPB PG-No. 12B regarding the requirements on Ecological Impact Assessment (EcoIA) submission, no net increase in pollution load to Deep Bay, and provision of ecological and visual buffer to the WCA. Besides, concerned departments had no adverse comments on the application. Application No. A/YL-MP/185-1 relating to minor change in disposition of houses, addition of an electrical and mechanical building, and addition of a basement floor to the two clubhouses, was approved with conditions by the Director of Planning under the delegated authority of the Board on 19.7.2012. For the compliance of approval conditions, the applicant has submitted a revised LMP which has been considered generally acceptable to concerned department. The approved schemes under Applications No. A/YL-MP/185 and 185-1 are both valid until 21.10.2015.

7. Similar Application

There is no similar application within the same "OU(CDWRA)" zone.

8. The Site and Its Surrounding Areas (Plans A-1 to A-4)

8.1 The site:

(a) falls within the WBA of Deep Bay;

(b) is accessible via an access road off Castle Peak Road – Mai Po section leading to San Tin Highway; and

(c) is under construction. Construction works for the WRA in the northern part of the site have been completed. Site formation works for the residential development in the remaining part of the site are in progress.

8.2 The surrounding areas have the following characteristics:

(a) to the north and northwest are contiguous fish ponds extending all the way to the Mai Po Nature Reserve (MPNR) under "Conservation Area" ("CA") zone;

(b) to the northeast is the remaining portion of the subject "OU(CDWRA)" zone. A ventilation building for the Guangzhou- Shenzhen-Hong Kong Express Rail Link (XRL) is being constructed; to the further northeast are the village settlements of Mai Po San Tsuen and Mai Po Lo Wai within "V" zone;

(c) to the east are the Castle Peak Road - Mai Po section, San Tin Highway and the proposed cycle track under Project No. 7259RS 'Cycle Tracks Connecting North West New Territories with North East New Territories'; to the further east across San Tin Highway are a mix of uses including the residential development of Maple Gardens and unused land; and

(d) to the immediate south are the residential developments of Palm Springs, Royal Palms and Wo Shang Wai within "Residential (Group C)" ("R(C)") zone.

9. Planning Intention

9.1 The "OU(CDWRA)" zone is intended to provide incentive for the restoration of degraded wetlands adjoining existing fish ponds through comprehensive residential and/or recreational development to include WRA. It is also intended to phase out existing sporadic open storage and port back-up uses on degraded wetlands. Any new building should be located farthest away from Deep Bay.

9.2 To ensure that development and/or redevelopment would be developed in a comprehensive manner, an applicant should submit to the Board a development and/or redevelopment proposal in the form of a comprehensive development scheme to include a layout plan with supporting documents, including an environmental impact study which should include, inter alia, an EcoIA and a VIA; and traffic, drainage and sewerage impacts assessments as well as information on programming, phasing and implementation schedule of the development. The applicant should also submit a wetland restoration and/or creation scheme, including its detailed design, wetland buffer proposals to mitigate the potential impact on the nearby existing wetland, a maintenance and management plan with implementation details, arrangement of funding and monitoring programme to ensure the long-term management of the restored wetland. The EcoIA should demonstrate that any negative ecological impacts on the area could be fully mitigated through positive measures. The submission should demonstrate that the development and/or redevelopment would not cause a net increase of pollution load into Deep Bay.

9.3 To be in line with the rural setting which is mainly low-rise residential developments and village houses, to minimise visual impact and to take into account the capacities of local road network and infrastructure in this area, development and/or redevelopment shall not result in a total development or redevelopment intensity in excess of a total plot ratio of 0.4 and a maximum building height of 6 storeys including car park. Minor relaxation of these restrictions may be considered to provide flexibility for innovative design adapted to the characteristics of particular sites.

10. Comments from Relevant Government Departments

10.1 The following Government departments have been consulted and their views on the application are summarised as follows:

Land Administration

10.1.1 Comments of the District Lands Officer/Yuen Long, LandsD (DLO/YL, LandsD):

(a) He has no comment on the application which involves differences in site configuration, total number of residential units and total number of car parking spaces etc. as compared to the previous approved scheme.

(b) With reference to the Figure A3 of the WRCS, the WRA boundary is modified. A proposed land exchange is being processed for the lots within the site based on the previous Application No. A/YL-MP/185. Should the Board approve the application which cause amendments to the proposed land exchange, the applicant is required to apply to LandsD for the proposed development in current scheme. However, there is no guarantee that such application (including the granting of any additional Government land (GL)) will be approved. Such application will be dealt with by his department acting in the capacity as the landlord at his discretion, and if it is approved under such discretion, the approval would be subject to terms and conditions including among others, the payment of premium and administrative fee as may be imposed by his department.

(c) The proposed storm water drain will connect to outfall beyond the site boundary. Should such drains encroach upon private land and GL, the applicant should clearly indicate the whole alignment of such storm water drain connection, in particular the one connecting the existing outfall to Mai Po Tributary, and then obtain prior approval/consent from the relevant authorities before carrying out of the works.

(d) According to the layout plan of the preliminary designed interim sewage system, there is no GL involved. However, the applicant should consult his department if there is any works to be carried out on GL, if unavoidable.

(e) He has no comment on the funding arrangement and long-term management proposal on the WRA.

(f) The details and the technical requirements of the proposed interim STP within the site should be subject to DEP and the Director of Drainage Services (D of DS)' comments.

(g) In the proposed lease conditions of the land exchange of the WRA, there is a proposed Special Condition for 'Treatment and Disposal of Sewage', which provides that "(i) the Grantee shall throughout the term hereby agreed to be granted indemnify and keep indemnified the Government against all actions, claims and demands for any loss, damage, nuisance or pollution caused by or arising out of any discharge from the lot of sewage, foul or contaminated water; and (ii) the lot is in an area where no public sewage maintained by the Government is currently available for connection and there is no guarantee that sewage connection would be provided in the near future". This is not quite the same as the applicant's understanding as submitted on 12.1.2015.

10.1.2 Comments of Chief Estate Surveyor/Railway Development, Lands Department (CES/RD, LandsD):

(a) He has no comment on the long-term use of the site from railway development point of view.

(b) Part of Lot 43 s.A RP in D.D. 101 falls within the temporary occupation area (TOA) created under Railways Ordinance for XRL project with expiry date of the temporary occupation period on 31.12.2013, 31.7.2014, 31.10.2014 and 31.12.2015 respectively. The TOA area will be handed back to the owner of the affected lot after completion of XRL. He trusts Railway Development Office (RDO), HyD, will offer their comments from the construction point of view of the XRL project.
[See comment of RDO, HyD in paragraph 10.1.6 below.]

Conservation

10.1.3 Comments of the Director of Agriculture, Fisheries and Conservation (DAFC):

(a) According to the revised EcoIA, it is concluded that with implementation of the mitigation measures identified, no additional ecological impact is predicted to be resulted from the current scheme as compared to the approved scheme under Application No. A/YL-MP/185. In this regard, he has no adverse comment on the application from ecological perspective.

(b) It is understood that the applicant is committed to follow the Public-Private Partnership (PPP) scheme under the New Nature Conservation Policy for ensuring the long-term maintenance and management of the WRA.

(c) Subject to DEP's policy view on the applicant's long-term arrangement proposal for the WRA, he considers that previous

approval conditions (f) to (i) should also be applied to the current application if it is approved by the Board. These conditions are related to the implementation of the mitigation measures identified in the revised EcoIA, the submission and implementation of a maintenance and management plan, the submission and implementation of the funding arrangement proposal, and execution of land exchange and/or lease modification after the funding arrangement has been implemented to the satisfaction of DEP and DAFC.

(d) The public concerns on ecological impact are mainly on potential disturbance and water pollution impacts on the WRA and nearby fishponds/wetlands in WCA. The issues have been addressed in the EcoIA.

Environment

10.1.4 Comments of the DEP:

(a) The revised SIA report proposed to fully reuse the treated sewage effluent ($482m^3$/day) from the on-site STP for toilet flushing ($78m^3$/day) and irrigation ($205m^3$/day in communal area and clubhouse, and $304m^3$/day in private garden). Thus, there will be no net increase in pollution load to Deep Bay. The remarks in Table 3B of the SIA report proposed the control and management of landscape area and irrigation system in the private garden by DMC Manager.

(b) The proposed house development with the reuse of treated effluent, as proposed by the applicant, in the SIA is a designated project under the EIAO and an EP is required. Should the application be approved, a condition could be imposed requiring the applicant to implement the sewage disposal arrangement including the proposed interim on-site sewerage treatment plant, the reuse of treated effluent and the proposed irrigation system, as proposed by the applicant, to the satisfaction of the DEP or of the Board.

(c) Subject to the textual amendments in the SIA report submitted on 3.12.2014, he would have no comment on the SIA.

(d) This is a revised residential development scheme different from the layout shown in the EP No. EP-311/2008/D issued under the EIAO (Cap. 499), and the proposed on-site wastewater treatment does not conform to Condition 5.13 of the EP. The applicant should be reminded to go through the statutory EIAO process should the current development scheme goes ahead.

(e) Regarding the funding arrangement and long-term management proposal for the WRA submitted by the applicant, he concurs with DAFC's views in respect of the applicant's commitment to follow the PPP scheme under the New Nature Conservation Policy for ensuring long-term maintenance and management of the WRA, as well as the need to impose the previous approval conditions in

relation to the submission and implementation of funding arrangement proposal for ensuring the long-term maintenance and management of the restored wetland area.
[see approval condition at paragraph 13.2(h)]
[see comments of DAFC at paragraph 10.1.3(c) above]

(f) He has no comment on the noise impact assessment and air quality issue.

Traffic

10.1.5 Comments of the Commissioner for Transport (C for T):

(a) He has no objection to the application from traffic engineering point of view and has no comment on the proposed number of parking spaces which complied with the requirements under the HKPSG and the TIA submitted.

(b) The applicant should take account of the segregation of vehicles and pedestrian in the detailed design during submission of the general building plan stage. He has no objection to the proposed basement carpark but comment will be provided at the detailed design stage.

10.1.6 Comments of the Chief Engineer/Railway Development 2-2, Railway Development Office, Highways Department (CE/RD2-2, RDO, HyD):

(a) He has no comment on the application from railway development point of view provided that MTR Corporation Limited's (MTRCL) requirements will be followed.

(b) As the site, in particular the site portion within Lot 43 s.A RP in D.D. 101 (**Plan A-2**), falls within the railway protection boundary of the Hong Kong Section of the XRL, which is now under construction. The applicant should consult MTRCL on full details of the proposal and comply with their requirements with respect to the construction, operation, maintenance and safety of the XRL.

10.1.7 Comments of the Chief Highway Engineer/New Territories West, Highways Department (CHE/NTW, HyD):

(a) He has no objection to the application from highways maintenance point of view.

(b) Since the site falls within the gazetted railway scheme boundary of the XRL, RDO, HyD should be consulted.
[See comments of RDO, HyD at paragraph 10.1.6 above]

(c) DEP should be consulted and he presumes there is no proposed noise barrier to be maintained by HyD.
[See comments of DEP at paragraph 10.1.4 above]

Fire Safety

10.1.8 Comments of the Director of Fire Services (D of FS):

(a) He has no objection in principle to the application subject to the water supplies for firefighting and fire service installations being provided to his satisfaction.

(b) Detailed fire safety requirements will be formulated upon receipt of formal submission of general building plans.

Building

10.1.9 Comments of the Chief Building Surveyor/New Territories West, Buildings Department (CBS/NTW, BD):

(a) He has no in-principle objection to the application under the Buildings Ordinance (BO).

(b) The access road linking the site and the Castle Peak Road shall be completed before Occupation Permit application.

(c) In view of the size of the site, area of any internal streets/roads required under the BO s.16(1)(p) may have to be deducted from site area for plot ratio/site coverage calculations under the BO.

(d) Recreational facilities and the proposed noise barriers, unless exempted, are accountable for GFA calculation under the BO.

(e) Filtration plant rooms for swimming pool at private houses are accountable for GFA calculation under the BO.

(f) Each phase of the proposed development should be self-sustainable under the BO.

(g) The applicant's attention is drawn to the requirements on provision of emergency vehicle access (EVA) to all buildings to be erected on the site under Building (Planning) Regulation (B(P)R) 41D.

(h) The proposed open space should not be less than the requirements as stipulated in the second schedule of B(P)R.

(i) Due to the limited information provided, he is not able to comment on the design of the basement carpark at this stage. Application for exemption of car parking spaces from GFA calculation under the BO will be considered on the basis of the PNAP APP-2 during plan submission stage. The new quality and sustainable built environment (QBE) requirements are applicable to the site.

(j) In accordance with the Government's committed policy to implement building design to foster a QBE, the sustainable building design requirements (including building separation, building setback and greenery coverage) should be included, where possible,

in the planning approval.

(k) For building plans related to the STP and related facilities within the private lot, detailed checking will be carried out upon formal submission of building/drainage plans when comments from relevant departments will be sought through the centralized plan processing system.

Drainage

10.1.10 Comments of the Chief Engineer/Mainland North, Drainage Services Department (CE/MN, DSD):

(a) He has no objection in principle to the proposed development from drainage point of view and has no comment on the further information submitted.

(b) He has no comment on the DIA report submitted at this preliminary stage. Should the Board consider the application is acceptable from planning point of view, the following approval conditions should be stipulated in the approval letter:

(i) The submission of a revised and detailed DIA, including flood relief mitigation measures to the satisfaction of D of DS or of the Board.

(ii) The implementation of drainage proposal and other necessary flood relief mitigation measures identified in the revised and detailed DIA to the satisfaction of D of DS or of the Board.

(c) He would reserve his comments until specific drainage proposal is submitted.

(d) The applicant should be reminded that the SIA for the current application needs to meet the full satisfaction of DEP.

(e) The construction of the planned Ngau Tam Mei Trunk Sewerage is tentatively scheduled for commencement in the end of 2017 for completion in 2021 subject to the conditions that local/public support can be obtained shortly and funding availability.

Landscape and Visual Aspects

10.1.11 Comments of the Chief Town Planner/Urban Design and Landscape, Planning Department (CTP/UD&L, PlanD):

Urban Design

(a) Regarding the proposed change in house type and configuration at the northern portion of the development, the applicant has provided reasonable explanation in the submitted further information that the north-south visual permeability achieved along the visual corridors in the previously approved scheme under Application No.

A/YL-MP 185 will also be achieved. As such, he considers that his concern on the reduction of visual permeability has been addressed.

(b) As to the change in layout at the south-eastern portion affecting the east-west permeability, the applicant explains that the east-west visual permeability has been enhanced by the enlarged central open space. He has no comment on this aspect.

(c) He has no particular concern on the proposed highest site formation level of 7.8mPD as it is required as a flood prevention measure.

(d) He noted the applicant's confirmation that the height of the temporary noise barriers (9m and 10m) is the absolute minimum. The applicant also advised that the temporary noise barrier along the site boundary was already established in 2010 in order to meet the requirements under the Environmental Permit.

(e) Regarding communal open space calculation, the applicant should be advised that the ancillary pedestrian route should be "within" the open space to be counted as part of the open space as per the HKPSG.

(f) It is noted that the statutory restrictions of the OZP in terms of maximum building height and plot ratio applicable to the site are 6 storeys and 0.4. Hence, the proposed development comprising 2-storey and 3-storey detached and/or detached houses is generally in line with the OZP restrictions. Nevertheless, 2-storey houses along the northern portion of the subject site seem to relate better to the fish ponds/wetlands to its north.

(g) Presumably, the continuous belt of green planting along the southern/eastern boundary should be carefully arranged at the detailed design stage in order to maintain the porosity of the proposed east-west and north-south visual corridors.

(h) In order to minimize any potential visual impact from the proposed noise barrier structures, should the application be approved, it is suggested that an approval condition in relation to the design and provision of mitigation measures to alleviate the visual impact of the noise barriers be imposed.

Landscape Planning

(i) He has no objection to the application from landscape planning perspective.

(j) The site was the subject of 2 previous applications (No. A/YL-MP/166 and 185) of the same use to which he had no objection from landscape planning perspective. According to the submitted information, the current application is an amendment to the approved Application No. A/YL-MP/185 and related to the layout of the residential development, the WRA would not be affected. According to the aerial photo of 14.1.2013, the wetland

restoration component is completed and site formation works are in progress in the residential area. Further adverse landscape impact is not anticipated.

(k) The applicant should maximize the provision of greening, especially at-grade tree and shrub planting along roadside and clubhouses to improve the landscape and visual amenity of the development.

(l) Should the Board approve the application, the following landscape condition should be included in the planning approval:

the submission and implementation of a revised Landscape Master Plan including tree preservation proposal to the satisfaction of the Director of Planning or of the Board.

Other

10.1.12 Comments of the Chief Engineer/Development (2), Water Supplies Department (CE/Dev(2), WSD):

(a) He has no objection to the application.

(b) For provision of water supply to the development, the applicant may need to extend his inside services to the nearest suitable Government water mains for connection. The applicant shall resolve any land matter (such as private lots) associated with the provision of water supply and shall be responsible for the construction, operation and maintenance of the inside services within the private lots to WSD's standards.

(c) Fresh water from Government mains shall not be used for watering plant nurseries or landscape features purposes except with the written consent of the Water Authority. Consent to use fresh water from the mains for such purposes may be given on concessionary supply basis if an alternative supply is impracticable and evidence to that effect is offered to and accepted by the Water Authority. Such permission will be withdrawn if in the opinion of the Water Authority the supply situation requires it.

10.1.13 Comments of the Director of Electrical and Mechanical Services (DEMS):

Electricity Safety

(a) The applicant shall approach the electricity supplier for the requisition of cable plans to find out whether there is any underground cable (and/or overhead line) within or in the vicinity of the application site.

(b) For the site within the preferred working corridor of high voltage overhead lines at transmission voltage level 132kV and above as stipulated in the HKPSG published by the Planning Department, prior consultation and arrangement with the electricity supplier is necessary.

(c) Prior to establishing any structure within the site, the applicant and/or his contractors shall liaise with the electricity supplier and, if necessary, ask the electricity supplier to divert the underground cable (and/or overhead line) away from the vicinity of the proposed structure.

(d) The "Code of Practice on Working near Electricity Supply Lines" established under the Electricity Supply Lines (Protection) Regulation shall be observed by the applicant and his contractors when carrying out works in the vicinity of the electricity supply lines.

Town Gas Safety

(e) There is a high pressure town gas pipeline running along San Tin Highway.

(f) As regards the public comments concerning the site in close proximity to the existing high pressure gas pipeline, he considers that given the application is a low density residential development (i.e. plot ratio is 0.4) and the minimum proximity distance of the proposed houses to the concerned gas pipeline is about 150m, it should not be a mandatory requirement for the applicant to submit a risk assessment (**Plan A-2**). Nevertheless, given that there is a town gas pipeline near to the proposed development, the project proponent should maintain liaison/coordination with the Hong Kong and China Gas Company Limited in respect of the exact location of existing or planned gas pipe routes/gas installations in the vicinity of the proposed works area and the minimum set back distance away from the gas pipes/gas installations if any excavation work is required during the design and construction stages of the development. The project proponent shall also note the requirements of the Electrical and Mechanical Services Department's 'Code of Practice on Avoiding Danger from Gas Pipes'.

District Officer's Comments

10.1.14 Comments of the District Officer/Yuen Long, Home Affairs Department (DO/YL, HAD):

(a) His office has no comment on the application and the local comments shall be submitted to the Board direct, if any.

(b) He advises that DMC is a private covenant among the owners, the property manager and the developer of a building. Engaged parties are empowered to act under the power conferred by the administration of the building. They may also take appropriate actions and measures against any owner who does not comply with the DMC. He has no power to enforce against non-compliance of the DMC conditions.

(c) Four objection letters, i.e. three from San Tin Rural Committee

(STRC) and one from a member of Yuen Long District Council (YLDC), were received by his Office. The objection letters were also received by the Board as public comments **(Appendices III-3 to III-5 and III-20)**.

10.2 The following Government departments have no comment on the application:

(a) Director of Leisure and Cultural Services (DLCS);
(b) Chief Engineer/Sewerage Projects, Drainage Services Department (CE/SP, DSD);
(c) Commissioner of Police (C of P);
(d) Director of Food and Environmental Hygiene (DFEH);
(e) Director of Health; and
(f) Project Manger (New Territories West), Civil Engineering and Development Department (PM(NTW), CEDD).

11. Public Comments Received During the Statutory Publication Period

11.1 The application and subsequent further information (FI) submitted by the applicant were published 7 times on 22.11.2013, 20.12.2013, 24.1.2014, 21.2.2014, 4.4.2014, 18.7.2014 and 7.11.2014 respectively.

11.2 A total of 278 public comments (**Appendix II**) were received, including 175 supporting comments and 103 objecting comments on the application. A full set of public comments received on the application is deposited at the Board's Secretariat for Members' inspection and reference. Their major views are summarized as follows:

Objecting comments (samples at **Appendices III-1 to III-20**)

(a) 103 objecting comments were received, including 2 members of YLDC, the STRC, Villager Representatives (VR) of Mai Po Tsuen and Wo Shang Wai Tsuen, Chairman of the Owners' Committee of Royal Palms, one of the owner of Palm Springs, 7 green groups (viz. Hong Kong Nature Protection Organisation, World Wild Fund Hong Kong, Kadoorie Farm & Botanic Garden Corporation, Green Power, Conservancy Association, Hong Kong Bird Watching Society, and Designing Hong Kong Limited), Hong Kong and China Gas Company Limited, villagers of Wing Ping Tsuen, Fan Tin Tsuen, San Lung Tsuen, Tsing Lung Tsuen, Tung Chan Wai, Chuk Yuen Tsuen and Lok Ma Chau Tsuen, and private individuals.

(b) The major grounds of objection are summarized as follows:

Conservation of Wetland

(i) there is no overall funding arrangement and long-term management plan to achieve active conservation and management of the WRA within the site;

(ii) The proposed development is in conflict with the conservation policy. Approval of the application would set an undesirable precedent for similar development in Deep Bay area;

Ecology

(iii) the site is located within the Deep Bay Ramsar site of high ecological value, which is identified as part of the 12 priority sites under the New Nature Conservation Policy. The proposed development is incompatible with the surrounding wetland area and would create irreversible changes to the ecology, biodiversity and habitats of wildlife;

(iv) a vast number of birds use the area as an over-wintering site or a stopping-over point during their seasonal migration along the East Asian – Australasian Flyway. The fish ponds in the Mai Po area also provide suitable habitats for the Eurasian Otter. The proposed development would increase human disturbance and adversely affect the habitats of wild animals and birds in the wetland area;

(v) the proposed development would affect the chance of reproduction of the insects in the wetland;

(vi) the management for invasive species as proposed in the WRCS is insufficient. It is suggested that active management with action and limit levels for Red Imported Fire Ant and Apple Snail be added as part of the long-term management strategy in the WRCS;

(vii) the annual tree and shrub pruning works to be undertaken at the end of each wet season is incorrect. It should be completed prior to the beginning of October to avoid autumn migration months;

Environment and Other Technical Issues

(viii) it would create adverse impacts on glare, dust, noise, air quality, traffic, waste, hygiene, right of way, drainage and sewerage aspects during construction and operation stages. The proposed development will increase flooding risk in the area;

(ix) the proposed increase in the number of 3-storey houses particularly facing the WRA will cause more ecological impact and further human disturbance, e.g. light, water and noise pollutions. The buffer planting to screen out human disturbance between the WRA and the proposed houses is insufficient;

(x) the nearby infrastructure is insufficient and road network is already saturated. The proposed development would worsen the traffic at Castle Peak Road and the roundabout at Fairview Park. There is no EIA and TIA in the submission;

(xi) there is no road to connect the site and Castle Peak Road. It is suggested that an approval condition be imposed requiring the applicant to provide a connection road between site and Castle Peak Road;

(xii) the site is in close proximity to an existing high pressure gas pipeline;

Other Concerns

(xiii) application for pond/land filling and excavation of land and Small

House development by villagers are rejected;

(xiv) there is inadequate recreation facilities in the area. It is suggested using part of the site to provide recreation facilities for villagers;

(xv) the proposed development will affect 'fung shui' of the village; and

(xvi) there is a need to maintain the rural setting and living environment.

Supporting comments (samples at **Appendices III-21 to III-25**)

(c) 175 private individuals express support to the application. The main supporting reasons are summarized as follows:

(i) the proposed development would restore the lost wetland of high ecological value and conserve the natural environment. It has struck a balance between wetland protection and the development;

(ii) the proposed low-rise low-density residential development is compatible with the surrounding environment and would not have significant adverse impact;

(iii) the development will create jobs, better utilize abandoned agricultural land, improve hygiene, increase residential unit supply, satisfy housing demand, efficiently use the land resource, and prevent the area to become a mosquito and insects breeding ground; and

(iv) it provides an opportunity to improve local environment for the benefits of the neighbouring residents e.g. improving the traffic and infrastructural facilities in the area.

12. Planning Considerations and Assessments

In-Line with the Planning Intention

12.1 The site falls within an area zoned "OU(CDWRA)". The proposed development involves restoration of about 4.7 ha of lost wetland at the northern part of the site, i.e. the WRA (22.85% of the site) and conversion of the remaining site of about 16 ha (77.15% of the site) into a residential development with a plot ratio of 0.4 and a building height of 2 to 3 storeys above ground and over 1 common basement car park. The proposed development is in line with the planning intention of the "OU(CDWRA)" zone and conforms to the plot ratio and building height restrictions as stipulated in the Notes of the OZP.

Comparison with the Previously Approved Scheme

12.2 The site is the subject of a previous Application No. A/YL-MP/185 for the same uses, which was approved with conditions by the Committee on 21.10.2011. Compared with the approved scheme, there is no change to the PR and site coverage. The current scheme involves an increase in the number of houses, reduction in average house size, rearrangement of the houses, clubhouse and internal road, an increase in open space, number of car parking spaces, a minor decrease in the height of the noise barrier as well as an addition of a temporary STP

at the south-eastern part of the site. The current scheme with revised layout could still maintain the east-west and north-south visual corridors of the previously approved scheme as indicated by the applicant (**Drawing A-2**). The amount of the proposed communal open space, communal landscape and private garden provision has been increased by 1,450m^2, 1,934m^2 and 3,003m^2 respectively. In this regard, CTP/UD&L of PlanD has no objection to the current application from urban design, visual and landscape planning perspective. The height of the proposed noise barriers along the eastern boundary of the site is generally the same as the previously approved scheme, except that the height of the noise barrier near the entrance has been reduced from 6m to 5.5m. CTP/UD&L of PlanD and DEP have no adverse comment on the proposed noise barriers. C for T has no adverse comment on the increase in car parking spaces from 736 to 835, which is provided in accordance with the HKPSG. DEP has no adverse comment on the proposed temporary STP.

TPB-PG No. 12C

12.3 The site falls within the WBA under the TPB PG-No. 12C requiring EcoIA submission, no net increase in pollution load to Deep Bay, and provision of ecological and visual buffer to the WCA. In this regard, DAFC has no adverse comment on the current application, the revised EcoIA and the WRCS submitted. The WRA has already been implemented to the satisfaction of DAFC. With regard to the long-term maintenance and management of the WRA, the applicant has proposed to follow the arrangements for an upfront lump sum donation to the ECF established under the ECF Ordinance. The applicant also confirms that the arrangement should be completed prior to execution of the lease modification for the proposed residential development. The funding arrangement and long-term management proposal of the WRA is the same as that of the previously approved scheme. DEP and DAFC have no adverse comment on the current application.

No Net Increase in Pollution Load to Deep Bay

12.4 Regarding the requirement on no net increase in pollution load to Deep Bay, the applicant proposed in the approved scheme under Application No. A/YL-MP/185 that the sewage from the proposed development would be discharged to the planned Ngau Tam Mei Trunk Sewerage. CE/MN of DSD comments that the planned Ngau Tam Mei Trunk Sewerage is tentatively scheduled to commence in the end of 2017 for completion in 2021 provided that local/public support can be obtained shortly and funding is available. According to the submission, in order to meet the anticipated completion date of the development by 2017, the applicant now proposes a temporary on-site STP to cater for the interim need until the public truck sewer is available. By then, the temporary STP would be decommissioned.

12.5 To ensure that the proposed residential development would not cause net increase in pollution load to Deep Bay, the applicant proposes in the SIA to reuse the treated effluent from the STP for toilet flushing and landscape irrigation within the site and such arrangement will be stipulated in the DMC (**Drawings A-3** and **A-4**). DEP advises that the proposed house development with the reuse of treated effluent in the SIA is a designated project under the EIAO and an EP is required. DEP proposed to impose a condition in the planning approval requiring the applicant to implement the sewage disposal arrangement including the proposed interim on-site sewerage treatment plant, the reuse of treated effluent and the proposed irrigation system, as proposed by the applicant, to his satisfaction or of the Board. In this

regard, the control over implementation of the reuse of treated effluent could be addressed by approval condition as recommended in paragraph 13.2 (q).

Other Departmental Comments

12.6 Other concerned Government departments including D of FS, DAFC, CBS/NTW of BD, DLO/YL of LandsD, CTP/UD&L of PlanD, C for T and CE/MN of DSD have no objection to or adverse comment on the application. Their technical concerns could be addressed by approval conditions as recommended in paragraphs 13.2 (c) to (p) below.

Public Views

12.7 There are 103 public comments objecting to the application mainly on the grounds that the proposed development would have adverse impacts on traffic, ecology, hygiene, environment, air, noise, dust and light pollutions, sewerage, drainage, flooding, conservation, visual aspects, natural habitat, fung shui, and the nearby gas pipeline as detailed in paragraph 11.2 above. In this regard, concerned government departments including DAFC, DLO/YL of LandsD, D of FS, CBS/NTW of BD, C for T, CE/MN of DSD, DEP and CTP/UD&L of PlanD have no objection to or no adverse comment on the application.

12.8 There are 175 public comments expressing support to the application.

13. Planning Department's Views

13.1 Based on the assessment made in paragraph 12 and having taken into account the public comments mentioned in paragraph 11 above, the Planning Department has no objection to the application.

13.2 Should the Committee decide to approve the application, it is suggested that the permission shall be valid until 27.2.2019, and after the said date, the permission shall cease to have effect unless before the said date, the development permitted is commenced or the permission is renewed. The following conditions of approval and advisory clauses are also suggested for Members' reference:

Approval Conditions

(a) the submission and implementation of a revised Master Layout Plan to take into account conditions (b) to (q) below to the satisfaction of the Director of Planning or of the Town Planning Board;

(b) the interface arrangement for Express Rail Link project in terms of permanent land take for Express Rail Link tunnels and structures and temporary land take for related construction to the satisfaction of the Director of Highways or of the Town Planning Board;

(c) the submission and implementation of a revised Landscape Master Plan including tree preservation proposal to the satisfaction of the Director of Planning or of the Town Planning Board;

(d) the submission of a revised Drainage Impact Assessment (DIA), including

flood relief mitigation measures to the satisfaction of the Director of Drainage Services or of the Town Planning Board;

(e) in relation to (d) above, the implementation of drainage proposal and other necessary flood relief mitigation measures identified in the revised DIA to the satisfaction of the Director of Drainage Services or of the Town Planning Board;

(f) the implementation of the mitigation measures identified therein in the revised Ecological Impact Assessment to the satisfaction of the Director of Agriculture, Fisheries and Conservation or of the Town Planning Board;

(g) the submission and implementation of a maintenance and management plan which covers implementation details and the estimated annual recurrent costs with breakdown required for maintaining the restored wetland area to the satisfaction of the Director of Agriculture, Fisheries and Conservation or of the Town Planning Board;

(h) the submission and implementation of a funding arrangement proposal for ensuring the long-term maintenance and management of the restored wetland area to the satisfaction of the Director of Environmental Protection and the Director of Agriculture, Fisheries and Conservation, or of the Town Planning Board;

(i) as proposed by the applicant, land exchange and/or lease modification for the proposed development if considered and approved by the Director of Lands, should not be executed prior to the compliance with condition (h) to the satisfaction of the Director of Environmental Protection and the Director of Agriculture, Fisheries and Conservation, or of the Town Planning Board;

(j) the design and provision of improvement measures at junction of Palm Springs Boulevard and Castle Peak Road – Mai Po section identified to the satisfaction of the Commissioner for Transport or of the Town Planning Board;

(k) the design and provision of vehicle parking, motorcycle parking and loading/unloading facilities for the proposed development to the satisfaction of the Commissioner for Transport or of the Town Planning Board;

(l) the design and provision of the access connection between the development and the public road to the satisfaction of the Commissioner for Transport or of the Town Planning Board;

(m) the provision of emergency vehicular access, water supplies for fire-fighting and fire service installations to the satisfaction of the Director of Fire Services or of the Town Planning Board;

(n) the design and provision of mitigation measures to alleviate the visual impact of the noise barriers to the satisfaction of the Director of Planning or of the Town Planning Board;

(o) the submission of a revised Sewerage Impact Assessment (SIA) to the satisfaction of the Director of Environmental Protection or of the Town Planning Board;

(p) the implementation of mitigation measures identified in the revised SIA to the satisfaction of the Director of Environmental Protection or of the Town Planning Board; and

(q) the implementation of sewage disposal arrangement including the interim on-site sewerage treatment plant, the reuse of treated effluent and the irrigation system, as proposed by the applicant, to the satisfaction of the Director of Environmental Protection or of the Town Planning Board.

[Apart from the newly added conditions (o) to (q) above, the other conditions are similar to those under previously approved Application No. A/YL-MP/185]

Advisory Clauses

(a) the approval of the application does not imply that the proposed building design elements could fulfil the requirements under the Sustainable Building Design Guidelines and the relevant requirements under the lease, and that the proposed gross floor area (GFA) concession for the proposed development will be approved/granted by the Building Authority. The applicant should approach the Buildings Department and the Lands Department direct to obtain the necessary approval. If the building design elements and the GFA concession are not approved/granted by the Building Authority and the Lands Authority and major changes to the current scheme are required, a fresh planning application to the Board may be required;

(b) to note the comments of DLO/YL, LandsD that with reference to the Figure A3 of the WRCS, the WRA boundary is modified. A proposed land exchange is being processed for the lots within the site based on the previous Application No. A/YL-MP/185. Should the Board approve the application which cause amendments to the proposed land exchange, the applicant is required to apply to LandsD for the proposed development in current scheme. However, there is no guarantee that such application (including the granting of any additional Government land (GL)) will be approved. Such application will be dealt with by his department acting in the capacity as the landlord at his discretion, and if it is approved under such discretion, the approval would be subject to terms and conditions including among others, the payment of premium and administrative fee as may be imposed by his department. The proposed storm water drain will connect to outfall beyond the site boundary. Should such drains encroach upon private land and GL, the applicant should clearly indicate the whole alignment of such storm water drain connection, in particular the one connecting the existing outfall to Mai Po Tributary, and then obtain prior approval/consent from the relevant authorities before carrying out of the works. According to the layout plan of the preliminary designed interim sewage system, there is no GL involved. However, the applicant should consult his department if there is any works to be carried out on GL, if unavoidable;

(c) to note the comments of the DEP that this is a revised residential development scheme different from the layout shown in the Environmental Permit No. EP-311/2008/D issued under the Environmental Impact Assessment Ordinance (Cap. 499). The proposed on-site wastewater treatment does not conform with Condition 5.13 of the Environmental Permit. The applicant should be reminded to go through the statutory EIAO process should the current development scheme goes ahead;

(d) to note comments of C for T that the applicant should take account of the segregation of vehicles and pedestrian in the detailed design during submission of the general building plan stage. He has no objection to the proposed basement carpark but comment will be provided at the detailed design stage;

(e) to note comments of CE/RD2-2, RDO, HyD that as the application site, in particular the site portion within Lot 43 s.A RP in D.D. 101, falls within the railway protection boundary of the Hong Kong Section of the XRL, which is now under construction. The applicant should consult MTRCL on full details of the proposal and comply with their requirements with respect to the construction, operation, maintenance and safety of the XRL;

(f) to note the comments of the CBS/NTW, BD that the access road linking the site and the Castle Peak Road shall be completed before Occupation Permit application. In view of the size of the site, arc of any internal streets/roads required under the BO s.16(1)(p) may have to be deducted from site area for plot ratio/site coverage calculations under the BO. Recreational facilities and the proposed noise barriers, unless exempted, are accountable for GFA calculation under the BO. Filtration plant rooms for swimming pool at private houses are accountable for GFA calculation under the BO. Each phase of the proposed development should be self-sustainable under the BO. The applicant's attention is drawn to the requirements on provision of emergency vehicle access (EVA) to all buildings to be erected on the site under Building (Planning) Regulations (B(P)R) 41D. The proposed open space should not be less than the requirements as stipulated in the second schedule of B(P)R. Application for exemption of carparking spaces from GFA calculation under the BO will be considered on the basis of the PNAP APP-2 during plan submission stage. The new quality and sustainable built environment (QBE) requirements are applicable to the site. In accordance with the Government's committed policy to implement building design to foster a QBE, the sustainable building design requirements (including building separation, building setback and greenery coverage) should be included, where possible, in the planning approval;

(g) to note the comments of the CE/MN, DSD that he would reserve his comments until specific drainage proposal is submitted. The applicant should be reminded that the SIA for the current application needs to meet the full satisfaction of DEP;

(h) to note the comments of the CTP/UD &L, PlanD that regarding communal open space calculation, the applicant should be advised that the ancillary pedestrian route should be "within" the open space to be counted as part of the open space as per the HKPSG. The applicant should maximize the provision of greening, especially at-grade tree and shrub planting along

roadside and clubhouses to improve the landscape and visual amenity of the development;

(i) to note the comments of the CE/Dev(2), WSD that for provision of water supply to the development, the applicant may need to extend his inside services to the nearest suitable government water mains for connection. The applicant shall resolve any land matter (such as private lots) associated with the provision of water supply and shall be responsible for the construction, operation and maintenance of the inside services within the private lots to WSD's standards. Fresh water from Government mains shall not be used for watering plant nurseries or landscape features purposes except with the written consent of the Water Authority. Consent to use fresh water from the mains for such purposes may be given on concessionary supply basis if an alternative supply is impracticable and evidence to that effect is offered to and accepted by the Water Authority. Such permission will be withdrawn if in the opinion of the Water Authority the supply situation requires it; and

(j) to note the comments of the DEMS that for electricity safety, the applicant shall approach the electricity supplier for the requisition of cable plans to find out whether there is any underground cable (and/or overhead line) within or in the vicinity of the application site. For the application site within the preferred working corridor of high voltage overhead lines at transmission voltage level 132kV and above as stipulated in the HKPSG published by the Planning Department, prior consultation and arrangement with the electricity supplier is necessary. Prior to establishing any structure within the application site, the applicant and/or his contractors shall liaise with the electricity supplier and, if necessary, ask the electricity supplier to divert the underground cable (and/or overhead line) away from the vicinity of the proposed structure. The "Code of Practice on Working near Electricity Supply Lines" established under the Electricity Supply Lines (Protection) Regulation shall be observed by the applicant and his contractors when carrying out works in the vicinity of the electricity supply lines. For town gas safety, there is a high pressure town gas pipeline running along San Tin Highway and the site is in close proximity to the existing high pressure gas pipeline. He considers that given the application is a low density residential development (i.e. plot ratio is 0.4) and the minimum proximity distance of the proposed houses to the concerned gas pipeline is about 150m, it should not be a mandatory requirement for the applicant to submit a risk assessment. Nevertheless, given that there is a town gas pipeline near to the proposed development, the project proponent should maintain liaison/coordination with the Hong Kong and China Gas Company Limited in respect of the exact location of existing or planned gas pipe routes/gas installations in the vicinity of the proposed works area and the minimum set back distance away from the gas pipes/gas installations if any excavation work is required during the design and construction stages of the development. The project proponent shall also note the requirements of the Electrical and Mechanical Services Department's 'Code of Practice on Avoiding Danger from Gas Pipes'.

13.3 Alternatively, should the Committee decide to reject the application, the following reasons for rejections are suggested for Members' consideration:

(a) the proposed development is not in line with the Town Planning Board Guidelines for "Application for Developments within Deep Bay Area" (TPB PG-No. 12C) in that the applicant fails to demonstrate that the proposed development would not have adverse sewerage impact on the surrounding areas, and would not cause net increase in pollution load to the Deep Bay; and

(b) the approval of the application would set an undesirable precedent for similar applications in the Deep Bay area, and the cumulative effect of which would result in a general degradation of the environment in the Deep Bay area.

14. Decision Sought

14.1 The Committee is invited to consider the application and decide whether to grant or refuse to grant permission.

14.2 Should the Committee decide to approve the application, Members are invited to consider the approval conditions and advisory clauses, if any, to be attached to the permission, and the date when the validity of the permission should expire.

14.3 Alternatively, should the Committee decide to reject the application, Members are invited to advise what reason(s) for rejection should be given to the applicant.

15. Attachments

Appendix I	Application Form received on 14.11.2013
Appendix Ia	Supplementary Planning Statement including a Master Layout Plan (MLP), Diagrammatic schematic sections, Landscape Master Plan (LMP), Landscape and Visual Impact Assessment (LVIA), Environmental Assessment (EA), Sewerage Impact Assessment (SIA), Drainage Impact Assessment (DIA) and Traffic Impact Assessment (TIA)
Appendix Ib	Letter dated 13.11.2013 providing supplementary information
Appendix Ic	Letter dated 21.11.2013 providing supplementary information
Appendix Id	Letter dated 11.12.2013 providing responses to departmental comments and Ecological Assessment (EcoIA)
Appendix Ie	Letter dated 2.1.2014 providing responses to departmental comments and revised DIA with a drainage model
Appendix If	Letter dated 14.1.2014 providing responses to departmental comments and revised EcoIA
Appendix Ig	Letter dated 13.2.2014 providing a Wetland Restoration and Creation Scheme (WRCS)
Appendix Ih	Letters dated 17.3.2014 and 20.3.2014 providing a funding and long-term management proposal of the WRA, and responses to departmental comments
Appendix Ii	Letter dated 10.4.2014 providing responses to departmental comments

Appendix Ij	Letter dated 4.7.2014 providing responses to departmental comments and revised SIA
Appendix Ik	Letter dated 20.10.2014 providing responses to departmental comments and revised SIA
Appendix Il	Letter dated 3.12.2014 providing responses to departmental comments
Appendix Im	Letter dated 12.1.2015 providing responses to departmental comments
Appendix II	Table of public comments received during statutory publication periods
Appendices III-1 to III-25	Samples of public comments received during the publication period
Drawing A-1	Master Layout Plan of Previously Approved Scheme (No. A/YL-MP/185) and the Current Scheme
Drawing A-2	Landscape Master Plan of Previously Approved Scheme (No. A/YL-MP/185) and the Current Scheme
Drawing A-3	Proposed Sewer Connection for Interim Stage
Drawing A-4	Layout Plan of Landscape Area (with effluent reuse for irrigation)
Drawing A-5	Proposed Noise Barriers in Operation Phase
Drawing A-6	Landscape Sections
Drawing A-7	Basement Floor Plan of Previously Approved Scheme (No. A/YL-MP/185) and the Current Scheme
Drawings A-8a to A-8g	Sectional Plans for House Unit
Plan A-1	Location Plan
Plan A-2	Site Plan
Plan A-3	Aerial Photo
Plans A-4a and A-4b	Site Photos

PLANNING DEPARTMENT
FEBRUARY 2015

ANNEX B

Estimation of Sewage Flow from Pools

AECOM

Consulting Engineers
Tower 2, Grand Central Plaza
138, Shatin Rural Committee Road
Shatin, New Territories, Hong Kong

Job			Reference
Wo Shang Wai Residental Area Development Sewerage Impact Assessment			
Drawing Ref	Calculations by: ALTH	Check by: YWF	Page: L 1-1
Subject: Design Calculation on the backwash volume of pools in WSW (Annex B)			Date: Nov-2012

Pool (house)

Pool area	=	32 m^2
Pool depth	=	1.3 m
Pool volume	=	41.6 m^3
Turn over rate	=	6 hours
Flow rate	=	41.6 m3 / 6 hours
	=	1.93 l/s
Duration of backwash from sand filter	=	3 min/day
Volume of backwash	=	1.93 l/s x 3 min/day
	=	0.35 m^3/day
No. of houses with pool	=	47 houses
Volume of backwash of all pools in houses	=	**0.35 m3/day x 47 houses**
	=	**16.45 m^3/day**

Pool (clubhouse - indoor)

Pool area	=	124 m^2
Pool depth	=	1.1 m
Pool volume	=	136.4 m^3
Turn over rate	=	4 hours
Flow rate	=	136.4 m3 / 4 hours
	=	9.47 l/s
Duration of backwash from sand filter	=	3 min/day
Volume of backwash	=	**9.47 l/s x 3 min/day**
	=	**1.70 m^3/day**

Pool (clubhouse - outdoor)

Pool area	=	662 m^2
Pool depth	=	1.3 m
Pool volume	=	860.6 m^3
Turn over rate	=	6 hours
Flow rate	=	860.6 m3 / 6 hours
	=	39.84 l/s
Duration of backwash from sand filter	=	3 min/day
Volume of backwash	=	**39.84 l/s x 3 min/day**
	=	**7.17 m^3/day**
Total Volume of backwsh of all pools in the development	=	**16.45 m3/day + 1.7 m3/day + 7.17 m3/day**
	=	**25 m^3/day**

ANNEX C

Assessment of Ngau Tam Mei Trunk Sewerage Capacity

AECOM

YUEN LONG AND KAM TIN SEWERAGE AND SEWAGE DISPOSAL
NGAU TAM MEI TRUNK SEWER (BASELINE)

MANHOLE	Total DWF		Accumulated	Peaking	Design Flow	PIPE			Full Bore		Invert Levels	
No.	Increment	Accumulated	Population	factor	PxTotal DWF	Length	Dia.	Grad.	Capacity	Velocity	m.P.D.	
				P	Q						inlet	outlet
	m3 / s	m3 / s	head		m3 / s	m	mm	1 IN	m3/s	m/s	m	m
A1											-1.049	-1.049
		0.03279	12828	4	0.1784	40	525	450	0.227	1.048		
A2											-1.137	-1.137
		0.03279	12828	4	0.1784	40	525	450	0.227	1.048		
A3											-1.227	-1.227
		0.03279	12828	4	0.1784	39	525	450	0.227	1.048		
A4											-1.313	-1.313
		0.03279	12828	4	0.1784	40	525	450	0.227	1.048		
A5											-1.402	-1.502
		0.03279	12828	4	0.1784	40	525	450	0.227	1.048		
A6											-1.591	-1.666
	0.00287	0.03566	13807	4	0.1898	40	600	550	0.291	1.030		
A7											-1.738	-1.738
		0.03566	13807	4	0.1898	40	600	550	0.291	1.030		
A8											-1.811	-1.811
		0.03566	13807	4	0.1898	40	600	550	0.291	1.030		
A9											-1.884	-1.884
		0.03566	13807	4	0.1898	40	600	550	0.291	1.030		
A10											-1.956	-1.956
		0.03566	13807	4	0.1898	40	600	550	0.291	1.030		
A11											-2.029	-2.029
		0.03566	13807	4	0.1898	40	600	550	0.291	1.030		
A12											-2.102	-2.177
	0.02112	0.05678	21344	4	0.2743	40	675	650	0.365	1.019		
A13											-2.238	-2.238
		0.05678	21344	4	0.2743	40	675	650	0.365	1.019		
A14											-2.300	-2.300
		0.05678	21344	4	0.2743	40	675	650	0.365	1.019		
A15											-2.361	-2.361
		0.05678	21344	4	0.2743	40	675	650	0.365	1.019		
A16											-2.423	-2.423
		0.05678	21344	4	0.2743	40	675	650	0.365	1.019		
A17											-2.484	-2.484
		0.05678	21344	4	0.2743	40	675	650	0.365	1.019		
A18											-2.546	-2.546
		0.05678	21344	4	0.2743	40	675	650	0.365	1.019		
A19											-2.608	-2.683
	0.00151	0.05829	21858	4	0.2804	40	750	750	0.447	1.012		
A20											-2.737	-2.737
		0.05829	21858	4	0.2804	40	750	750	0.447	1.012		
A21											-2.791	-2.791
		0.05829	21858	4	0.2804	40	750	750	0.447	1.012		
A22											-2.844	-2.844
		0.05829	21858	4	0.2804	30	750	750	0.447	1.012		
A23											-2.884	-2.884
		0.05829	21858	4	0.2804	40	750	750	0.447	1.012		
A24											-2.937	-2.937
		0.05829	21858	4	0.2804	40	750	750	0.447	1.012		
A25											-2.991	-2.991
		0.05829	21858	4	0.2804	40	750	750	0.447	1.012		
A26											-3.044	-3.044
	0.00192	0.06022	22798	4	0.2881	40	750	700	0.463	1.048		
A27											-3.101	-3.101
		0.06022	22798	4	0.2881	31	750	700	0.463	1.048		
A28											-3.145	-3.145
		0.06022	22798	4	0.2881	23	750	700	0.463	1.048		
A29											-3.179	-3.254
	0.04900	0.10922	39826	4	0.4841	43	825	650	0.618	1.155		
Pumping Station											-3.320	

AECOM

YUEN LONG AND KAM TIN SEWERAGE AND SEWAGE DISPOSAL

NGAU TAM MEI TRUNK SEWER
(with Additional Flow from the Proposed Wo Shang Wai Development)

MANHOLE	Total DWF		Accumulated Population	Peaking factor	Design Flow	PIPE			Full Bore		Invert Levels	
No.	Increment	Accumulated			PxTotal DWF	Length	Dia.	Grad.	Capacity	Velocity	m.P.D.	
				P	Q						inlet	outlet
	m3 / s	m3 / s	head		m3 / s	m	mm	1 IN	m3/s	m/s	m	m
A1											-1.049	-1.049
		0.03279	12828	4	0.1784	40	525	450	0.227	1.048		
A2											-1.137	-1.137
(from Proposed Wo Shang Wai Development)	0.00483	0.03762	15407	4	0.1977	40	525	450	0.227	1.048		
A3											-1.227	-1.227
		0.03762	15407	4	0.1977	39	525	450	0.227	1.048		
A4											-1.313	-1.313
		0.03762	15407	4	0.1977	40	525	450	0.227	1.048		
A5											-1.402	-1.502
		0.03762	15407	4	0.1977	40	525	450	0.227	1.048		
A6											-1.591	-1.666
	0.00287	0.04049	16386	4	0.2092	40	600	550	0.291	1.030		
A7											-1.738	-1.738
		0.04049	16386	4	0.2092	40	600	550	0.291	1.030		
A8											-1.811	-1.811
		0.04049	16386	4	0.2092	40	600	550	0.291	1.030		
A9											-1.884	-1.884
		0.04049	16386	4	0.2092	40	600	550	0.291	1.030		
A10											-1.956	-1.956
		0.04049	16386	4	0.2092	40	600	550	0.291	1.030		
A11											-2.029	-2.029
		0.04049	16386	4	0.2092	40	600	550	0.291	1.030		
A12											-2.102	-2.177
	0.02112	0.06161	23923	4	0.2937	40	675	650	0.365	1.019		
A13											-2.238	-2.238
		0.06161	23923	4	0.2937	40	675	650	0.365	1.019		
A14											-2.300	-2.300
		0.06161	23923	4	0.2937	40	675	650	0.365	1.019		
A15											-2.361	-2.361
		0.06161	23923	4	0.2937	40	675	650	0.365	1.019		
A16											-2.423	-2.423
		0.06161	23923	4	0.2937	40	675	650	0.365	1.019		
A17											-2.484	-2.484
		0.06161	23923	4	0.2937	40	675	650	0.365	1.019		
A18											-2.546	-2.546
		0.06161	23923	4	0.2937	40	675	650	0.365	1.019		
A19											-2.608	-2.683
	0.00151	0.06312	24437	4	0.2997	40	750	750	0.447	1.012		
A20											-2.737	-2.737
		0.06312	24437	4	0.2997	40	750	750	0.447	1.012		
A21											-2.791	-2.791
		0.06312	24437	4	0.2997	40	750	750	0.447	1.012		
A22											-2.844	-2.844
		0.06312	24437	4	0.2997	30	750	750	0.447	1.012		
A23											-2.884	-2.884
		0.06312	24437	4	0.2997	40	750	750	0.447	1.012		
A24											-2.937	-2.937
		0.06312	24437	4	0.2997	40	750	750	0.447	1.012		
A25											-2.991	-2.991
		0.06312	24437	4	0.2997	40	750	750	0.447	1.012		
A26											-3.044	-3.044
	0.00192	0.06505	25377	4	0.3074	40	750	700	0.463	1.048		
A27											-3.101	-3.101
		0.06505	25377	4	0.3074	31	750	700	0.463	1.048		
A28											-3.145	-3.145
		0.06505	25377	4	0.3074	23	750	700	0.463	1.048		
A29											-3.179	-3.254
	0.04900	0.11405	42405	4	0.5034	43	825	650	0.618	1.155		
Pumping Station											-3.320	

Appendix 4.1
Letter from MTR Corporation

MTR Corporation Limited
香港鐵路有限公司
www.mtr.com.hk

MTR

Profit Point Enterprises Ltd
72-76/F, Two International Finance Centre
8 Finance Street
Central
Hong Kong

Our ref: XRL-COR-DM(XRLT)-INF-003673
/ INF-008
Your ref:

By Post & Fax: 2908 8838

19 April 2013

RECEIVED
24 APR 2013
BY:.....

Attn: David Dumigan

Dear Sirs,

Express Rail Link
Interface with the Wo Sang Wai Development
Possible measures to reduce noise impact

We refer to our exchange of letters in 2011 with respect to your request for possible measures to be implemented at the Mai Po Ventilation Building (MPVB) to reduce the noise level at the facade of the MPVB such that the noise level at a future house (within your Wo Sang Wai Development) north of and closest to the MPVB would be within the acceptable limit. We also refer to our recent exchange of emails and meetings in our Kam Tin office on 17 January and 28 March 2013 on the same subject.

The Express Rail Link Environmental Impact Assessment (XRL EIA) was submitted to EPD in May 2009 and approved by EPD in September 2009. The EIA concluded that the construction and operation of the MPVB would not cause any unacceptable noise impact on the 3 identified nearby noise sensitive receivers (NSRs) including MP1, MP5 and MP6. MP1 is an existing NSR while MP5 and MP6 are planned NSRs. MP5 is your planned Wo Sang Wai Development. The locations of the NSRs are shown on the attached sketch.

According to our MPVB design, the anticipated noise levels at the ventilation openings of our MPVB are as follows:-

	Maximum SWL during Daytime, dB(A)	Maximum SWL during Night time, dB(A)
North Elevation	77	75
East Elevation	84	78
South Elevation	89	84
West Elevation	79	75

.../2

MTR Headquarters Building, Telford Plaza, Kowloon Bay,
Kowloon, Hong Kong. GPO Box 9916, Hong Kong
Tel (852) 2993 2111 Fax (852) 2798 8822

香港九龍灣德福廣場港鐵總部大樓
香港郵政總局信箱9916號
電話 (852) 2993 2111 傳真 (852) 2798 8822

Please reply to :
XRL Project Office
7/F MTR Kam Tin Building
23 Kam Ho Road, Kam Tin, N.T., H.K.

MTR

22 April 2013
Our ref: XRL-COR-DM(XRLT)-INF-003673
Profit Point Enterprises Ltd
Attn: Mr. David Dumigan

Based on these noise levels, we confirm that the noise levels at the NSRs, MP1, MP5 and MP6, will fall below the acceptable level, as we have already demonstrated and committed in our XRL EIA. We also confirm that the noise levels at three 3 new NSRs, MP5a, MP5b and MP6b, identified by you within your Wo Sang Wai Development but were not part of considerations in our EIA completed in 2009, will also fall below the acceptable level.

We must stress that the noise levels in the table above are lower than that we have committed in our XRL EIA approved by EPD in September 2009. We have no obligations to limit the noise from the MPVB to such levels. If any mitigation measures are found necessary so as to limit the noise to those levels to suit your Wo Sang Wai Development, you shall be responsible for the additional cost incurred which will be agreed with you separately.

We trust this letter adequately summarise our response to your request dated back in February 2010 to RDO. We will write separately on the fees incurred by our consultant in assessing the feasibility of your request.

Yours faithfully,

Augustine Li
Design Manager – XRL Tunnels

AL/SK/jl

cc: Alex Chan - RDO/HyD

Please reply to :
XRL Project Office
7/F MTR Kam Tin Building
23 Kam Ho Road, Kam Tin, N.T., H.K.

Leung, Henry

From: CHONG Daniel Hing Pong (莊慶邦) <dhpchong@mtr.com.hk>
Sent: 20 September 2017 08:59
To: Leung, Henry
Cc: LAU Thomas Ming Yu (劉名瑜)
Subject: RE: XRL Mai Po Ventilation Building (MPVB) Maximum Sound Power Level (SWL)

Dear Henry,

Please note that there is no change to the anticipated noise levels at the ventilation openings of MPV. Nevertheless, the following paragraph from the letter remains valid:

We must stress that the noise levels in the table above are lower than that we have committed in our XRL EIA approved by EPD in September 2009. We have no obligations to limit the noise from the MPVB to such levels. If any mitigation measures are found necessary so as to limit the noise to those levels to suit your Wo Sang Wai Development, you shall be responsible for the additional cost incurred which will be agreed with you separately.

Regards,

Daniel Chong

Senior Design Management Engineer – Civil
XRL Tunnel
MTR Corporation Limited
dhpchong@mtr.com.hk
Tel (852) 2829 2379
Fax (852) 2735 2339
MTR Corporation Limited
dhpchong@mtr.com.hk

MTR
caring for life's journeys

www.mtr.com.hk

From: Leung, Henry [mailto:Henry.Leung@mottmac.com]
Sent: Tuesday, 19 September, 2017 15:38
To: LAU Thomas Ming Yu (劉
Cc: Chan, Julia; Chan, Sunny
Subject: XRL Mai Po Ventilation Building (MPVB) Maximum Sound Power Level (SWL)
Importance: High

Dear Thomas,

Regarding the possible measures to reduce noise impact from Mai Po Ventilation Building (MPVB) to Wo Shang Wai (WSW) development, MTRCL was provided the maximum Sound Power Levels (SWLs) of the ventilation openings based on the MPVB design in Year 2013 as shown in attached letter.

Recently, EPD request us to review the noise impact from MPVB to noise sensitive receives at WSW development and check with MTRCL that whether there are any updates on such information. Please let us know if there are any updates on the maximum SWLs. If no, the maximum SWLs of the ventilation openings of MPVB as shown in attached letter dated 19-April-2013 should be the latest information.

Due to the tighten schedule of my project, it would be grateful if you can provide us the information within this week. Should you have any enquiries, please feel free to contract me. Thanks for your help in advance.

Henry Leung
Environmental Consultant

T +852 2828 5757 D +852 2828 5876 F +852 2827 1823
henry.leung@mottmac.com.hk

MOTT MACDONALD

Mott MacDonald
20/F AIA Kowloon Tower
Landmark East
100 How Ming Street
Kwun Tong
Kowloon
Hong Kong

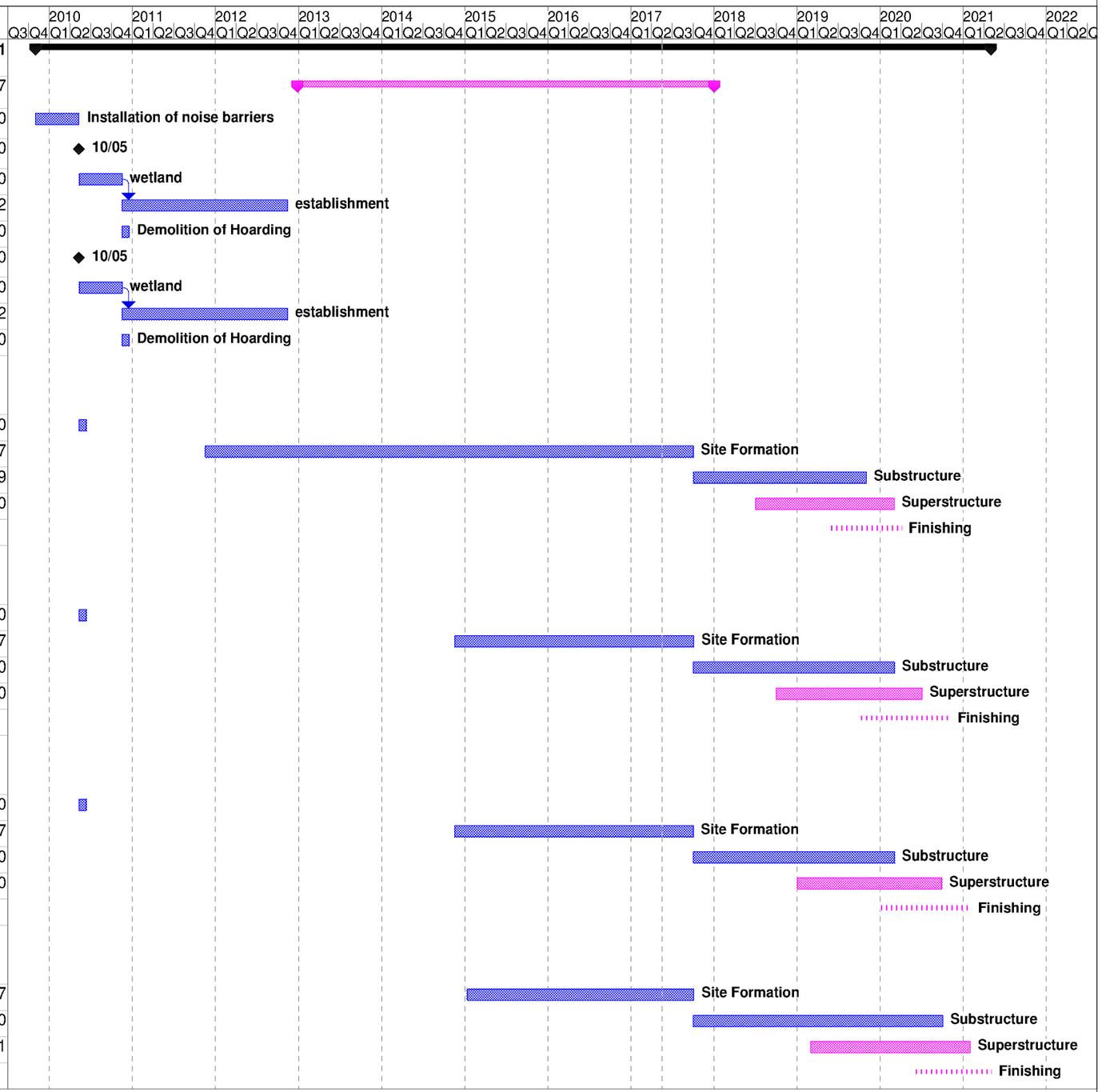
Website | Twitter | LinkedIn | Facebook | YouTube

Appendix 4.2

Construction Noise Impact Assessment in Approved WSW VEP (ERR for Change in Master Layout Plan) (Application No. VEP-538/2017)

Proposed Comprehensive Development at Wo Shang Wai, Yuen Long

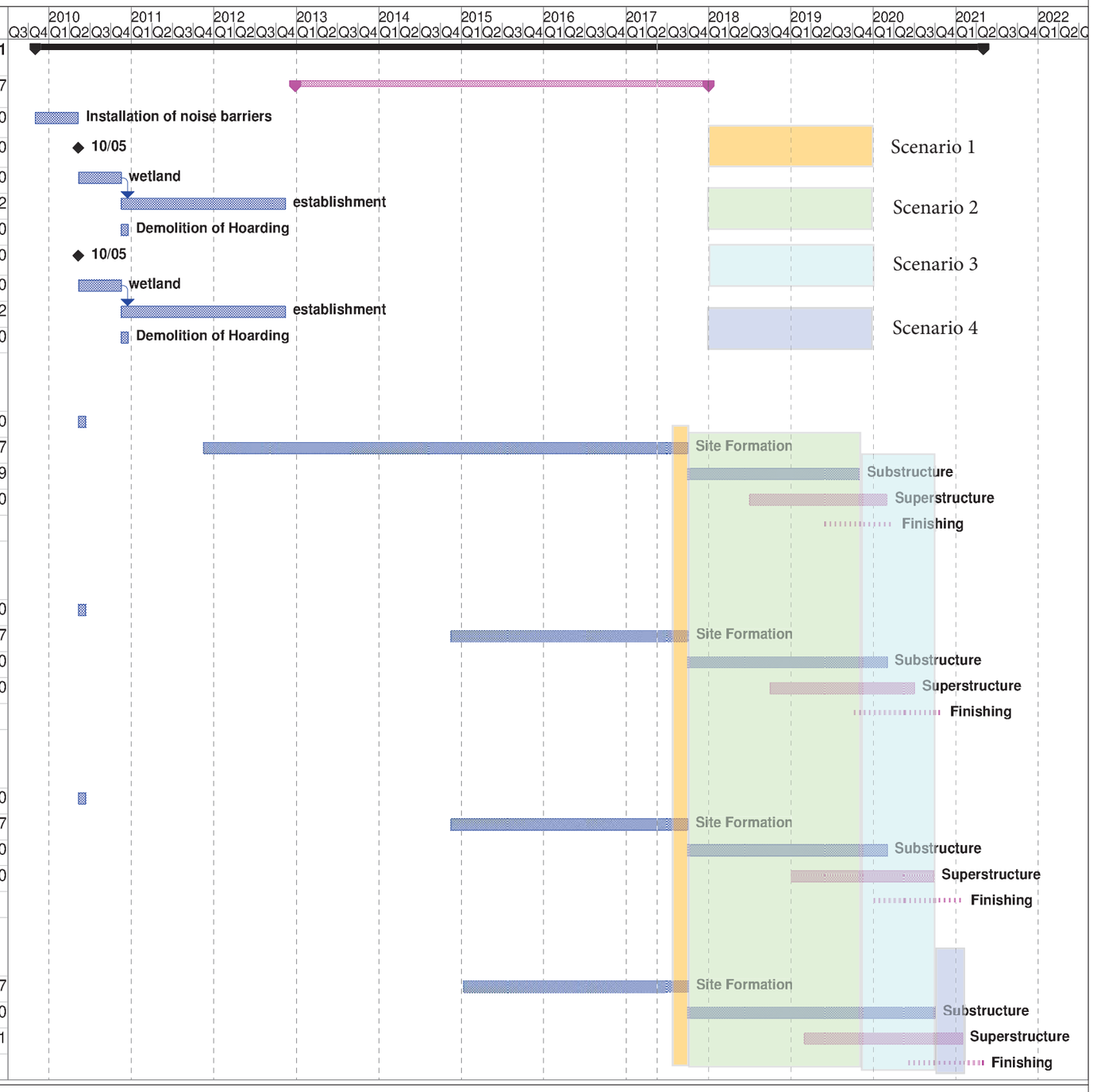
ID	Task Name	Duration	Start	Finish
1	**CONTRACT PERIOD**	**4200 days**	**Sun 01/11/09**	**Sat 01/05/21**
2	**Superstructure & Finishing Work (Total Days)**	1831 days	Thu 27/12/12	Sun 31/12/17
3	**Foundation and erection of noise barriers**	188 days	Sun 01/11/09	Fri 07/05/10
4	**Phase A - Wetland Restoration**	0 days	Mon 10/05/10	Mon 10/05/10
5	Construction of wetland	188 days	Wed 12/05/10	Mon 15/11/10
6	Establishment of wetland	727 days	Tue 16/11/10	Sun 11/11/12
7	Demolition of Hoarding	30 days	Tue 16/11/10	Wed 15/12/10
8	**Phase B - Wetland Restoration**	0 days	Mon 10/05/10	Mon 10/05/10
9	Construction of wetland	188 days	Wed 12/05/10	Mon 15/11/10
10	Establishment of wetland	727 days	Tue 16/11/10	Sun 11/11/12
11	Demolition of Hoarding	30 days	Tue 16/11/10	Wed 15/12/10
12	**Phase C - Site Formation/Preloading/Substructure/Superstructure**			
13	Site Preparatory Works	32 days	Mon 10/05/10	Thu 10/06/10
14	Site Formation	2146 days	Wed 16/11/11	Sat 30/09/17
15	Building Construction - Substructure work	759 days	Mon 02/10/17	Wed 30/10/19
16	Building Construction - Superstructure Work	608 days	Mon 02/07/18	Sat 29/02/20
17	Building Construction - Finishing Period		Sat 01/06/19	
18	**Phase D - Site Formation/Preloading/Substructure/Superstructure**			
19	Site Preparatory Works	32 days	Mon 10/05/10	Thu 10/06/10
20	Site Formation	1050 days	Tue 18/11/14	Mon 02/10/17
21	Building Construction - Substructure work	883 days	Sun 01/10/17	Sun 01/03/20
22	Building Construction - Superstructure Work	640 days	Mon 01/10/18	Wed 01/07/20
23	Building Construction - Finishing Period		Tue 01/10/19	
24	**Phase E - Site Formation/Preloading/Substructure/Superstructure**			
25	Site Preparatory Works	32 days	Mon 10/05/10	Thu 10/06/10
26	Site Formation	1048 days	Tue 18/11/14	Sat 30/09/17
27	Building Construction - Substructure work	883 days	Sun 01/10/17	Sun 01/03/20
28	Building Construction - Superstructure Work	634 days	Tue 01/01/19	Fri 25/09/20
29	Building Construction - Finishing Period		Wed 01/01/20	
30	**Phase F - Site Formation/Preloading/Substructure/Superstructure**			
31	Site Formation	996 days	Sun 11/01/15	Mon 02/10/17
32	Building Construction - Substructure work	1096 days	Sun 01/10/17	Wed 30/09/20
33	Building Construction - Superstructure Work	701 days	Fri 01/03/19	Fri 29/01/21
34	Building Construction - Finishing Period		Mon 01/06/20	



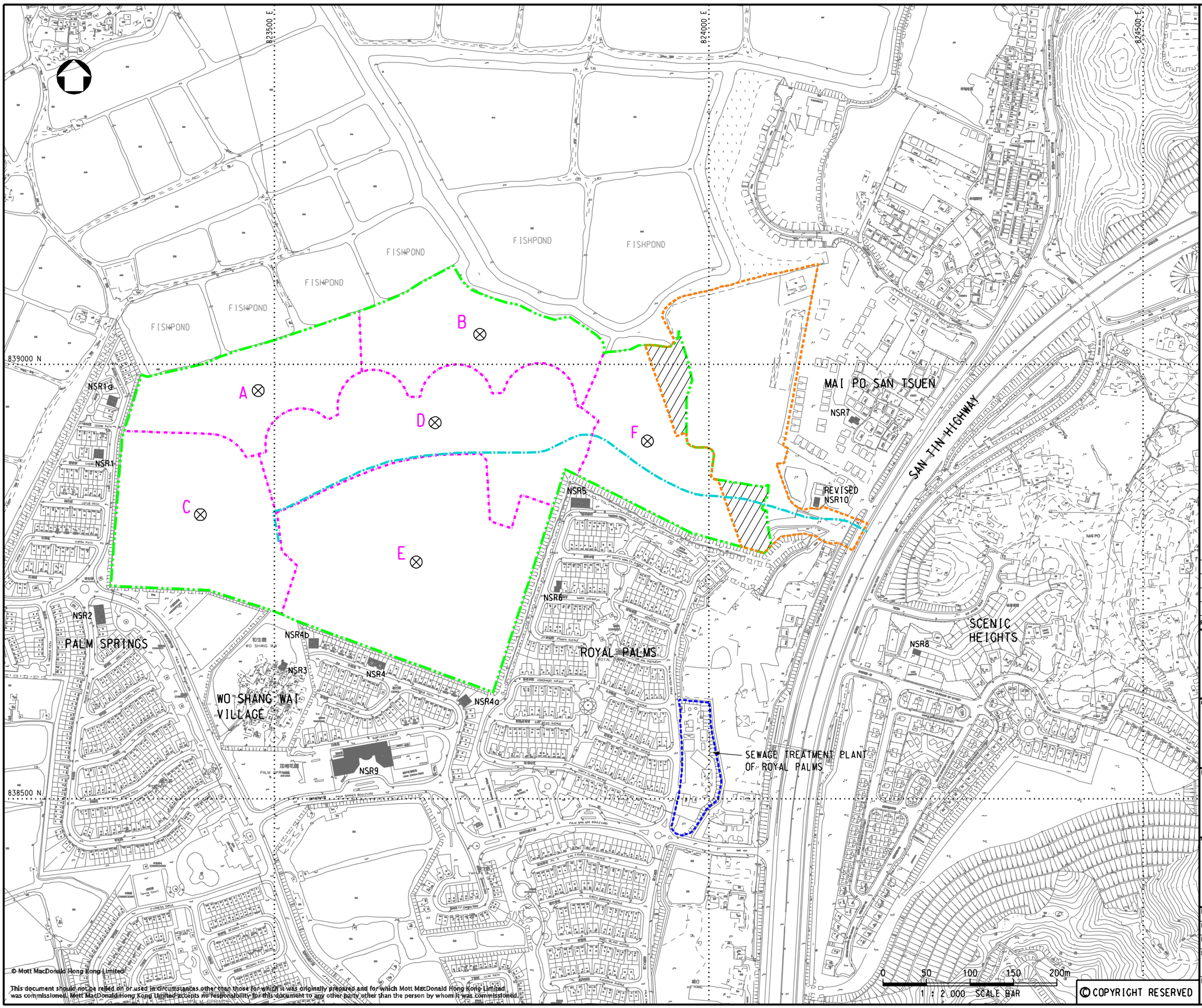
Task ▬ Milestone ◆ Summary ▬

Proposed Comprehensive Development at Wo Shang Wai, Yuen Long

ID	Task Name	Duration	Start	Finish
1	**CONTRACT PERIOD**	**4200 days**	**Sun 01/11/09**	**Sat 01/05/21**
2	**Superstructure & Finishing Work (Total Days)**	1831 days	Thu 27/12/12	Sun 31/12/17
3	**Foundation and erection of noise barriers**	188 days	Sun 01/11/09	Fri 07/05/10
4	**Phase A - Wetland Restoration**	0 days	Mon 10/05/10	Mon 10/05/10
5	Construction of wetland	188 days	Wed 12/05/10	Mon 15/11/10
6	Establishment of wetland	727 days	Tue 16/11/10	Sun 11/11/12
7	Demolition of Hoarding	30 days	Tue 16/11/10	Wed 15/12/10
8	**Phase B - Wetland Restoration**	0 days	Mon 10/05/10	Mon 10/05/10
9	Construction of wetland	188 days	Wed 12/05/10	Mon 15/11/10
10	Establishment of wetland	727 days	Tue 16/11/10	Sun 11/11/12
11	Demolition of Hoarding	30 days	Tue 16/11/10	Wed 15/12/10
12	**Phase C - Site Formation/Preloading/Substructure/Superstructure**			
13	Site Preparatory Works	32 days	Mon 10/05/10	Thu 10/06/10
14	Site Formation	2146 days	Wed 16/11/11	Sat 30/09/17
15	Building Construction - Substructure work	759 days	Mon 02/10/17	Wed 30/10/19
16	Building Construction - Superstructure Work	608 days	Mon 02/07/18	Sat 29/02/20
17	Building Construction - Finishing Period		Sat 01/06/19	
18	**Phase D - Site Formation/Preloading/Substructure/Superstructure**			
19	Site Preparatory Works	32 days	Mon 10/05/10	Thu 10/06/10
20	Site Formation	1050 days	Tue 18/11/14	Mon 02/10/17
21	Building Construction - Substructure work	883 days	Sun 01/10/17	Sun 01/03/20
22	Building Construction - Superstructure Work	640 days	Mon 01/10/18	Wed 01/07/20
23	Building Construction - Finishing Period		Tue 01/10/19	
24	**Phase E - Site Formation/Preloading/Substructure/Superstructure**			
25	Site Preparatory Works	32 days	Mon 10/05/10	Thu 10/06/10
26	Site Formation	1048 days	Tue 18/11/14	Sat 30/09/17
27	Building Construction - Substructure work	883 days	Sun 01/10/17	Sun 01/03/20
28	Building Construction - Superstructure Work	634 days	Tue 01/01/19	Fri 25/09/20
29	Building Construction - Finishing Period		Wed 01/01/20	
30	**Phase F - Site Formation/Preloading/Substructure/Superstructure**			
31	Site Formation	996 days	Sun 11/01/15	Mon 02/10/17
32	Building Construction - Substructure work	1096 days	Sun 01/10/17	Wed 30/09/20
33	Building Construction - Superstructure Work	701 days	Fri 01/03/19	Fri 29/01/21
34	Building Construction - Finishing Period		Mon 01/06/20	



Task ▬ Milestone ◆ Summary ▬



LEGEND

- SITE BOUNDARY
- PHASE BOUNDARY
- WORKS AREA OF THE HONG KONG SECTION OF GUANGZHOU - SHENZHEN - HONG KONG EXPRESS RAIL LINK (XRL)
- SITE ACCESS ROAD AND HAUL ROAD
- WSW AREA ENCROACHED BY XRL WORKS AREA (TOA)
- REPRESENTATIVE NOISE SENSITIVE RECEIVERS
- LOCATION OF GEOGRAPHICAL CENTRE IN EACH CONSTRUCTION

Rev	Date	Drawn	Description	Ch'k'd	App'd
P4	JUN 17	MING	GENERAL REVISION	SC	EC
P3	MAY 17	MING	GENERAL REVISION	HC	EC
P2	MAR 17	MING	GENERAL REVISION	HC	JFP
P1	NOV 16	MING	FIRST ISSUE	HC	JFP

Mott MacDonald
20/F AIA Kowloon Tower
Landmark East
100 How Ming Street
Kwun Tong, Kowloon
Hong Kong
T +852 2828 5757
F +852 2827 1823
w www.mottmac.com.hk

Client

PROFIT POINT ENTERPRISES LTD

Project

PROPOSED COMPREHENSIVE DEVELOPMENT AT WO SHANG WAI, YUEN LONG

Title

LOCATION OF REPRESENTATIVE NOISE SENSITIVE RECEIVERS (NSRs) DURING CONSTRUCTION PHASE

Designed	EY		Eng.Chk.	JC	
Drawn	MING		Coordination	JC	
Dwg.Chk.	EY		Approved	EC	

Scale 1:2000@A1

Project 221005

Status PRE

CAD File J:\221005\REPORT\ENV\STPVEPV1706011FIG 3-1.dgn

Drawing No. FIGURE 3.1

Rev P4

Total SWL for Phase C
- Use of Quiet PME

	PME	TM Ref. / BS no.	SWL/Unit, dB(A)	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17	Jan-18	Feb-18	Mar-18	Apr-18	May-18	Jun-18	Jul-18	Aug-18	Sep-18	Oct-18	Nov-18	Dec-18	Jan-19	Feb-19	Mar-19	Apr-19	May-19	Jun-19	Jul-19	Aug-19	Sep-19	Oct-19	Nov-19	Dec-19	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Jan-21	
	Site Formation and Excavation																																														
Site Formation and Excavation	Pneumatic breaker	D3/101	113	1	1	1	1																																								
	Excavator	Kato HD-512E	104	6	6	6	6																																								
	Dump Truck	Gross weight 5.5-38 ton*	105	4	4	4	4																																								
	Roller, vibratory	Komatsu SW750, 77kW	104	3	3	3	3																																								
	Bulldozer	Komatsu D21A-8	102	2	2	2	2																																							
	Generator, standard	Atlas Copco QAS 300	99	2	2	2	2																																							
	Substructure																																													
Substructure Work	Generator, standard	Atlas Copco QAS 300	99					5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5															
	Bar bender and cutter (electric)	CNP021	90					4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4															
	Concrete pump	D6/36	106					2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2															
	Concrete lorry mixer	D6/35	100					6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6															
	Lorry	D3/59	105					3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3															
	Crane, Mobile	Hitachi Sumitomo	101					2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2															
	Compactor, vibratory	CNP050	105					3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3															
	Crane, tower (electric)	CNP049	95					2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2															
	Poker, vibratory, hand-held (electric)	*	102					4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4															
	Superstructure																																													
Superstructure Work	Air Compressor, air flow Air flow ≤ 10 m3/min	CNP001	100														4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4											
	Bar bender and cutter (electric)	CNP021	90														3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3											
	Concrete lorry mixer	D6/35	100														5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5											
	Concrete pump	D6/36	106														5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5											
	Crane, tower (electric)	CNP049	95														2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2											
	Drill/ grinder, hand-held (electric)	CNP065	98														5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5											
	Excavator	Kato HD-512E	104														3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3											
	Generator, standard	Atlas Copco QAS 300	99														4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4											
	Lorry	D3/59	105														4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4											
	Poker, vibratory, hand-held	D6/40	98														6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6											
	Saw, circular, wood	D7/78	106														6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6											
	Water pump (electric)	CNP281	88														6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6											
	Water pump, submersible (electric)	CNP283	85														6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6											Maximum
			Total SWL of each month	**118**	**118**	**118**	**118**	**117**	**117**	**117**	**117**	**117**	**117**	**117**	**117**	**117**	**121**	**121**	**121**	**121**	**121**	**121**	**121**	**121**	**121**	**121**	**121**	**121**	**121**	**121**	**121**	**119**	**119**	**119**	**119**											121

* Reference: http://www.epd.gov.hk/epd/english/application_for_licences/guidance/files/OtherSWLe.pdf

Total SWL for Phase D
- Use of Quiet PME

	PME	TM Ref. / BS no.	SWL/Unit, dB(A)	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17	Jan-18	Feb-18	Mar-18	Apr-18	May-18	Jun-18	Jul-18	Aug-18	Sep-18	Oct-18	Nov-18	Dec-18	Jan-19	Feb-19	Mar-19	Apr-19	May-19	Jun-19	Jul-19	Aug-19	Sep-19	Oct-19	Nov-19	Dec-19	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Jan-21	
	Site Formation and Excavation																																													
Site Formation and Excavation	Pneumatic breaker	D3/101	113	1	1	1	1																																								
	Excavator	Kato HD-512E	104	6	6	6	6																																							
	Dump Truck	Gross weight 5.5-38 ton*	105	4	4	4	4																																							
	Roller, vibratory	Komatsu SW750, 77kW	104	3	3	3	3																																							
	Bulldozer	Komatsu D21A-8	102	2	2	2	2																																							
	Generator, standard	Atlas Copco QAS 300	99	2	2	2	2																																							
	Substructure																																													
Superstructure Work	Generator, standard	Atlas Copco QAS 300	99					5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5										
	Bar bender and cutter (electric)	CNP021	90					4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4										
	Concrete pump	D6/36	106					2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2										
	Concrete lorry mixer	D6/35	100					6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6										
	Lorry	D3/59	105					3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3										
	Crane, Mobile	Hitachi Sumitomo	101					2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2										
	Compactor, vibratory	CNP050	105					3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3										
	Crane, tower (electric)	CNP049	95					2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2										
	Poker, vibratory, hand-held (electric)	*	102					4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4										
	Superstructure																																													
Superstructure Work	Air Compressor, air flow Air flow ≤ 10 m3/min	CNP001	100																	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4							
	Bar bender and cutter (electric)	CNP021	90																	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3							
	Concrete lorry mixer	D6/35	100																	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5							
	Concrete pump	D6/36	106																	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5							
	Crane, tower (electric)	CNP049	95																	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2							
	Drill/ grinder, hand-held (electric)	CNP065	98																	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5							
	Excavator	Kato HD-512E	104																	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3							
	Generator, standard	Atlas Copco QAS 300	99																	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4							
	Lorry	D3/59	105																	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4							
	Poker, vibratory, hand-held	D6/40	98																	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6							
	Saw, circular, wood	D7/78	106																	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6							
	Water pump (electric)	CNP281	88																	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6							
	Water pump, submersible (electric)	CNP283	85																	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6							Maximum
			Total SWL of each month	**118**	**118**	**118**	**118**	**117**	**117**	**117**	**117**	**117**	**117**	**117**	**117**	**117**	**117**	**117**	**117**	**121**	**121**	**121**	**121**	**121**	**121**	**121**	**121**	**121**	**121**	**121**	**121**	**121**	**121**	**121**	**121**	**119**	**119**	**119**	**119**							**121**

* Reference: http://www.epd.gov.hk/epd/english/application_for_licences/guidance/files/OtherSWLe.pdf

Total SWL for Phase E
- Use of Quiet PME

	PME	TM Ref. / BS no.	SWL/Unit, dB(A)	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17	Jan-18	Feb-18	Mar-18	Apr-18	May-18	Jun-18	Jul-18	Aug-18	Sep-18	Oct-18	Nov-18	Dec-18	Jan-19	Feb-19	Mar-19	Apr-19	May-19	Jun-19	Jul-19	Aug-19	Sep-19	Oct-19	Nov-19	Dec-19	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Jan-21	
	Site Formation and Excavation																																														
Site Formation and Excavation	Pneumatic breaker	D3/101	113	1	1	1	1																																								
	Excavator	Kato HD-512E	104	6	6	6	6																																								
	Dump Truck	Gross weight 5.5-38 ton*	105	4	4	4	4																																								
	Roller, vibratory	Komatsu SW750, 77kW	104	3	3	3	3																																								
	Bulldozer	Komatsu D21A-8	102	2	2	2	2																																							
	Generator, standard	Atlas Copco QAS 300	99	2	2	2	2																																							
	Substructure																																													
Substructure Work	Generator, standard	Atlas Copco QAS 300	99					5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5									
	Bar bender and cutter (electric)	CNP021	90					4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4									
	Concrete pump	D6/36	106					2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2									
	Concrete lorry mixer	D6/35	100					6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6									
	Lorry	D3/59	105					3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3									
	Crane, Mobile	Hitachi Sumitomo	101					2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2									
	Compactor, vibratory	CNP050	105					3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3									
	Crane, tower (electric)	CNP049	95					2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2									
	Poker, vibratory, hand-held (electric)	*	102					4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4									
	Superstructure																																													
Superstructure Work	Air Compressor, air flow Air flow ≤ 10 m3/min	CNP001	100																				4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4		
	Bar bender and cutter (electric)	CNP021	90																				3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3		
	Concrete lorry mixer	D6/35	100																				5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5		
	Concrete pump	D6/36	106																				5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5		
	Crane, tower (electric)	CNP049	95																				2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2		
	Drill/ grinder, hand-held (electric)	CNP065	98																				5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5		
	Excavator	Kato HD-512E	104																				3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3		
	Generator, standard	Atlas Copco QAS 300	99																				4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4		
	Lorry	D3/59	105																				4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4		
	Poker, vibratory, hand-held	D6/40	98																				6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6		
	Saw, circular, wood	D7/78	106																				6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6		
	Water pump (electric)	CNP281	88																				6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6		
	Water pump, submersible (electric)	CNP283	85																				6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6		Maximum
			Total SWL of each month	**118**	**118**	**118**	**118**	**117**	**117**	**117**	**117**	**117**	**117**	**117**	**117**	**117**	**117**	**117**	**117**	**117**	**117**	**117**	**121**	**121**	**121**	**121**	**121**	**121**	**121**	**121**	**121**	**121**	**121**	**121**	**121**	**119**	**119**	**119**	**119**	**119**	**119**					121

* Reference: http://www.epd.gov.hk/epd/english/application_for_licences/guidance/files/OtherSWLe.pdf

Total SWL for Phase F
- Use of Quiet PME

	PME	TM Ref. / BS no.	SWL/Unit, dB(A)	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17	Jan-18	Feb-18	Mar-18	Apr-18	May-18	Jun-18	Jul-18	Aug-18	Sep-18	Oct-18	Nov-18	Dec-18	Jan-19	Feb-19	Mar-19	Apr-19	May-19	Jun-19	Jul-19	Aug-19	Sep-19	Oct-19	Nov-19	Dec-19	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Jan-21	
	Site Formation and Excavation																																														
Site Formation and Excavation	Pneumatic breaker	D3/101	113	1	1	1	1																																								
	Excavator	Kato HD-512E	104	6	6	6	6																																								
	Dump Truck	Gross weight 5.5-38 ton*	105	4	4	4	4																																								
	Roller, vibratory	Komatsu SW750, 77kW	104	3	3	3	3																																								
	Bulldozer	Komatsu D21A-8	102	2	2	2	2																																							
	Generator, standard	Atlas Copco QAS 300	99	2	2	2	2																																							
	Substructure																																													
Substructure Work	Generator, standard	Atlas Copco QAS 300	99					5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5					
	Bar bender and cutter (electric)	CNP021	90					4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4					
	Concrete pump	D6/36	106					2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2					
	Concrete lorry mixer	D6/35	100					6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6					
	Lorry	D3/59	105					3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3					
	Crane, Mobile	Hitachi Sumitomo	101					2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2					
	Compactor, vibratory	CNP050	105					3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3					
	Crane, tower (electric)	CNP049	95					2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2					
	Poker, vibratory, hand-held	D6/40	98					4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4					
	Superstructure																																													
Superstructure Work	Air Compressor, air flow Air flow ≤ 10 m3/min	CNP001	100																						4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	
	Bar bender and cutter (electric)	CNP021	90																						3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	
	Concrete lorry mixer	D6/35	100																						5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	
	Concrete pump	D6/36	106																						5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	
	Crane, tower (electric)	CNP049	95																						2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
	Drill/ grinder, hand-held (electric)	CNP065	98																						5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	
	Excavator	Kato HD-512E	104																						3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	
	Generator, standard	Atlas Copco QAS 300	99																						4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	
	Lorry	D3/59	105																						4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	
	Poker, vibratory, hand-held	D6/40	98																						6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	
	Saw, circular, wood	D7/78	106																						6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	
	Water pump (electric)	CNP281	88																						6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	
	Water pump, submersible (electric)	CNP283	85																						6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	Maximum
			Total SWL of each month	**118**	**118**	**118**	**118**	**116**	**116**	**116**	**116**	**116**	**116**	**116**	**116**	**116**	**116**	**116**	**116**	**116**	**116**	**116**	**116**	**116**	**121**	**121**	**121**	**121**	**121**	**121**	**121**	**121**	**121**	**121**	**121**	**121**	**121**	**121**	**121**	**121**	**121**	**119**	**119**	**119**	**119**	121

* Reference: http://www.epd.gov.hk/epd/english/application_for_licences/guidance/files/OtherSWLe.pdf

NSR: NSR1

Scenario 1

(Jun 2017 - Sep 2017)

Phase	[1]Max. SWL	Distance (m)	Distance Correction	[2]Barrier Effect	Façade Correction	SPL	
C	121	72	-45	-10	3	69	
D	121	236	-55	-10	3	59	
E	121	260	-56	-10	3	58	
F	121	588	-63	-10	3	51	
haul road	105	210		-10	3	44	
					WSW (max spl)	**70**	dB(A)

Scenario 2

(Oct 2017 - Feb 2020)

Phase	[1]Max. SWL	Distance (m)	Distance Correction	[2]Barrier Effect	Façade Correction	SPL	
C	121	72	-45	-10	3	69	
D	121	236	-55	-10	3	59	
E	121	260	-56	-10	3	58	
F	121	588	-63	-10	3	51	
haul road	105	210		-10	3	44	
					WSW (max spl)	**70**	dB(A)

Scenario 3

(Mar 2020 - Sep 2020)

Phase	[1]Max. SWL	Distance (m)	Distance Correction	[2]Barrier Effect	Façade Correction	SPL	
D	121	236	-55	-10	3	59	
E	121	260	-56	-10	3	58	
F	121	588	-63	-10	3	51	
haul road	105	210		-10	3	44	
					WSW (max spl)	**62**	dB(A)

Scenario 4

(Oct 2020 - Jan 2021)

Phase	[1]Max. SWL	Distance (m)	Distance Correction	[2]Barrier Effect	Façade Correction	SPL	
F	121	588	-63	-10	3	51	
haul road	105	210		-10	3	44	
					WSW (max spl)	**51**	dB(A)

Note:

(1) Reference to the maximum mitigated sound power level among all works activities.
(2) Barrier correction provided by temporary noise barrier installed around the site
(3) No cumulative impact associated with XRL is considered as major construction works have been completed.

Proposed Comprehensive Development at Wo Shang Wai, Yuen Long
Construction Noise Assessment
Appendix B2

NSR: NSR1a

Scenario 1

(Jun 2017 - Sep 2017)

Phase	[1]Max. SWL	Distance (m)	Distance Correction	[2]Barrier Effect	Façade Correction	SPL	
C	121	96	-48	-10	3	67	
D	121	300	-58	-10	3	57	
E	121	288	-57	-10	3	57	
F	121	576	-63	-10	3	51	
haul road	105	220		-10	3	43	
					WSW (max spl)	**67**	dB(A)

Scenario 2

(Oct 2017 - Feb 2020)

Phase	[1]Max. SWL	Distance (m)	Distance Correction	[2]Barrier Effect	Façade Correction	SPL	
C	121	96	-48	-10	3	67	
D	121	300	-58	-10	3	57	
E	121	288	-57	-10	3	57	
F	121	576	-63	-10	3	51	
haul road	105	220		-10	3	43	
					WSW (max spl)	**67**	dB(A)

Scenario 3

(Mar 2020 - Sep 2020)

Phase	[1]Max. SWL	Distance (m)	Distance Correction	[2]Barrier Effect	Façade Correction	SPL	
D	121	300	-58	-10	3	57	
E	121	288	-57	-10	3	57	
F	121	576	-63	-10	3	51	
haul road	105	220		-10	3	43	
					WSW (max spl)	**60**	dB(A)

Scenario 4

(Oct 2020 - Jan 2021)

Phase	[1]Max. SWL	Distance (m)	Distance Correction	[2]Barrier Effect	Façade Correction	SPL	
F	121	576	-63	-10	3	51	
haul road	105	220		-10	3	43	
					WSW (max spl)	**52**	dB(A)

Note:

(1) Reference to the maximum mitigated sound power level among all works activities.
(2) Barrier correction provided by temporary noise barrier installed around the site
(3) No cumulative impact associated with XRL is considered as major construction works have been completed.

NSR: NSR2

Scenario 1

(Jun 2017 - Sep 2017)

Phase	[1]Max. SWL	Distance (m)	Distance Correction	[2]Barrier Effect	Façade Correction	SPL	
C	121	84	-46	-10	3	68	
D	121	276	-57	-10	3	57	
E	121	272	-57	-10	3	57	
F	121	612	-64	-10	3	50	
haul road	105	215		-10	3	43	
					WSW (max spl)	**69**	dB(A)

Scenario 2

(Oct 2017 - Feb 2020)

Phase	[1]Max. SWL	Distance (m)	Distance Correction	[2]Barrier Effect	Façade Correction	SPL	
C	121	84	-46	-10	3	68	
D	121	276	-57	-10	3	57	
E	121	272	-57	-10	3	57	
F	121	612	-64	-10	3	50	
haul road	105	215		-10	3	43	
					WSW (max spl)	**69**	dB(A)

Scenario 3

(Mar 2020 - Sep 2020)

Phase	[1]Max. SWL	Distance (m)	Distance Correction	[2]Barrier Effect	Façade Correction	SPL	
D	121	276	-57	-10	3	57	
E	121	272	-57	-10	3	57	
F	121	612	-64	-10	3	50	
haul road	105	215		-10	3	43	
					WSW (max spl)	**61**	dB(A)

Scenario 4

(Oct 2020 - Jan 2021)

Phase	[1]Max. SWL	Distance (m)	Distance Correction	[2]Barrier Effect	Façade Correction	SPL	
F	121	612	-64	-10	3	50	
haul road	105	215		-10	3	43	
					WSW (max spl)	**51**	dB(A)

Note:

(1) Reference to the maximum mitigated sound power level among all works activities.
(2) Barrier correction provided by temporary noise barrier installed around the site
(3) No cumulative impact associated with XRL is considered as major construction works have been completed.

Proposed Comprehensive Development at Wo Shang Wai, Yuen Long
Construction Noise Assessment
Appendix B2

NSR: NSR3

Scenario 1

(Jun 2017 - Sep 2017)

Phase	[1]Max. SWL	Distance (m)	Distance Correction	[2]Barrier Effect	Façade Correction	SPL	
C	121	128	-50	-10	3	64	
D	121	296	-57	-10	3	57	
E	121	108	-49	-10	3	66	
F	121	440	-61	-10	3	53	
haul road	105	135		-10	3	45	
					WSW (max spl)	**68**	dB(A)

Scenario 2

(Oct 2017 - Feb 2020)

Phase	[1]Max. SWL	Distance (m)	Distance Correction	[2]Barrier Effect	Façade Correction	SPL	
C	121	128	-50	-10	3	64	
D	121	296	-57	-10	3	57	
E	121	108	-49	-10	3	66	
F	121	440	-61	-10	3	53	
haul road	105	135		-10	3	45	
					WSW (max spl)	**68**	dB(A)

Scenario 3

(Mar 2020 - Sep 2020)

Phase	[1]Max. SWL	Distance (m)	Distance Correction	[2]Barrier Effect	Façade Correction	SPL	
D	121	296	-57	-10	3	57	
E	121	108	-49	-10	3	66	
F	121	440	-61	-10	3	53	
haul road	105	135		-10	3	45	
					WSW (max spl)	**66**	dB(A)

Scenario 4

(Oct 2020 - Jan 2021)

Phase	[1]Max. SWL	Distance (m)	Distance Correction	[2]Barrier Effect	Façade Correction	SPL	
F	121	440	-61	-10	3	53	
haul road	105	135		-10	3	45	
					WSW (max spl)	**54**	dB(A)

Note:

(1) Reference to the maximum mitigated sound power level among all works activities.
(2) Barrier correction provided by temporary noise barrier installed around the site
(3) No cumulative impact associated with XRL is considered as major construction works have been completed.

NSR: NSR4

Scenario 1

(Jun 2017 - Sep 2017)

Phase	[1]Max. SWL	Distance (m)	Distance Correction	[2]Barrier Effect	Façade Correction	SPL	
C	121	172	-53	-10	3	61	
D	121	260	-56	-10	3	58	
E	121	64	-44	-10	3	70	
F	121	356	-59	-10	3	55	
haul road	105	168		-10	3	45	
					WSW (max spl)	**71**	dB(A)

Scenario 2

(Oct 2017 - Feb 2020)

Phase	[1]Max. SWL	Distance (m)	Distance Correction	[2]Barrier Effect	Façade Correction	SPL	
C	121	172	-53	-10	3	61	
D	121	260	-56	-10	3	58	
E	121	64	-44	-10	3	70	
F	121	356	-59	-10	3	55	
haul road	105	168		-10	3	45	
					WSW (max spl)	**71**	dB(A)

Scenario 3

(Mar 2020 - Sep 2020)

Phase	[1]Max. SWL	Distance (m)	Distance Correction	[2]Barrier Effect	Façade Correction	SPL	
D	121	260	-56	-10	3	58	
E	121	64	-44	-10	3	70	
F	121	356	-59	-10	3	55	
haul road	105	168		-10	3	45	
					WSW (max spl)	**70**	dB(A)

Scenario 4

(Oct 2020 - Jan 2021)

Phase	[1]Max. SWL	Distance (m)	Distance Correction	[2]Barrier Effect	Façade Correction	SPL	
F	121	356	-59	-10	3	55	
haul road	105	168		-10	3	45	
					WSW (max spl)	**55**	dB(A)

Note:

(1) Reference to the maximum mitigated sound power level among all works activities.
(2) Barrier correction provided by temporary noise barrier installed around the site
(3) No cumulative impact associated with XRL is considered as major construction works have been completed.

Proposed Comprehensive Development at Wo Shang Wai, Yuen Long
Construction Noise Assessment
Appendix B2

NSR: NSR4a

Scenario 1

(Jun 2017 - Sep 2017)

Phase	[1]Max. SWL	Distance (m)	Distance Correction	[2]Barrier Effect	Façade Correction	SPL	
C	121	284	-57	-10	3	57	
D	121	292	-57	-10	3	57	
E	121	72	-45	-10	3	69	
F	121	320	-58	-10	3	56	
haul road	105	275		-10	3	42	
					WSW (max spl)	**70**	dB(A)

Scenario 2

(Oct 2017 - Feb 2020)

Phase	[1]Max. SWL	Distance (m)	Distance Correction	[2]Barrier Effect	Façade Correction	SPL	
C	121	284	-57	-10	3	57	
D	121	292	-57	-10	3	57	
E	121	72	-45	-10	3	69	
F	121	320	-58	-10	3	56	
haul road	105	275		-10	3	42	
					WSW (max spl)	**70**	dB(A)

Scenario 3

(Mar 2020 - Sep 2020)

Phase	[1]Max. SWL	Distance (m)	Distance Correction	[2]Barrier Effect	Façade Correction	SPL	
D	121	292	-57	-10	3	57	
E	121	72	-45	-10	3	69	
F	121	320	-58	-10	3	56	
haul road	105	275		-10	3	42	
					WSW (max spl)	**70**	dB(A)

Scenario 4

(Oct 2020 - Jan 2021)

Phase	[1]Max. SWL	Distance (m)	Distance Correction	[2]Barrier Effect	Façade Correction	SPL	
F	121	320	-58	-10	3	56	
haul road	105	275		-10	3	42	
					WSW (max spl)	**56**	dB(A)

Note:

(1) Reference to the maximum mitigated sound power level among all works activities.
(2) Barrier correction provided by temporary noise barrier installed around the site
(3) No cumulative impact associated with XRL is considered as major construction works have been completed.

NSR: NSR4b

Scenario 1

(Jun 2017 - Sep 2017)

Phase	[1]Max. SWL	Distance (m)	Distance Correction	[2]Barrier Effect	Façade Correction	SPL	
C	121	100	-48	-10	3	66	
D	121	260	-56	-10	3	58	
E	121	68	-45	-10	3	70	
F	121	408	-60	-10	3	54	
haul road	105	118		-10	3	46	
					WSW (max spl)	**71**	dB(A)

Scenario 2

(Oct 2017 - Feb 2020)

Phase	[1]Max. SWL	Distance (m)	Distance Correction	[2]Barrier Effect	Façade Correction	SPL	
C	121	100	-48	-10	3	66	
D	121	260	-56	-10	3	58	
E	121	68	-45	-10	3	70	
F	121	408	-60	-10	3	54	
haul road	105	118		-10	3	46	
					WSW (max spl)	**71**	dB(A)

Scenario 3

(Mar 2020 - Sep 2020)

Phase	[1]Max. SWL	Distance (m)	Distance Correction	[2]Barrier Effect	Façade Correction	SPL	
D	121	260	-56	-10	3	58	
E	121	68	-45	-10	3	70	
F	121	408	-60	-10	3	54	
haul road	105	118		-10	3	46	
					WSW (max spl)	**70**	dB(A)

Scenario 4

(Oct 2020 - Jan 2021)

Phase	[1]Max. SWL	Distance (m)	Distance Correction	[2]Barrier Effect	Façade Correction	SPL	
F	121	408	-60	-10	3	54	
haul road	105	118		-10	3	46	
					WSW (max spl)	**55**	dB(A)

Note:

(1) Reference to the maximum mitigated sound power level among all works activities.
(2) Barrier correction provided by temporary noise barrier installed around the site
(3) No cumulative impact associated with XRL is considered as major construction works have been completed.

Proposed Comprehensive Development at Wo Shang Wai, Yuen Long
Construction Noise Assessment
Appendix B2

NSR: NSR5

Scenario 1

(Jun 2017 - Sep 2017)

Phase	[1]Max. SWL	Distance (m)	Distance Correction	[2]Barrier Effect	Façade Correction	SPL	
C	121	380	-60	-10	3	55	
D	121	68	-45	-10	3	70	
E	121	80	-46	-10	3	68	
F	121	60	-44	-10	3	70	
haul road	105	63		-10	3	49	
					WSW (max spl)	**74**	dB(A)

Scenario 2

(Oct 2017 - Feb 2020)

Phase	[1]Max. SWL	Distance (m)	Distance Correction	[2]Barrier Effect	Façade Correction	SPL	
C	121	380	-60	-10	3	55	
D	121	68	-45	-10	3	70	
E	121	80	-46	-10	3	68	
F	121	60	-44	-10	3	70	
haul road	105	63		-10	3	49	
					WSW (max spl)	**74**	dB(A)

Scenario 3

(Mar 2020 - Sep 2020)

Phase	[1]Max. SWL	Distance (m)	Distance Correction	[2]Barrier Effect	Façade Correction	SPL	
D	121	68	-45	-10	3	70	
E	121	80	-46	-10	3	68	
F	121	60	-44	-10	3	70	
haul road	105	63		-10	3	49	
					WSW (max spl)	**74**	dB(A)

Scenario 4

(Oct 2020 - Jan 2021)

Phase	[1]Max. SWL	Distance (m)	Distance Correction	[2]Barrier Effect	Façade Correction	SPL	
F	121	60	-44	-10	3	70	
haul road	105	63		-10	3	49	
					WSW (max spl)	**71**	dB(A)

Note:

(1) Reference to the maximum mitigated sound power level among all works activities.
(2) Barrier correction provided by temporary noise barrier installed around the site
(3) No cumulative impact associated with XRL is considered as major construction works have been completed.

NSR: NSR6

Scenario 1

(Jun 2017 - Sep 2017)

Phase	[1]Max. SWL	Distance (m)	Distance Correction	[2]Barrier Effect	Façade Correction	SPL	
C	121	368	-59	-10	3	55	
D	121	208	-54	-10	3	60	
E	121	80	-46	-10	3	68	
F	121	152	-52	-10	3	62	
haul road	105	148		-10	3	45	
					WSW (max spl)	**70**	dB(A)

Scenario 2

(Oct 2017 - Feb 2020)

Phase	[1]Max. SWL	Distance (m)	Distance Correction	[2]Barrier Effect	Façade Correction	SPL	
C	121	368	-59	-10	3	55	
D	121	208	-54	-10	3	60	
E	121	80	-46	-10	3	68	
F	121	152	-52	-10	3	62	
haul road	105	148		-10	3	45	
					WSW (max spl)	**70**	dB(A)

Scenario 3

(Mar 2020 - Sep 2020)

Phase	[1]Max. SWL	Distance (m)	Distance Correction	[2]Barrier Effect	Façade Correction	SPL	
D	121	208	-54	-10	3	60	
E	121	80	-46	-10	3	68	
F	121	152	-52	-10	3	62	
haul road	105	148		-10	3	45	
					WSW (max spl)	**70**	dB(A)

Scenario 4

(Oct 2020 - Jan 2021)

Phase	[1]Max. SWL	Distance (m)	Distance Correction	[2]Barrier Effect	Façade Correction	SPL	
F	121	152	-52	-10	3	62	
haul road	105	148		-10	3	45	
					WSW (max spl)	**62**	dB(A)

Note:

(1) Reference to the maximum mitigated sound power level among all works activities.
(2) Barrier correction provided by temporary noise barrier installed around the site
(3) No cumulative impact associated with XRL is considered as major construction works have been completed.

Proposed Comprehensive Development at Wo Shang Wai, Yuen Long
Construction Noise Assessment
Appendix B2

NSR: NSR7

Scenario 1

(Jun 2017 - Sep 2017)

Phase	[1]Max. SWL	Distance (m)	Distance Correction	[2]Barrier Effect	Façade Correction	SPL	
C	121	704	-65	0	3	59	
D	121	336	-59	0	3	66	
E	121	412	-60	-10	3	54	
F	121	208	-54	-10	3	60	
haul road	105	124		0	3	56	
					WSW (max spl)	**68**	dB(A)

Scenario 2

(Oct 2017 - Feb 2020)

Phase	[1]Max. SWL	Distance (m)	Distance Correction	[2]Barrier Effect	Façade Correction	SPL	
C	121	704	-65	0	3	59	
D	121	336	-59	0	3	66	
E	121	412	-60	-10	3	54	
F	121	208	-54	0	3	70	
haul road	105	124		0	3	56	
					WSW (max spl)	**72**	dB(A)

Scenario 3

(Mar 2020 - Sep 2020)

Phase	[1]Max. SWL	Distance (m)	Distance Correction	[2]Barrier Effect	Façade Correction	SPL	
D	121	336	-59	0	3	66	
E	121	412	-60	0	3	64	
F	121	208	-54	0	3	70	
haul road	105	124		0	3	56	
					WSW (max spl)	**72**	dB(A)

Scenario 4

(Oct 2020 - Jan 2021)

Phase	[1]Max. SWL	Distance (m)	Distance Correction	[2]Barrier Effect	Façade Correction	SPL	
F	121	208	-54	0	3	70	
haul road	105	124		0	3	56	
					WSW (max spl)	**70**	dB(A)

Note:

(1) Reference to the maximum mitigated sound power level among all works activities.
(2) Barrier correction provided by temporary noise barrier installed around the site
(3) No cumulative impact associated with XRL is considered as major construction works have been completed.

NSR: NSR8

Scenario 1

(Jun 2017 - Sep 2017)

Phase	[1]Max. SWL	Distance (m)	Distance Correction	[2]Barrier Effect	Façade Correction	SPL	
C	121	784	-66	-10	3	48	
D	121	496	-62	-10	3	52	
E	121	496	-62	-10	3	52	
F	121	260	-56	-10	3	58	
haul road	105	144		0	3	55	
					WSW (max spl)	**61**	dB(A)

Scenario 2

(Oct 2017 - Feb 2020)

Phase	[1]Max. SWL	Distance (m)	Distance Correction	[2]Barrier Effect	Façade Correction	SPL	
C	121	784	-66	-10	3	48	
D	121	496	-62	-10	3	52	
E	121	496	-62	-10	3	52	
F	121	260	-56	-10	3	58	
haul road	105	144		0	3	55	
					WSW (max spl)	**61**	dB(A)

Scenario 3

(Mar 2020 - Sep 2020)

Phase	[1]Max. SWL	Distance (m)	Distance Correction	[2]Barrier Effect	Façade Correction	SPL	
D	121	496	-62	-10	3	52	
E	121	496	-62	-10	3	52	
F	121	260	-56	-10	3	58	
haul road	105	144		0	3	55	
					WSW (max spl)	**61**	dB(A)

Scenario 4

(Oct 2020 - Jan 2021)

Phase	[1]Max. SWL	Distance (m)	Distance Correction	[2]Barrier Effect	Façade Correction	SPL	
F	121	260	-56	-10	3	58	
haul road	105	144		0	3	55	
					WSW (max spl)	**60**	dB(A)

Note:

(1) Reference to the maximum mitigated sound power level among all works activities.
(2) Barrier correction provided by temporary noise barrier installed around the site
(3) No cumulative impact associated with XRL is considered as major construction works have been completed.

Proposed Comprehensive Development at Wo Shang Wai, Yuen Long
Construction Noise Assessment
Appendix B2

NSR: NSR9

Scenario 1

(Jun 2017 - Sep 2017)

Phase	[1]Max. SWL	Distance (m)	Distance Correction	[2]Barrier Effect	Façade Correction	SPL	
C	121	240	-56	-10	3	59	
D	121	356	-59	-10	3	55	
E	121	156	-52	-10	3	62	
F	121	438	-61	-10	3	53	
haul road	105	240		-10	3	43	
					WSW (max spl)	**65**	dB(A)

Scenario 2

(Oct 2017 - Feb 2020)

Phase	[1]Max. SWL	Distance (m)	Distance Correction	[2]Barrier Effect	Façade Correction	SPL	
C	121	240	-56	-10	3	59	
D	121	356	-59	-10	3	55	
E	121	156	-52	-10	3	62	
F	121	438	-61	-10	3	53	
haul road	105	240		-10	3	43	
					WSW (max spl)	**65**	dB(A)

Scenario 3

(Mar 2020 - Sep 2020)

Phase	[1]Max. SWL	Distance (m)	Distance Correction	[2]Barrier Effect	Façade Correction	SPL	
D	121	356	-59	-10	3	55	
E	121	156	-52	-10	3	62	
F	121	438	-61	-10	3	53	
haul road	105	240		-10	3	43	
					WSW (max spl)	**64**	dB(A)

Scenario 4

(Oct 2020 - Jan 2021)

Phase	[1]Max. SWL	Distance (m)	Distance Correction	[2]Barrier Effect	Façade Correction	SPL	
F	121	438	-61	-10	3	53	
haul road	105	240		-10	3	43	
					WSW (max spl)	**54**	dB(A)

Note:

(1) Reference to the maximum mitigated sound power level among all works activities.
(2) Barrier correction provided by temporary noise barrier installed around the site
(3) No cumulative impact associated with XRL is considered as major construction works have been completed.

NSR: Revised NSR10

Scenario 1

(Jun 2017 - Sep 2017)

Phase	[1]Max. SWL	Distance (m)	Distance Correction	[2]Barrier Effect	Façade Correction	SPL	
C	121	656	-64	-10	3	50	
D	121	316	-58	-10	3	56	
E	121	364	-59	-10	3	55	
F	121	164	-52	-10	3	62	
haul road	105	14		0	3	65	
					WSW (max spl)	**68**	dB(A)

Scenario 2

(Oct 2017 - Feb 2020)

Phase	[1]Max. SWL	Distance (m)	Distance Correction	[2]Barrier Effect	Façade Correction	SPL	
C	121	656	-64	-10	3	50	
D	121	316	-58	-10	3	56	
E	121	364	-59	-10	3	55	
F	121	164	-52	-10	3	62	
haul road	105	14		0	3	65	
					WSW (max spl)	**68**	dB(A)

Scenario 3

(Mar 2020 - Sep 2020)

Phase	[1]Max. SWL	Distance (m)	Distance Correction	[2]Barrier Effect	Façade Correction	SPL	
D	121	316	-58	-10	3	56	
E	121	364	-59	-10	3	55	
F	121	164	-52	-10	3	62	
haul road	105	14		0	3	65	
					WSW (max spl)	**68**	dB(A)

Scenario 4

(Oct 2020 - Jan 2021)

Phase	[1]Max. SWL	Distance (m)	Distance Correction	[2]Barrier Effect	Façade Correction	SPL	
F	121	164	-52	-10	3	62	
haul road	105	14		0	3	65	
					WSW (max spl)	**67**	dB(A)

Note:

(1) Reference to the maximum mitigated sound power level among all works activities.
(2) Barrier correction provided by temporary noise barrier installed around the site.
(3) No cumulative impact associated with XRL is considered as major construction works have been completed.

Appendix 4.3
Fixed Noise Sources Impact Assessment

Day-time and Evening Periods

Fixed Noise Sources Impact Assessment

NSR ID	Plant Inventory	Source ID	Maximum SWL, dB(A)	Horizontal Distance (m)	Distance Attenuation dB(A)	Tonality Correction dB(A)	Screening Correction dB(A)[2]	Facade Correction dB(A)	Barrier Correction dB(A)[3]	SPL, $L_{eq(30min)}$, dB(A)	Resultant SPL, $L_{eq(30min)}$, dB(A)	Day-time & Evening Noise Criteria, dB(A)
NSR 8	Project STP	PSTP[4]	92	34	-39	0	-10	3	0	46		
	Existing STP	ESTP	73	301	-58	0	-10	3	0	8		
	Mai Po Ventilation Building[1]	North Elevation 1 (VS1)	77	154	-52	0	-10	3	0	18		
		North Elevation 2 (VS2)	77	169	-53	0	-10	3	0	17		
		East Elevation 1 (VS3)	84	179	-53	0	-10	3	0	24		
		East Elevation 2 (VS4)	84	181	-53	0	-10	3	0	24		
		South Elevation 1 (VS5)	89	156	-52	0	-10	3	0	30		
		South Elevation 2 (VS6)	89	165	-52	0	-10	3	0	30		
		South Elevation 3 (VS7)	89	176	-53	0	-10	3	0	29		
		West Elevation 1 (VS8)	79	146	-51	0	-10	3	0	21		
		West Elevation 2 (VS9)	79	148	-51	0	-10	3	0	21	47	51
NSR 9	Project STP	PSTP[4]	92	59	-43	0	-10	3	0	42		
	Existing STP	ESTP	73	328	-58	0	-10	3	0	8		
	Mai Po Ventilation Building[1]	North Elevation 1 (VS1)	77	140	-51	0	-10	3	0	19		
		North Elevation 2 (VS2)	77	154	-52	0	-10	3	0	18		
		East Elevation 1 (VS3)	84	164	-52	0	-10	3	0	25		
		East Elevation 2 (VS4)	84	167	-52	0	-10	3	0	25		
		South Elevation 1 (VS5)	89	145	-51	0	-10	3	0	31		
		South Elevation 2 (VS6)	89	153	-52	0	-10	3	0	30		
		South Elevation 3 (VS7)	89	163	-52	0	-10	3	0	30		
		West Elevation 1 (VS8)	79	133	-51	0	-10	3	0	21		
		West Elevation 2 (VS9)	79	137	-51	0	-10	3	0	21	43	51
NSR 10	Project STP	PSTP[4]	92	61	-44	0	0	3	0	51		
	Existing STP	ESTP	73	363	-59	0	-10	3	0	7		
	Mai Po Ventilation Building[1]	North Elevation 1 (VS1)	77	245	-56	0	-10	3	0	14		
		North Elevation 2 (VS2)	77	259	-56	0	-10	3	0	14		
		East Elevation 1 (VS3)	84	268	-57	0	-10	3	0	20		
		East Elevation 2 (VS4)	84	271	-57	0	-10	3	0	20		
		South Elevation 1 (VS5)	89	247	-56	0	-10	3	0	26		
		South Elevation 2 (VS6)	89	256	-56	0	-10	3	0	26		
		South Elevation 3 (VS7)	89	267	-57	0	-10	3	0	25		
		West Elevation 1 (VS8)	79	237	-55	0	-10	3	0	17		
		West Elevation 2 (VS9)	79	240	-56	0	-10	3	0	16	51	51

Note: (1) Maximum SWL is referenced from information provided by MTRC.
(2) -10 dB(A) screening correction is applied if the source has no line of sight from the sensitive façade, -5 dB(A) screening correction is applied if the source is directly adjcent to the sensitive building but has no line of sight from the sensitive façade.
(3) -10 dB(A) screening correction is applied if the source is completely blocked by noise barrier
(4) There is only one louver opening on the western facade of PSTP

Night-time Period

Fixed Noise Sources Impact Assessment

NSR ID	Plant Inventory	Source ID	Maximum SWL, dB(A)	Horizontal Distance (m)	Distance Attenuation dB(A)	Tonality Correction dB(A)	Screening Correction dB(A)[2]	Facade Correction dB(A)	Barrier Correction dB(A)[3]	SPL, $L_{eq(30min)}$, dB(A)	Resultant SPL, $L_{eq(30min)}$, dB(A)	Night-time Noise Criteria, dB(A)
NSR 8	Project STP	PSTP[4]	86	34	-39	0	-10	3	0	40		
	Existing STP	ESTP	73	301	-58	0	-10	3	0	8		
	Mai Po Ventilation Building[1]	North Elevation 1 (VS1)	75	154	-52	0	-10	3	0	16		
		North Elevation 2 (VS2)	75	169	-53	0	-10	3	0	15		
		East Elevation 1 (VS3)	78	179	-53	0	-10	3	0	18		
		East Elevation 2 (VS4)	78	181	-53	0	-10	3	0	18		
		South Elevation 1 (VS5)	84	156	-52	0	-10	3	0	25		
		South Elevation 2 (VS6)	84	165	-52	0	-10	3	0	25		
		South Elevation 3 (VS7)	84	176	-53	0	-10	3	0	24		
		West Elevation 1 (VS8)	75	146	-51	0	-10	3	0	17		
		West Elevation 2 (VS9)	75	148	-51	0	-10	3	0	17	41	45
NSR 9	Project STP	PSTP[4]	86	59	-43	0	-10	3	0	36		
	Existing STP	ESTP	73	328	-58	0	-10	3	0	8		
	Mai Po Ventilation Building[1]	North Elevation 1 (VS1)	75	140	-51	0	-10	3	0	17		
		North Elevation 2 (VS2)	75	154	-52	0	-10	3	0	16		
		East Elevation 1 (VS3)	78	164	-52	0	-10	3	0	19		
		East Elevation 2 (VS4)	78	167	-52	0	-10	3	0	19		
		South Elevation 1 (VS5)	84	145	-51	0	-10	3	0	26		
		South Elevation 2 (VS6)	84	153	-52	0	-10	3	0	25		
		South Elevation 3 (VS7)	84	163	-52	0	-10	3	0	25		
		West Elevation 1 (VS8)	75	133	-51	0	-10	3	0	17		
		West Elevation 2 (VS9)	75	137	-51	0	-10	3	0	17	37	45
NSR 10	Project STP	PSTP[4]	86	61	-44	0	0	3	0	45		
	Existing STP	ESTP	73	363	-59	0	-10	3	0	7		
	Mai Po Ventilation Building[1]	North Elevation 1 (VS1)	75	245	-56	0	-10	3	0	12		
		North Elevation 2 (VS2)	75	259	-56	0	-10	3	0	12		
		East Elevation 1 (VS3)	78	268	-57	0	-10	3	0	14		
		East Elevation 2 (VS4)	78	271	-57	0	-10	3	0	14		
		South Elevation 1 (VS5)	84	247	-56	0	-10	3	0	21		
		South Elevation 2 (VS6)	84	256	-56	0	-10	3	0	21		
		South Elevation 3 (VS7)	84	267	-57	0	-10	3	0	20		
		West Elevation 1 (VS8)	75	237	-55	0	-10	3	0	13		
		West Elevation 2 (VS9)	75	240	-56	0	-10	3	0	12	45	45

Note: (1) Maximum SWL is referenced from information provided by MTRC.
(2) -10 dB(A) screening correction is applied if the source has no line of sight from the sensitive façade, -5 dB(A) screening correction is applied if the source is directly adjcent to the sensitive building but has no line of sight from the sensitive façade.
(3) -10 dB(A) screening correction is applied if the source is completely blocked by noise barrier
(4) There is only one louver opening on the western facade of PSTP

Appendix 5.1
Calculations of Sewage Loads

Appendix 5.1 – Calculations for Sewage Loads

The sewage discharge from the proposed residential development comprises of flow contribution from residential population, the security staff, club house and the management staff. No restaurants or catering facilities would be provided in the club house or other areas within the proposed development. The accumulative average dry weather flows of proposed development are estimated based on the *Guidelines for Estimating Sewage Flows for Sewage Infrastructure Planning* published by EPD and shown in **Table 1**

Table 1 - Flow Projection for the WSW Development

	Units	Resident	Staff	Pool (2)	Total
Design Population	head	1200	45	-	1245
Unit Flow Factor (1)	m^3/head/d	0.37	0.28	-	-
Design Average Dry Weather Flow (ADWF)	m^3/d	444	13	25	482
Design Peak Flow (3)	m^3/d	2664	78	25	2767
	l/s	30.83	0.90	0.29	32.03

Note:
(1) The unit flow factors for the resident and staff are extracted from Guidelines for Estimating Sewage Flows for Sewage Infrastructure Planning. The unit flow factor for commercial activities type J11, community, social & personal services is adopted for estimating the flow generated by the staff.
*(2) The sewage flow generated from the pools in clubhouse and individual houses is estimated to be 25m^3/day. Details for the estimation of sewage flow from pools are presented in **Annex B** of **Appendix 2.1**.*
(3) Peak factor P=6 is adopted for the determination of peak flow as the population is within 1000 – 5000.

For estimating the peak flows of the proposed sewerage system, design peaking factors, including stormwater allowance, as stipulated in Table T-5 of Guideline for Estimating Sewage Flows (GESF) is adopted. The estimated peak flow will be adopted for the design of the proposed sewers within the WSW Development. The design peak flow of the WSW Development is 32 l/s.

Appendix 5.2
Calculations of Reclaimed Water Demand

Appendix 5.2 – Calculations for Reclaimed Water Demand

The estimation of reclaimed water demand for toilet flushing is shown in **Table 1**

Table 1 – Estimation of Reclaimed Water Demand for Toilet Flushing

	Units	Resident	Staff
Design Population	head	1200	45
Unit Flow Factor (1)	m^3/head/d	0.063	0.05
Average Daily Demand	m^3/d	78	

Note:
(1) The quantity of toilet flushing is estimated according to Appendix III of Guidelines for Estimating Sewage Flows for Sewage Infrastructure Planning

The estimation of reclaimed water demand for landscape irrigation is shown in **Table 2**

Table 2 – Estimation of Reclaimed Water Demand for Landscape Irrigation(1)

	Units	Communal Open Space's Landscape	Communal Landscape & Perimeter Landscape	Communal Streetside Landscape	Private Garden	Total
Area	m^2	11,681	7,500	2,000	29,669(2)	-
Irrigation Rate	l/m^2/d	10(3)				-
Average Daily Demand	m^3/d	117	75	20	297	509

Note:
(1) Figures in the table are approximate and subject to detailed design. The Deed of Mutual Covenant (DMC) will stipulate the minimum requirement of landscape area (50,850m^2) adopting reclaimed water for irrigation in the development, which is one of the design parameters of the Planning Submission. The DMC Manager shall manage and maintain the common landscape area while he/she shall also manage the private gardens by house rules to ensure the minimum landscape areas are provided. Should there be any intention of modification or removal of landscape area or irrigation system inside the private garden by future private house owners, prior approval should be obtained from the DMC Manager.
In addition, a pre-set semi-automatic control irrigation system with underground drip pipes would be installed in the private garden and managed by DMC manager to ensure that reclaimed water would be used up for irrigation. Should there be any intention of modification or removal of landscape area or irrigation system inside the private garden by future private house owners, prior approval should be obtained from the DMC Manager.
(2) The overall landscape coverage in private garden (29,669m^2) is about 50% of the total private garden area (59,337m^2).
(3) An average irrigation rate of 10 l/m^2/d is assumed with reference to the irrigation rate adopted in the approved Water Supply Impact Assessment of the project "CE35/2006 (CE) - Kai Tak Engineering Study cum Design and Construction of Advance Works – Investigation, Design and Construction".
The irrigation rate is an average rate with allowance for rainy days, and an average water demand of 10 l/m^2/d would be required under the detailed landscaping design.
Reference has also made to the approved EIA report of the project "Sludge Treatment Facilities" (EIA-155/2008), which estimated reclaimed water demand for the landscaping area based on a daily consumption rate of 12 l/m^2/d. As such, the adopted average irrigation rate is considered conservative for the purpose of estimation of irrigation water demand for the proposed Development. Additionally, the excessive reclaimed water, if any, will also be reused for irrigation of vertical green to be proposed under detailed landscape design.

Appendix 6.1
Remediation Report

本署檔號 OUR REF: (12) in Annex (3) to EP2/N6/P/105
來函檔號 YOUR REF:
電話 TEL. NO.:
圖文傳真 FAX NO.: 2835 1843
電子郵件 E-MAIL: 2591 0558
網址 HOMEPAGE: http://www.epd.gov.hk
tomtam@epd.gov.hk

Environmental Protection Department
Branch Office
28th Floor, Southorn Centre,
130 Hennessy Road,
Wan Chai, Hong Kong.

環境保護署分處
香港灣仔
軒尼詩道
一百三十號
修頓中心廿八樓

12 March 2012
(Fax No: 2827 1823)

Mot MacDonald Hong Kong Limited
20/F, Two Landmark East
100, How Ming Street
Kwun Tong, Kowloon

Attn.: Dr Anne F KERR

Dear Dr Kerr,

Proposed Comprehensive Development at Wo Shang Wai, Yuen Long
Condition 3.14 of Environmental Permit, EP-311/2008/B
Submission of Remediation Report (RR)

I refer to your letter dated 27 January 2012 enclosing the subject report for our record.

I understand that the subject submission is required as per the recommendations of the Contamination Assessment Report and Remediation Assessment Plan approved under Condition 3.14 of the relevant Environmental Permit (EP-311/2008/B). The RR was also prepared and approved by the Environmental Team Leader, Mott MacDonald Hong Kong Ltd, and verified by the Independent Environmental Checker, Environ Hong Kong Ltd. We consider the submission technically in order.

Please be reminded that no development works shall be carried out at the site prior to the full and proper implementation of the required decontamination works at the relevant site(s). Should you have any enquiry, please contact the undersigned.

Yours faithfully,

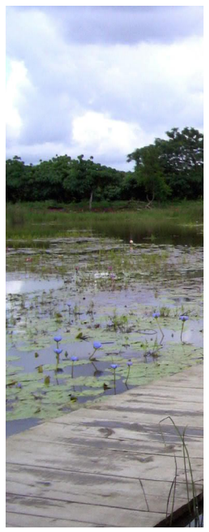
(Tom T H TAM)
Senior Environmental Protection Officer
for Director of Environmental Protection

c.c. Henderson Land Development Co. Ltd. (Attn: Ms Vicky CHUNG) Fax No: 2521 7913)

Internal
E(SA)33

[20120309.001]





Proposed Comprehensive Development at Wo Shang Wai, Yuen Long

Remediation Report (RR)

January 2012

Profit Point Enterprises Limited

Mott MacDonald

Proposed Comprehensive Development at Wo Shang Wai, Yuen Long

Remediation Report (RR)

January 2012

Profit Point Enterprises Limited

75/F, Two International Finance Centre, 8 Finance Street, Central, Hong Kong.

Mott MacDonald, 20/F Two Landmark East, 100 How Ming Street, Kwun Tong, Kowloon, Hong Kong
T +852 2828 5757 F +852 2827 1823, W www.mottmac.com

Mott MacDonald

Pursuant to Condition 3.14 of Environmental Permit No. EP-311/2008/B, this Remediation Report (RR) has been reviewed, certified and verified by the following EM&A members as Conforming to the Information and Recommendations contained in the EIA Report.

Certified by: Florence Yuen

Florence Yuen
Environmental Team (ET) Leader
Mott MacDonald Hong Kong Limited

Verified by: _____

David Yeung
Independent Environmental Checker (IEC)
Environ Hong Kong Limited

Date 26 January 2012

Content

Tables

List of Figures

List of Appendices

1. Introduction

1.1 Background

In March 2005, the Project Proponent, **Profit Point Enterprises Limited**, acquired a development site in Wo Shang Wai, Yuen Long, as shown in **Figure 1.1**, The Project involves a comprehensive residential development with a wetland restoration area. The residential units will have a maximum height of 4 storeys including car park. The layout of the development is currently being designed.

The Project site occupies about 20.7 ha site area. To the immediate south and west of the site there are existing residential developments (Royal Palms, Palm Springs and Wo Shang Wai village). Open storage exists to the immediate northeast with fishponds to the northwest and village development to the east of the Site.

An Environmental Impact Assessment (EIA) had been undertaken for the proposed comprehensive development in Wo Shang Wai, Yuen Long (hereinafter referred to "the Project"),under the EIA Ordinance (EIAO). The corresponding EIA report was approved by Environmental Protection Department (EPD) in July 2008 (Register No. AEIAR-120/2008) and an Environmental Permit (EP) No. EP-311/2008 was granted by the Director of Environmental Protection (DEP) on 9 September 2008. The EP was subsequently amended under application for Variation of Environmental Permit (VEP) and was replaced by EP-311/2008/A on 23 February 2010 and EP-311/2008/B on 29 July 2010.

As part of the EIA study, a Contamination Assessment Plan (CAP) was prepared by Mott MacDonald Hong Kong Limited (formerly known as Mott Connell Limited) and was endorsed by EPD in March 2006 (hereinafter referred as the endorsed CAP). Subsequent Ground Investigation (GI) works were carried out in 2006 in accordance with the endorsed CAP and the results were presented in the approved EIA report.

As the historical use of Dutch B levels of Netherlands is considered not entirely appropriate for the use in Hong Kong, a set of Hong Kong locally-derived contaminated land assessment standards, Risk Based Remediation Goals (RBRGs), based on risk-based approach has been introduced by EPD for land contamination assessment since August 2007 to replace Dutch B levels.

An updated CAP covering the whole WSW development was prepared in December 2009 incorporating the new land contamination assessment criteria (RBRGs) on the previous site investigation carried out during WSW EIA Study stage. Based on the field investigation results of fifteen boreholes (BH-LC1 to BH-LC15), it was noticed that there are certain hotspots within the Project Area which have the level of heavy metal (Lead) exceeds the respective RBRGs "Rural Residential" criteria (i.e. 275mg/kg at 1.25mbgl for BH-LC9 and 306mg/kg at 1.5mbgl for BH-LC14). The location is shown in **Figure 1.2**. Soil remediation and excavation of contaminated soil are therefore proposed for treating soils contaminated with heavy metals.

Pursuant to the EP Condition 3.14, a Contaminated Assessment Report (CAR) and Remediation Action Plan (RAP) shall be prepared and submitted to EPD for agreement. The combined CAR/RAP was submitted to EPD on 16 March 2010 supported with further site investigation fieldworks and soil sampling in November 2009 to review the extent of soil contamination at the two hotspots. The CAR/RAP was endorsed by EPD on 26 April 2010, and land remediation was arranged accordingly to the approved CAR/RAP. Based on the Approved CAR/RAP, excavation of contaminated soil at BH-LC9 and BH-LC14 is required at specified depths below ground level for cement solidification.

Proposed Comprehensive Development
at Wo Shang Wai, Yuen Long
Remediation Report (Rev. A)

Mott MacDonald Hong Kong Ltd. ("MMHK") has been commissioned by Profit Point Enterprises Limited as the Decontamination Specialist to supervise the excavation, soil confirmatory sampling works, pilot testing for cement solidification and remediation works in accordance with the approved CAR/RAP, and to prepare this Remediation Report (RR).

1.2 Objectives

The main objectives of the Remediation Report include:

- To confirm the extent of contamination based on the findings of excavation works conducted on site;
- To summarize the findings of soil confirmatory sampling (including fieldworks and laboratory analyses);
- To demonstrate the completion of the remediation works; and
- To submit this RR for EPD approval.

221005/ENL/ENL/AB11/A Jan 2012
P:\Hong Kong\ENL\PROJECTS\221005 Wo Shang Wai_Additional\Land Contamination\Land Contamination Assessment _2009\Remediation Report\Remediation Report Rev A.doc

2. Estimated Extent and Quantity of Soil Contamination

According to the Approved CAR/RAP, heavy metals concentration which has exceeded the respective RBRGs for "Rural Residential" criteria are found in boreholes BH-LC9 and BH-LC14 at 1.25mbgl and 1.50mbgl. It was proposed a section of bulk excavation of soil with radius 10m and 0.75m vertical depth above and below the sampling point be considered as contaminated. Based on the proposal, an estimated volume of 771.5m^3 were excavated for soil remediation.

The estimated quantity of contaminated soil which requires soil remediation is shown in **Table 2.1**.

Table 2.1: Illustration of Excavation

Borehole	Layer	Excavation Extent	Excavation Thickness, m	Corresponding Volume, m^3
BH-LC9	1.25	0.5 – 2.0 m	1.5	471.3
BH-LC14*	1.50	0.75 – 2.25 m	1.5	300.2
			Total	**771.5**

* BH-LC14 is located close to the site boundary. The corresponding volume is therefore estimated to be less than 471 m^3.

3. Confirmatory Testing

In accordance with Section 4.3.1 of the Approved CAR/RAP, confirmatory sampling is required to determine if excavation is being adequately carried out and all contaminated soil has been removed. Subsequent to the excavation of contaminated soil, two soil samples from each of the four sides as well as bottom of the excavation zone for both BH-LC9 and BH-LC14 were taken for the analysis of Lead (Pb) by ALS Technichem (HK) Pty Ltd., a Hong Kong Laboratory Accreditation Scheme (HOKLAS) laboratory (details of sampling locations and photo records are shown in **Figure 3.1** and **Appendix A**). All analytical results of soil samples have shown no exceedance of the respective RBRG "Rural Residential" criteria (**Appendix B**).

Based on the analytical results, all soil samples have Lead content not exceeding the relevant RBRGs for Lead (255 mg/kg). Therefore, it is certain that the excavation of contaminated soil, i.e. clean-up is adequately carried out and no further land contamination is evidenced. The contamination zones are therefore limited to the extent that has been documented in the Approved CAR/RAP and no migration of contaminants is therefore suggested.

4. Soil Remediation

4.1 Remediation Goal

Following the excavation of contaminated soil from the two respective hotspots (i.e. BH-LC9 and BH-LC14), excavated materials have been treated with cement solidification and will be reused on site as recommended in the Approved CAR/RAP.

4.2 Pilot Testing

According to the Remediation Action Plan (RAP), the contaminated soil should be treated by the cement stabilization/solidification technology before they can be reused for backfilling on site. A trial mixing for cement solidification has been undertaken in August 2010 as part of the land contamination remediation study to determine the most desirable soil/cement mix with a minimum Unconfined Compressive Strength (UCS) of 1.03 N/m² (150 psi or 1034 kPa). The pilot test for determination of soil/cement mixing ratio was conducted by the PolyU Technology and Consultancy Co. Ltd. and laboratory testing for Toxicity Characteristic Leaching Procedure (TCLP) for lead was undertaken by the HOKLAS laboratory – ALS Technichem (HK) Pty Ltd., both are the sub-consultant of MMHK for the land contamination remediation study. **Tables 4.1** and **4.2** summarised the soil/cement mixing ratio and pilot testing results. The laboratory testing results for TCLP is shown in **Appendix C**.

Table 4.1: Soil/Cement Mixing Ratio and Moisture Content for Pilot Testing Sampling

Notation	Soil	Cement (%)	Total water* (%)
C-05	1	5	18
C-10	1	10	18

Note: Appropriate adjustments of cement dosage may be necessary if the moisture content of the soil deviates significantly from the above value.

Table 4.2: Summary Table for Pilot Testing Results

Notation	Density (kg/m³)		Unconfined Compressive Strength (UCS) (MPa) Universal Treatment Standard (>1.03 MPa)		TCLP for Lead (mg/L) Universal Treatment Standard (<0.75 mg/L)	
	Individual	Mean	Individual	Mean	Individual	Mean
C-05-1	2072	2068	2.08	2.05	<0.5	<0.5
C-05-2	2073		2.19		<0.5	
C-05-3	2058		1.88		<0.5	
C-10-1	2104	2099	4.83	4.84	<0.5	<0.5
C-10-2	2089		4.66		<0.5	
C-10-3	2103		5.02		<0.5	

Notes: UCS was conducted following USEPA guideline for hazardous waste solidification; TCLP was conducted following USEPA 1331

The trial mixing, UCS testing and TCLP testing for lead showed that a dosage of 5% cement (by weight of soil) is sufficient to enable the heavy metal (lead) stabilized in the contaminated soil and comply with the stipulated treatment standards.

Proposed Comprehensive Development
at Wo Shang Wai, Yuen Long
Remediation Report (Rev. A)

Based on the above findings, the following method statement for on-site treatment was proposed:

- Allow sufficient paved areas for placing concrete mixing plants and other necessary equipment;
- Allow sufficient paved area for temporary storage of the treated soil.
- Use excavators or other appropriate plants to loosen the contaminated soil.
- Pass the loosen soil through a 35 mm sieve.
- Determine the moisture content.
- Mix thoroughly the sieved soil with 5% Ordinary Portland cement (Green Island or equivalent) by weight of soil and added water if needed by an appropriate means. (Additional cement or water would be required if the moisture content is outside the range of 15-20%).
- Prepare appropriate number of concrete cubes (150 mm) for compressive strength testing after mixing (three number of test for every 100m³ of treated soil). Demould after 1 day and place the cubes in a water curing tank. Transfer the cubes for UCS testing at 7th day.
- Place the treated soil at the temporary storage paved area (covered by appropriate materials to prevent uptake and loss of moisture) prior to the confirmation of laboratory testing result.

4.3 Remediation Works Summary

After the completion of pilot testing, the approximate volume of soil requiring for remediation is estimated to be 1,000 m³. Cement solidification works was carried out in October and November 2011 following the method statement proposed in the pilot testing study and under the supervision of the Land Decontamination Specialist. The photographic records of the soil remediation process are documented in **Appendix D**.

A total of 30 samples were obtained from 1,000 m³ treated soil for the subsequent UCS and TCLP testing in accordance with the approved CAR/RAP for confirmation of the clean-up of contaminated soil is meeting the assessment criteria. The UCS and TCLP testing were undertaken by the PolyU Technology and Consultancy Co. Ltd. and ALS Technichem (HK) Pty. Ltd. respectively. The results of the UCS and TCLP testing are summarised in **Table 4.3**, the complete report with the associated chain-of custody, QA/QC results and certificates of analysis were presented in **Appendix E**.

Table 4.3: Test Results for Cement Solidification

Sample ID	Density (kg/m3)	Unconfined Compressive Strength (UCS) (MPa)	TCLP for lead (mg/L)
20111028S1	2060	2.23	<0.5
20111031S1	2005	2.06	<0.5
20111031S2	2000	2.04	<0.5
20111031S3	2004	2.07	<0.5
20111101S1	2025	2.22	<0.5
20111101S2	2019	2.83	<0.5
20111101S3	2005	3.12	<0.5
20111102S1	2074	3.31	<0.5
20111102S2	2051	2.67	<0.5
20111102S3	2009	2.55	<0.5
20111103S1	2011	1.96	<0.5
20111103S2	2053	2.68	<0.5
20111103S3	2064	2.90	<0.5
20111103S4	2043	2.29	<0.5

Sample ID	Density (kg/m3)	Unconfined Compressive Strength (UCS) (MPa)	TCLP for lead (mg/L)
20111103S5	2038	2.27	<0.5
20111104S1	2010	1.89	<0.5
20111104S2	2009	1.89	<0.5
20111104S3	2013	2.18	<0.5
20111105S1	2026	2.22	<0.5
20111105S2	2024	2.28	<0.5
20111105S3	2039	2.27	<0.5
20111107S1	2035	2.70	<0.5
20111107S2	2041	3.03	<0.5
20111107S3	2034	2.60	<0.5
20111116S1	2045	3.37	<0.5
20111116S2	2049	3.28	<0.5
20111116S3	2034	2.96	<0.5
20111117S1	2036	3.35	<0.5
20111117S2	2032	3.21	<0.5
20111117S3	2024	3.00	<0.5

Notes: UCS was conducted following USEPA guideline for hazardous waste solidification; TCLP was conducted following USEPA 1331

Analytical results indicate that all samples do not exceed the assessment criteria. Hence, further monitoring is not necessary and the remediation objectives have been met accordingly.

4.4 The Decommissioning of Plants and Equipment

The plants and equipment used for excavation and soil mixing have been decommissioned after receiving the analytical result from the laboratory, photo records were presented in **Appendix F**. All the good site practices have been followed on-site, including the following:

- Dust screens, sheeting or netting to be provided to minimize the air emission from the decommissioning activities;
- All dusty materials to be sprayed with water prior to the decommissioning of plants and equipment;
- The decommissioning area should be sprayed with water immediately before, during and immediately after (as necessary) the operations so as to maintain the entire surface wet;
- All plants and equipment should be covered to limit potential dust emissions, and sealed to prevent any discharge during transport or during wet conditions; and
- Only reputable waste halers should be used to collect and transport any contaminated material.

Proposed Comprehensive Development
at Wo Shang Wai, Yuen Long
Remediation Report (Rev. A)

4.5 Arrangement after Completion of Remediation

All the treated materials will be reused on site for backfilling in the coming garden as shown in the location plan (**Figure 4.1**) with a minimum of 1m clean fill to be covered on top. The treated materials will be temporary stockpile on site with impervious sheet cover for future reuse.

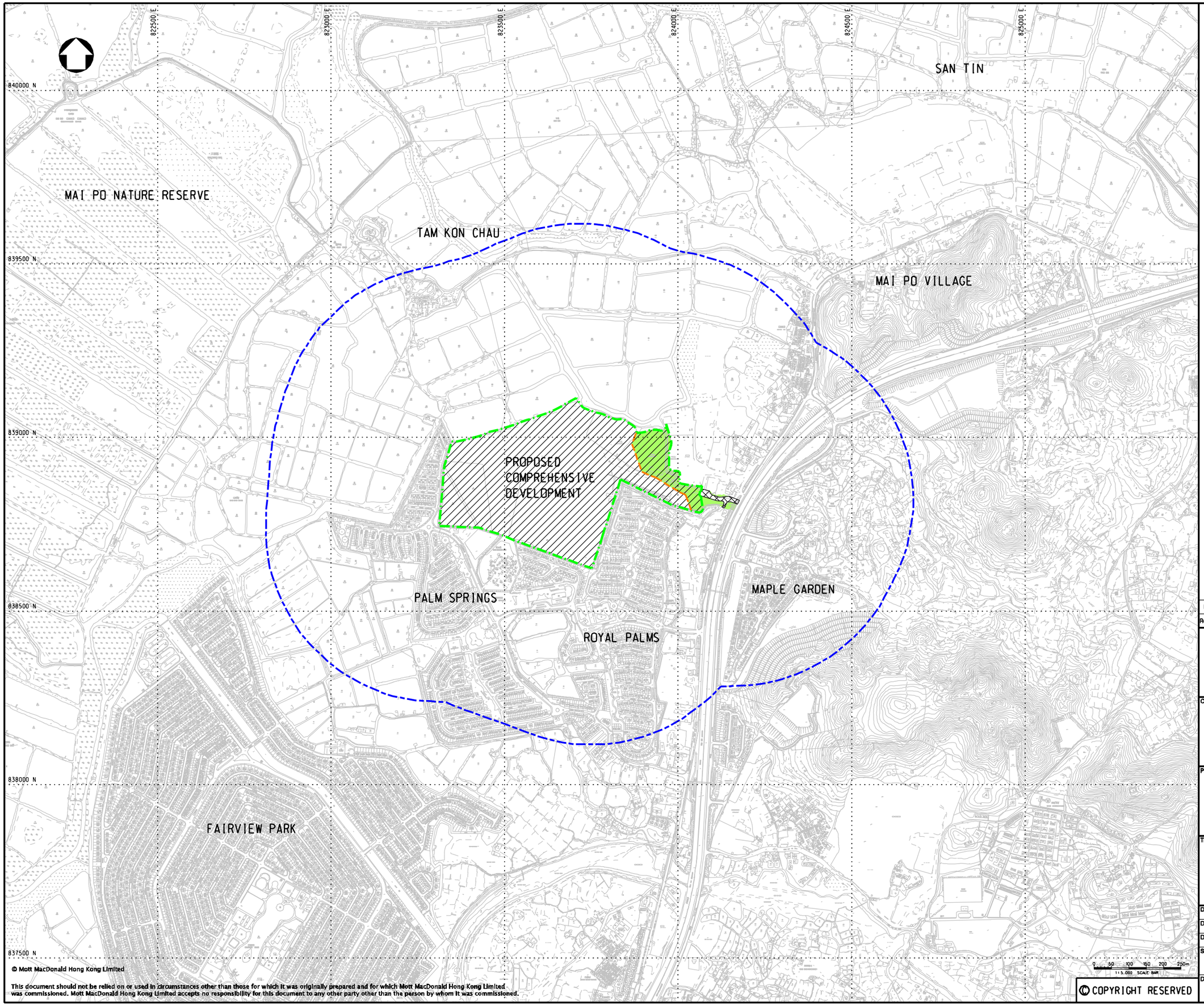
5. Conclusions

Excavation and remediation of total 1,000 m3 of contaminated soil have been carried out in accordance with the approved CAR/RAP. Samples obtained to monitor the adequacy of clean-up process were analysed and no exceedance was identified.

All analytical results of soil samples have shown no exceedance of the respective RBRG "Rural Residential" criteria thus demonstrating successful completion of the remedial objectives.

The treated materials will be temporary stockpile on site with proper cover and will be reused on site as backfilling.

Figures



LEGEND:

- SITE BOUNDARY
- ASSESSMENT AREA (500m FROM PROJECT AREA AND SITE OF CONSERVATION CONCERN)
- WORKS AREA OF THE HONG KONG SECTION OF GUANGZHOU - SHENZHEN - HONG KONG EXPRESS RAIL LINK (XRL)
- PROPOSED COMPREHENSIVE DEVELOPMENT
- AREA PERMANENTLY RESUMED FOR XRL PROJECT
- WSW AREA ENCROACHED BY XRL WORKS AREA (TOA)

Rev	Date	Drawn	Description	Chk'd	App'd
P1	NOV 11	MING	FIRST ISSUE	JC	AFK

Mott MacDonald
20/F Two Landmark East
100 How Ming Street
Kwun Tong, Kowloon
Hong Kong
T +852 2828 5757
F +852 2827 1823
W www.mottmac.com.hk

Client

PROFIT POINT ENTERPRISES LTD

Project

PROPOSED COMPREHENSIVE DEVELOPMENT AT WO SHANG WAI, YUEN LONG

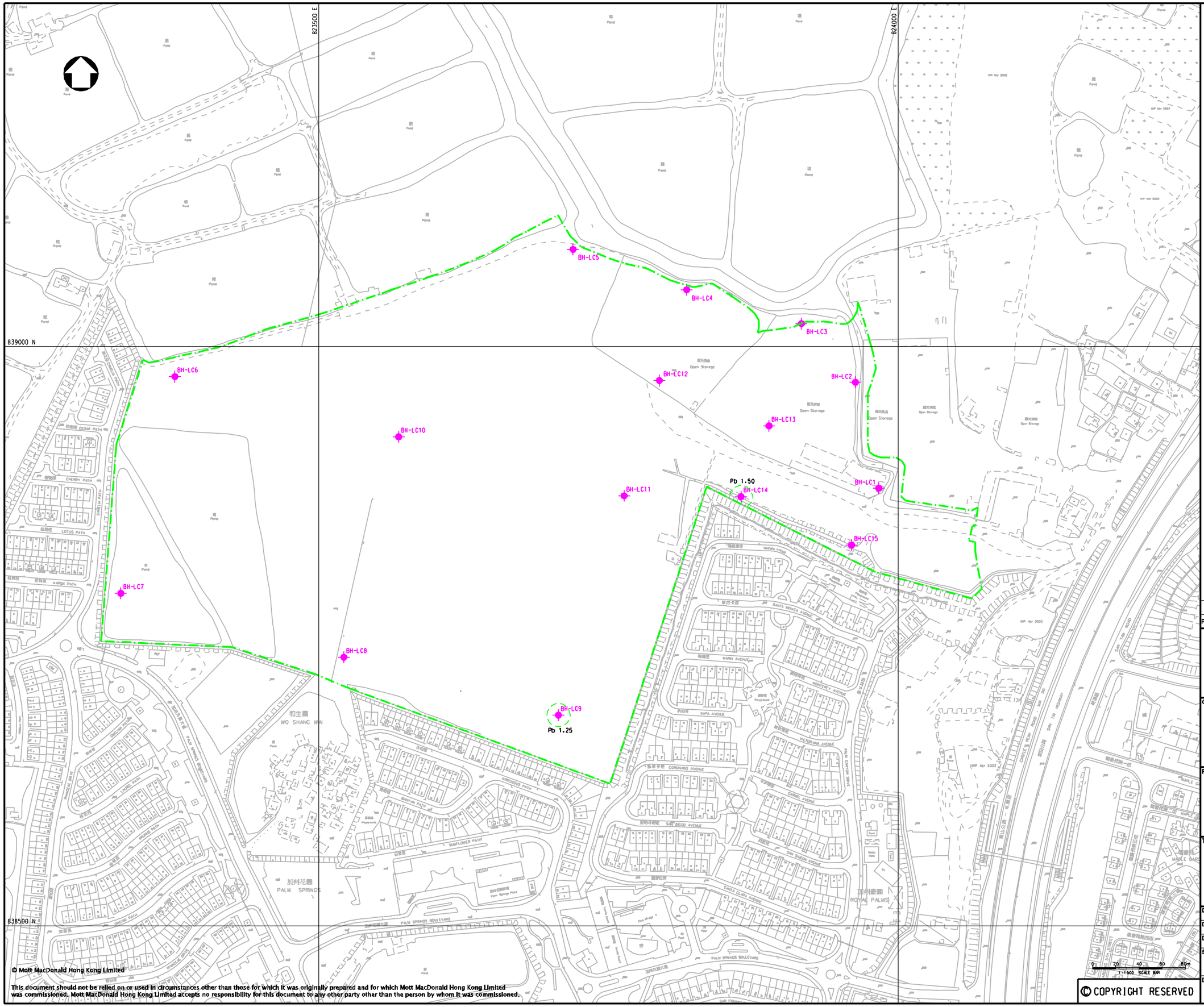
Title

SITE LOCATION PLAN

Designed	JC		Eng.Chk.	JC	
Drawn	MING		Coordination	JC	
Dwg.Chk.	JC		Approved	AFK	

Scale 1:5000@A1	Project 221005	Status
	CAD File J:\221005\report\env\rr\ml6\FIG 1.dgn	

Drawing No. FIGURE 1.1 Rev P1



NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRE UNLESS STATED OTHERWISE.
2. GRIDLINES ARE HONG KONG METRE GRID 1980.

LEGEND:

BH-LC4	LAND CONTAMINATION BOREHOLE
	PROJECT AREA BOUNDARY
Pb	LEAD LEVEL EXCEEDING RBRGs 'RURAL RESIDENTIAL' LEVEL
1.25	DEPTH (LEVEL) OF SAMPLE EXCEEDING RBRGs 'RURAL RESIDENTIAL' LEVEL
	ADOPTED 20m WIDE DIAMETER ZONE OF CONTAMINATION

	PROPOSED EXCAVATION FOR CONTAMINATED SOIL
BH-LC9	0.5 - 2.0 mbgl
BH-LC14	0.75 - 2.25 mbgl

* THE EXTENT OF EXCAVATION IS SUBJECTED TO THE APPROVAL OF CONTAMINATION ASSESSMENT REPORT (CAR) BY EPD.
* mbgl - METER BELOW GROUND LEVEL

TYPE	CO-ORDINATE	
	EASTING	NORTHING
BH-LC9	823706.712	838681.772
BH-LC14	823864.420	838870.299

Rev	Date	Drawn	Description	Ch'k'd	App'd
P1	NOV 11	MINC	FIRST ISSUE	JC	AFK

Mott MacDonald
20/F Two Landmark East
100 How Ming Street
Kwun Tong, Kowloon
Hong Kong
T +852 2828 5757
F +852 2827 1823
W www.mottmac.com.hk

Client

PROFIT POINT ENTERPRISES LTD

Project

PROPOSED COMPREHENSIVE DEVELOPMENT AT WO SHANG WAI, YUEN LONG

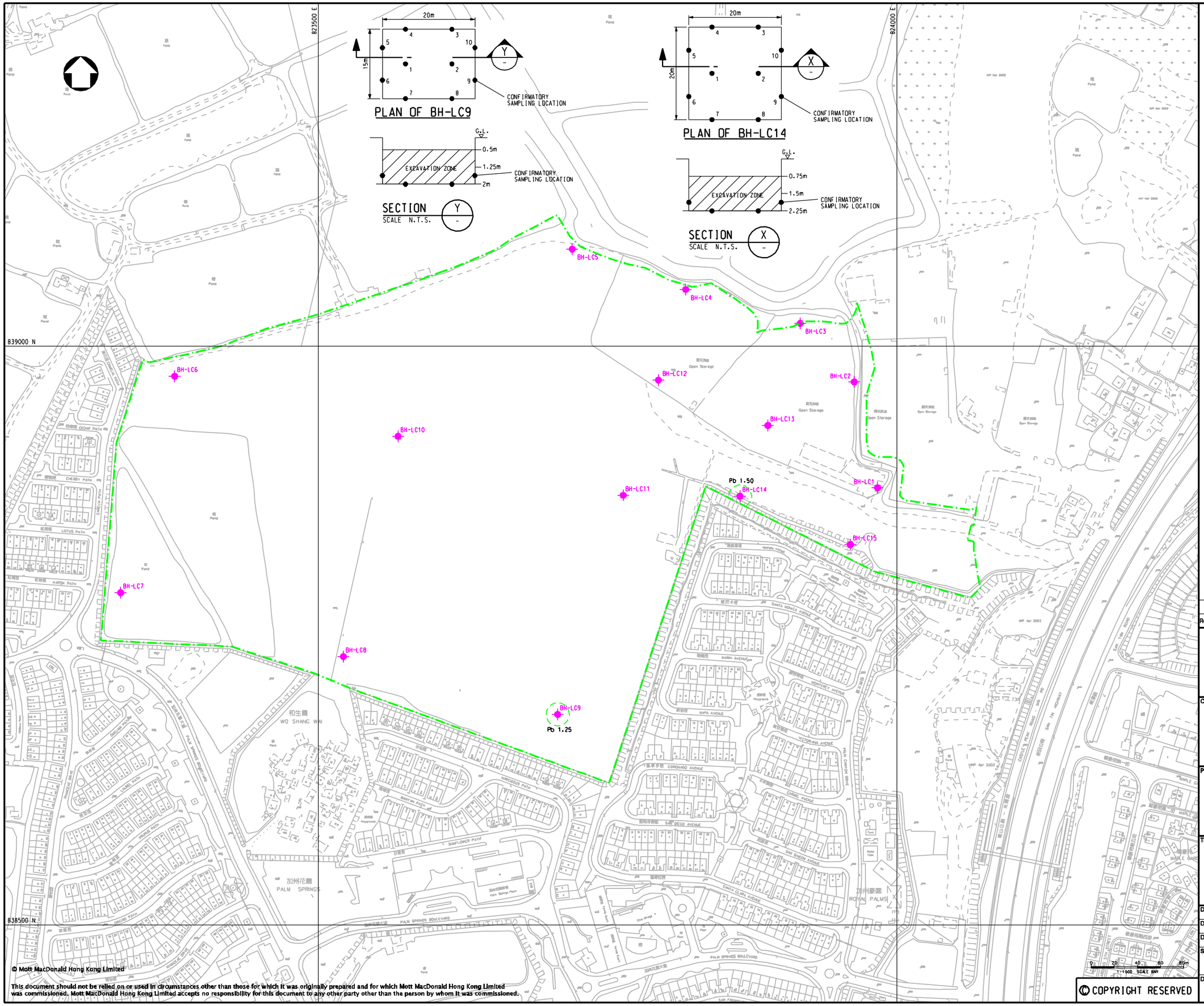
Title

LAND CONTAMINATION INVESTIGATIONS BOREHOLE LOCATIONS

Designed	JC		Eng.Chk.	JC	
Drawn	MINC		Coordination	JC	
Dwg.Chk.	JC		Approved	AFK	

Scale	Project	Status
1:1500@A1	221005	PRE
	CAD File: j:\22K005\report\env\rr\li16\FIG 1-2.dgn	

Drawing No. FIGURE 1.2 Rev P1



NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRE UNLESS STATED OTHERWISE.
2. GRIDLINES ARE HONG KONG METRE GRID 1980.

LEGEND:

BH-LC4	LAND CONTAMINATION BOREHOLE
	PROJECT AREA BOUNDARY
Pb	LEAD LEVEL EXCEEDING RBRGs 'RURAL RESIDENTIAL' LEVEL
1.25	DEPTH (LEVEL) OF SAMPLE EXCEEDING RBRGs 'RURAL RESIDENTIAL' LEVEL
	ADOPTED 20m WIDE DIAMETER ZONE OF CONTAMINATION

	PROPOSED EXCAVATION FOR CONTAMINATED SOIL
BH-LC9	0.5 - 2.0 mbgl
BH-LC14	0.75 - 2.25 mbgl

* THE EXTENT OF EXCAVATION IS SUBJECTED TO THE APPROVAL OF CONTAMINATION ASSESSMENT REPORT (CAR) BY EPD.
* mbgl - METER BELOW GROUND LEVEL

TYPE	CO-ORDINATE	
	EASTING	NORTHING
BH-LC9	823706.712	838681.772
BH-LC14	823864.420	838870.299

Rev	Date	Drawn	Description	Ch'k'd	App'd
P1	NOV 11	MINC	FIRST ISSUE	JC	AFK

Mott MacDonald
20/F Two Landmark East
100 How Ming Street
Kwun Tong, Kowloon
Hong Kong
T +852 2828 5757
F +852 2827 1823
W www.mottmac.com.hk

Client

PROFIT POINT ENTERPRISES LTD

Project

PROPOSED COMPREHENSIVE DEVELOPMENT AT WO SHANG WAI, YUEN LONG

Title

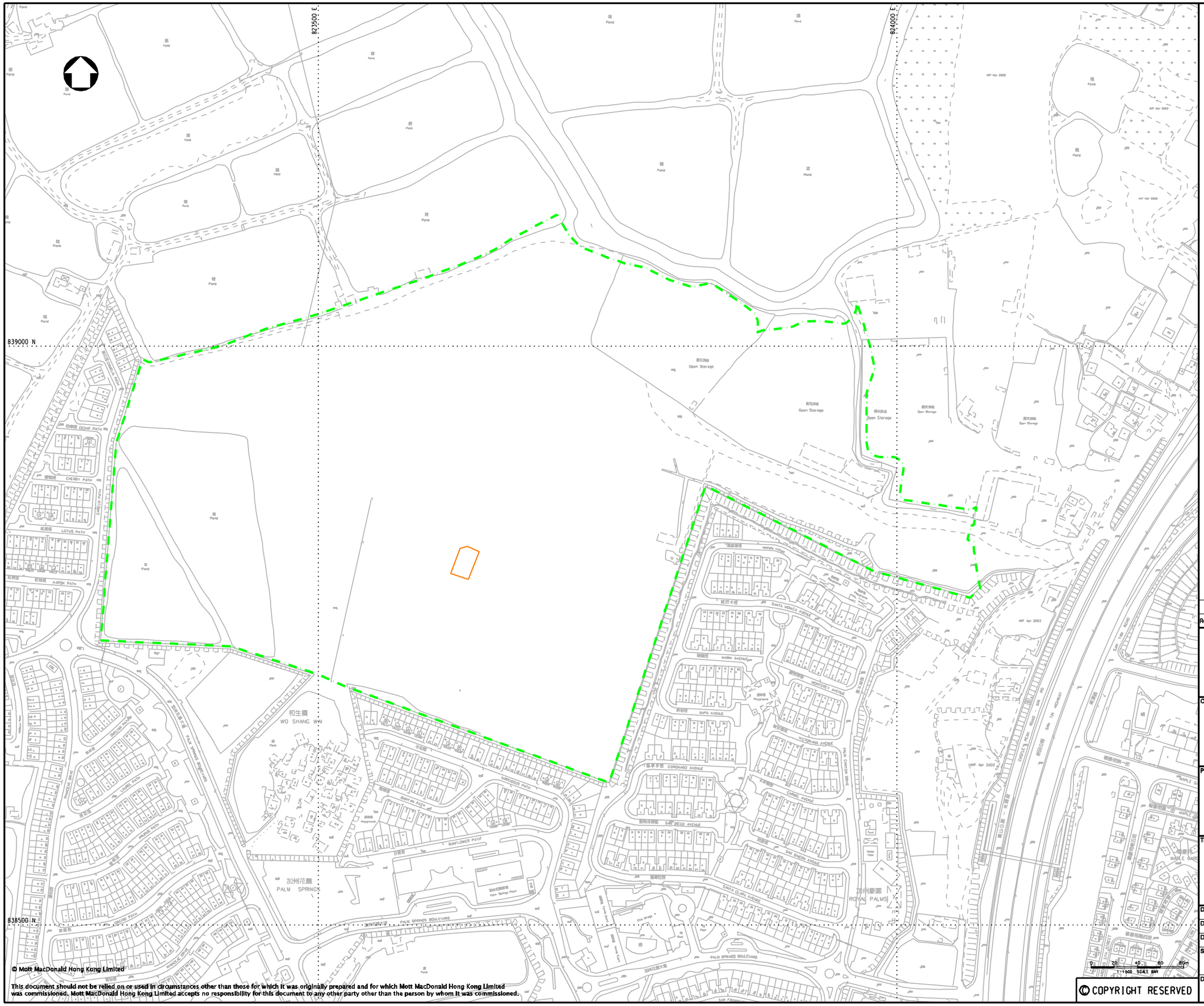
EXTENT OF CONTAMINATED SOIL EXCAVATION

Designed	JC		Eng.Chk.	JC	
Drawn	MINC		Coordination	JC	
Dwg.Chk.	JC		Approved	AFK	

Scale 1:1500@A1 | Project 221005 | Status PRE

CAD File j:\22K005\report\env\rr\ll6\FIG 3-1.dgn

Drawing No. FIGURE 3.1 | Rev P1



NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRE UNLESS STATED OTHERWISE.
2. GRIDLINES ARE HONG KONG METRE GRID 1980.

LEGEND:

PROJECT AREA BOUNDARY

PROPOSED BACKFILL LOCATION

Rev	Date	Drawn	Description	Ch'k'd	App'd
P1	JAN 12	MINC	FIRST ISSUE	JC	AFK

Mott MacDonald
20/F Two Landmark East
100 How Ming Street
Kwun Tong, Kowloon
Hong Kong
T +852 2828 5757
F +852 2827 1823
W www.mottmac.com.hk

Client

PROFIT POINT ENTERPRISES LTD

Project

PROPOSED COMPREHENSIVE DEVELOPMENT AT WO SHANG WAI, YUEN LONG

Title

PROPOSED BACKFILL LOCATION FOR TREATED SOIL

Designed	JC		Eng.Chk.	JC	
Drawn	MINC		Coordination	JC	
Dwg.Chk.	JC		Approved	AFK	

Scale 1:1500@A1

Project 221005

CAD File J:\221005\REPORT\ENV\RRN\20120\FIG 4-1.dgn

Status PRE

Drawing No. FIGURE 4.1

Rev P1

1:1500 SCALE BAR 0 20 40 60 80m

Proposed Comprehensive Development
at Wo Shang Wai, Yuen Long
Remediation Report (Rev. A)

Appendix A. Photo Records of Confirmatory Soil Sampling

221005/ENL/ENL/AB11/A Jan 2012
P:\Hong Kong\ENL\PROJECTS\221005 Wo Shang Wai_Additional\Land Contamination\Land Contamination Assessment _2009\Remediation Report\Remediation Report Rev A.doc

BH-LC9 – Confirmatory Sampling Locations

BH-LC9-1

BH-LC9-2

BH-LC9-3

BH-LC9-4

BH-LC9-5

BH-LC9-6

BH-LC9-7

BH-LC9-8

BH-LC9-9

BH-LC9-10

P:\Hong Kong\ENL\PROJECTS\221005 Wo Shang Wai_Additional\Land Contamination\Land Contamination Assessment _2009\Remediation Report\201008 Advance Info to EPD\Photo Record - BHLC9 and BHLC14 Sampling Location.doc

BH-LC14 – Confirmatory Sampling Locations

BH-LC14-1

BH-LC14-2

BH-LC14-3

BH-LC14-4

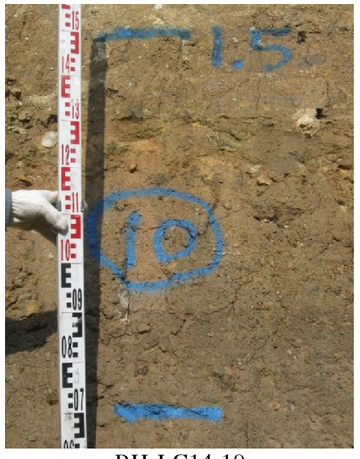
BH-LC14-5

BH-LC14-6

BH-LC14-7

BH-LC14-8

BH-LC14-9



BH-LC14-10

P:\Hong Kong\ENL\PROJECTS\221005 Wo Shang Wai_Additional\Land Contamination\Land Contamination Assessment _2009\Remediation Report\201008 Advance Info to EPD\Photo Record - BHLC9 and BHLC14 Sampling Location.doc

Proposed Comprehensive Development
at Wo Shang Wai, Yuen Long
Remediation Report (Rev. A)

Appendix B. Laboratory Testing Results of Confirmatory Soil Sampling

221005/ENL/ENL/AB11/A Jan 2012
P:\Hong Kong\ENL\PROJECTS\221005 Wo Shang Wai_Additional\Land Contamination\Land Contamination Assessment _2009\Remediation Report\Remediation Report Rev A.doc

CERTIFICATE OF ANALYSIS

Client	:	LANGHILL CONSTRUCTION ENGINEERING LIMITED	*Laboratory*	:	ALS Technichem HK Pty Ltd	*Page*	: 1 of 3
Contact	:	MR CHI KONG YUEN	*Contact*	:	Chan Kwok Fai, Godfrey	*Work Order*	: **HK1002694**
Address	:	ROOM 1704 TELFORD HOUSE, 16 WANG HOI ROAD, KOWLOON BAY, KOWLOON HONG KONG	*Address*	:	11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	:	lhcel@netvigator.com	*E-mail*	:	Godfrey.Chan@alsenviro.com		
Telephone	:	+852 2305 2303	*Telephone*	:	+852 2610 1044		
Facsimile	:	+852 2756 3361	*Facsimile*	:	+852 2610 2021		
Project	:	WO SHANG WAI YUEN LONG	*Quote number*	:	----	*Date received*	: 04-FEB-2010
Order number	:	----				*Date of issue*	: 11-FEB-2010
C-O-C number	:	----				*No. of samples*	- *Received* : 10
Site	:	----					- *Analysed* : 10

Report Comments

This report for ALS Technichem (HK) Pty Ltd work order reference HK1002694 supersedes any previous reports with this reference. The completion date of analysis is 09-FEB-2010. Results apply to sample(s) as submitted. All pages of this report have been checked and approved for release. When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for process purposes. Abbreviations: CAS number = Chemical Abstract Services number. LOR = Limit of reporting.

Specific comments for Work Order HK1002694 : **Sample(s) were picked up from client by ALS Technichem (HK) staff in a chilled condition.**
Soil sample(s) analysed on an as received basis. Result(s) reported on a dry weight basis.
Soil sample(s) as received, digested by In-house method E-ASTM D3974-81 based on ASTM D3974-81, prior to the determination of metals.

This document has been electronically signed by those names that appear on this report and are the authorised signatories. Electronic signing has been carried out in compliance with procedures specified in the 'Electronic Transactions Ordinance' of Hong Kong, Chapter 553, Section 6.

Signatory	*Position*	*Authorised results for:-*
Fung Lim Chee, Richard	General Manager	Inorganics

Analytical Results

Sub-Matrix: **SOIL**

Client sample ID	*Client sampling date / time*	*Laboratory sample ID*	*Compound*	EA055: Moisture Content (dried @ 103° C)	EG020: Lead			
			LOR Unit	0.1 %	1 mg/kg			
				EA/ED: Physical and Aggregate Properties	EG: Metals and Major Cations			
BH-LC9-1	[04-FEB-2010]	HK1002694-001		**6.7**	**47**			
BH-LC9-2	[04-FEB-2010]	HK1002694-002		**13.1**	**60**			
BH-LC9-3	[04-FEB-2010]	HK1002694-003		**7.9**	**58**			
BH-LC9-4	[04-FEB-2010]	HK1002694-004		**10.1**	**54**			
BH-LC9-5	[04-FEB-2010]	HK1002694-005		**12.2**	**74**			
BH-LC9-6	[04-FEB-2010]	HK1002694-006		**8.0**	**61**			
BH-LC9-7	[04-FEB-2010]	HK1002694-007		**8.6**	**61**			
BH-LC9-8	[04-FEB-2010]	HK1002694-008		**7.9**	**49**			
BH-LC9-9	[04-FEB-2010]	HK1002694-009		**10.8**	**76**			
BH-LC9-10	[04-FEB-2010]	HK1002694-010		**7.3**	**65**			

Laboratory Duplicate (DUP) Report

Matrix: SOIL

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report				
				LOR	Unit	Original Result	Duplicate Result	RPD (%)
EA/ED: Physical and Aggregate Properties (QC Lot: 1242176)								
HK1002577-011	Anonymous	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	48.4	48.1	0.6
HK1002694-008	BH-LC9-8	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	7.9	7.8	0.0
EG: Metals and Major Cations (QC Lot: 1242142)								
HK1002694-002	BH-LC9-2	EG020: Lead	7439-92-1	1	mg/kg	60	76	23.9

Method Blank (MB), Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report

Matrix: SOIL

Method: Compound	CAS Number	Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
					Spike	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
		LOR	Unit	Result	Concentration	LCS	DCS	Low	High	Value	Control Limit
EG: Metals and Major Cations (QCLot: 1242142)											
EG020: Lead	7439-92-1	1	mg/kg	<1	5 mg/kg	97.6	----	85	115	----	----

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report

Matrix: SOIL

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
				Spike	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
				Concentration	MS	MSD	Low	High	Value	Control Limit
EG: Metals and Major Cations (QCLot: 1242142)										
HK1002694-001	BH-LC9-1	EG020: Lead	7439-92-1	5 mg/kg	# Not Determined	----	75	125	----	----

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES

CERTIFICATE OF ANALYSIS

Client	: LANGHILL CONSTRUCTION ENGINEERING LIMITED	Laboratory	: ALS Technichem HK Pty Ltd	Page	: 1 of 3		
Contact	: MR CHI KONG YUEN	Contact	: Chan Kwok Fai, Godfrey	Work Order	: HK1002024		
Address	: ROOM 1704 TELFORD HOUSE, 16 WANG HOI ROAD, KOWLOON BAY, KOWLOON HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong	Amendment No.	: 1		
E-mail	: lhcel@netvigator.com	E-mail	: Godfrey.Chan@alsenviro.com				
Telephone	: +852 2305 2303	Telephone	: +852 2610 1044				
Facsimile	: +852 2756 3361	Facsimile	: +852 2610 2021				
Project	: WO SHANG WAI YUEN LONG	Quote number	: ----	Date received	: 26-JAN-2010		
Order number	: ----			Date of issue	: 12-FEB-2010		
C-O-C number	: ----			No. of samples	- Received : 10		
Site	: ----				- Analysed : 10		

Report Comments

This report for ALS Technichem (HK) Pty Ltd work order reference HK1002024_1.00 supersedes any previous reports with this reference. The completion date of analysis is 30-JAN-2010. Results apply to sample(s) as submitted. All pages of this report have been checked and approved for release. When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for process purposes. Abbreviations: CAS number = Chemical Abstract Services number. LOR = Limit of reporting.

Specific comments for Work Order HK1002024 :

The sample #5 (HK1002024005) was resubmitted at 6 Feb. for Lead (Pb) analysis.
Sample(s) were picked up from client by ALS Technichem (HK) staff in a chilled condition.
Soil sample(s) analysed on an as received basis. Result(s) reported on a dry weight basis.
Soil sample(s) as received, digested by In-house method E-ASTM D3974-81 based on ASTM D3974-81, prior to the determination of metals.

This document has been electronically signed by those names that appear on this report and are the authorised signatories. Electronic signing has been carried out in compliance with procedures specified in the 'Electronic Transactions Ordinance' of Hong Kong, Chapter 553, Section 6.

Signatory	Position	Authorised results for:-
Fung Lim Chee, Richard	General Manager	Inorganics

Analytical Results

Sub-Matrix: **SOIL**

Client sample ID	Client sampling date / time	Laboratory sample ID	Compound: EA055: Moisture Content (dried @ 103° C)	EG020: Lead			
		LOR Unit	0.1 %	1 mg/kg			
			EA/ED: Physical and Aggregate Properties	EG: Metals and Major Cations			
BHL-C14 1	[25-JAN-2010]	HK1002024-001	**9.5**	**80**			
BHL-C14 2	[25-JAN-2010]	HK1002024-002	**9.9**	**187**			
BHL-C14 3	[25-JAN-2010]	HK1002024-003	**10.2**	**194**			
BHL-C14 4	[25-JAN-2010]	HK1002024-004	**8.2**	**134**			
BHL-C14 5	[25-JAN-2010]	HK1002024-005	**10.5**	**22**			
BHL-C14 6	[25-JAN-2010]	HK1002024-006	**10.3**	**220**			
BHL-C14 7	[25-JAN-2010]	HK1002024-007	**8.7**	**94**			
BHL-C14 8	[25-JAN-2010]	HK1002024-008	**10.7**	**136**			
BHL-C14 9	[25-JAN-2010]	HK1002024-009	**10.9**	**127**			
BHL-C14 10	[25-JAN-2010]	HK1002024-010	**10.7**	**93**			

Laboratory Duplicate (DUP) Report

Matrix: **SOIL**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report: LOR	Unit	Original Result	Duplicate Result	RPD (%)
EA/ED: Physical and Aggregate Properties (QC Lot: 1234919)								
HK1002024-001	BHL-C14 1	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	9.5	9.6	0.0
HK1002046-001	Anonymous	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	13.0	12.8	1.3
EG: Metals and Major Cations (QC Lot: 1233417)								
HK1002024-002	BHL-C14 2	EG020: Lead	7439-92-1	1	mg/kg	187	158	16.5
HK1002026-001	Anonymous	EG020: Lead	7439-92-1	1	mg/kg	2	2	0.0

Method Blank (MB), Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report

Matrix: **SOIL**

Method: Compound	CAS Number	Method Blank (MB) Report: LOR	Unit	Result	Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report: Spike Concentration	Spike Recovery (%): LCS	DCS	Recovery Limits (%): Low	High	RPDs (%): Value	Control Limit
EG: Metals and Major Cations (QCLot: 1233417)											
EG020: Lead	7439-92-1	1	mg/kg	<1	5 mg/kg	100	----	85	115	----	----

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report

Matrix: **SOIL**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report: Spike Concentration	Spike Recovery (%): MS	MSD	Recovery Limits (%): Low	High	RPDs (%): Value	Control Limit
EG: Metals and Major Cations (QCLot: 1233417)										
HK1002024-001	BHL-C14 1	EG020: Lead	7439-92-1	5 mg/kg	# Not Determined	----	75	125	----	----

Proposed Comprehensive Development
at Wo Shang Wai, Yuen Long
Remediation Report (Rev. A)

Appendix C. Laboratory Testing Results of TCLP for Lead of Pilot Testing

221005/ENL/ENL/AB11/A Jan 2012
P:\Hong Kong\ENL\PROJECTS\221005 Wo Shang Wai_Additional\Land Contamination\Land Contamination Assessment _2009\Remediation Report\Remediation Report Rev A.doc

CERTIFICATE OF ANALYSIS

Client	: MOTT MACDONALD HONG KONG LIMITED	Laboratory	: ALS Technichem HK Pty Ltd	Page	: 1 of 4
Contact	: MS JULIA CHAN	Contact	: Chan Kwok Fai, Godfrey	Work Order	: HK1120210
Address	: 20/F., TWO LANDMARK EAST, 100 HOW MING STREET, KWUN TONG, KOWLOON HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	: julia.chan@mottmac.com.hk	E-mail	: Godfrey.Chan@alsglobal.com		
Telephone	: +852 2828 5769	Telephone	: +852 2610 1044		
Facsimile	: +852 2827 1823	Facsimile	: +852 2610 2021		
Project	: 221005 COMPREHENSIVE DEVELOPMENT AT WO SHANG WAI YUEN LONG	Quote number	: ----	Date Samples Received	: 29-AUG-2011
Order number	: ----			Issue Date	: 09-SEP-2011
C-O-C number	: ----			No. of samples received	: 3
Site	: WO SHANG WAI			No. of samples analysed	: 3

This document has been electronically signed by those names that appear on this report and are the authorised signatories. Electronic signing has been carried out in compliance with procedures specified in the Electronic Transactions Ordinance of Hong Kong, Chapter 553, Section 6.

Signatories	*Position*	*Authorised results for*
Fung Lim Chee, Richard	**General Manager**	**Inorganics**

General Comments

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release. When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes. The completion date of analysis is: 09-SEP-2011

Key: LOR = Limit of reporting; CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.

Specific comments for Work Order: **HK1120210**

Sample(s) were picked up from client by ALS Technichem (HK) staff in a chilled condition.

Sample(s) analysed and reported on an as received basis.

TCLP leachate sample(s) were filtered prior to dissolved metal analysis.

The metal concentrations reported are those determined on the TCLP leachate. Extraction Fluid #1 pH 4.88 - 4.98.

Analytical Results

Sub-Matrix: **TCLP LEACHATE**

Compound	CAS Number	LOR	Unit	Client sample ID: 20110819S1_1	20110819S1_2	20110819S1_3		
				Client sampling date / time: [19-AUG-2011]	[19-AUG-2011]	[19-AUG-2011]		
				HK1120210-001	HK1120210-002	HK1120210-003		
EG: Metals and Major Cations - Filtered								
EG020: Lead	7439-92-1	0.5	mg/L	<0.5	<0.5	<0.5		
Sample Preparation Method								
E-TCLP: Extraction Fluid Number	----	-	--	1	1	1		

Laboratory Duplicate (DUP) Report

Matrix: **WATER**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report: LOR	Unit	Original Result	Duplicate Result	RPD (%)
EG: Metals and Major Cations - Filtered (QC Lot: 1949458)								
HK1120210-002	20110819S1_2	**EG020: Lead**	7439-92-1	0.5	mg/L	<0.5	<0.5	0.0

Method Blank (MB), Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report

Matrix: **WATER**

Method: Compound	CAS Number	Method Blank (MB) Report: LOR	Unit	Result	Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report: Spike Concentration	Spike Recovery (%): LCS	DCS	Recovery Limits (%): Low	High	RPD (%): Value	Control Limit
EG: Metals and Major Cations - Filtered (QC Lot: 1949458)											
EG020: Lead	7439-92-1	0.001	mg/L	<0.5	1 mg/L	98.5	----	85	115	----	----

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report

Matrix: **WATER**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report: Spike Concentration	Spike Recovery (%): MS	MSD	Recovery Limits (%): Low	High	RPD (%): Value	Control Limit
EG: Metals and Major Cations - Filtered (QC Lot: 1949458)										
HK1120210-001	20110819S1_1	**EG020: Lead**	7439-92-1	1 mg/L	98.7	102	75	125	2.9	----

Proposed Comprehensive Development
at Wo Shang Wai, Yuen Long
Remediation Report (Rev. A)

Appendix D. Photographic Records of the Soil Remediation Process

221005/ENL/ENL/AB11/A Jan 2012
P:\Hong Kong\ENL\PROJECTS\221005 Wo Shang Wai_Additional\Land Contamination\Land Contamination Assessment _2009\Remediation Report\Remediation Report Rev A.doc

Photographic Records of the Soil Remediation Process

Photo 01 – The soil was screened by passing through a 35 mm sieve screening platform prior to the cement solidification process.

Photo 02 – Excavator was used to loosen the contaminated soil.

Photo 03 – Excavator and lorry mixer were utilized for handling and mixing the contaminated soil.

Photo 04 – Cement was added to the lorry mixer for the solidification process.

Photo 05 – Mixing in progress.

Photo 06 – Unloading of treated soil from lorry mixer.

Photo 07 – The treated soil was weighed.

Photo 08 – Preparation of concrete cube.

Photo 09 – Preparation of concrete cube.

Photo 10 – Preparation of concrete cube.

Photo 11 – Curing of concrete cube.

Photo 12 – The treated soil was covered with tarpaulin sheet and placed at a paved area for temporary storage.

Proposed Comprehensive Development
at Wo Shang Wai, Yuen Long
Remediation Report (Rev. A)

Appendix E. Laboratory Testing Results of the Soil Remediation Works

221005/ENL/ENL/AB11/A Jan 2012
P:\Hong Kong\ENL\PROJECTS\221005 Wo Shang Wai_Additional\Land Contamination\Land Contamination Assessment _2009\Remediation Report\Remediation Report Rev A.doc

CERTIFICATE OF ANALYSIS

Client	: MOTT MACDONALD HONG KONG LIMITED	Laboratory	: ALS Technichem HK Pty Ltd	Page	: 1 of 3		
Contact	: MS JULIA CHAN	Contact	: Chan Kwok Fai, Godfrey	Work Order	: HK1127280		
Address	: 20/F., TWO LANDMARK EAST, 100 HOW MING STREET, KWUN TONG, KOWLOON HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong				
E-mail	: julia.chan@mottmac.com.hk	E-mail	: Godfrey.Chan@alsglobal.com				
Telephone	: +852 2828 5769	Telephone	: +852 2610 1044				
Facsimile	: +852 2827 1823	Facsimile	: +852 2610 2021				
Project	: 221005 COMPREHENSIVE DEVELOPMENT AT WO SHANG WAI YUEN LONG	Quote number	: ----	Date received	: 18-NOV-2011		
Order number	: ----			Date of issue	: 29-NOV-2011		
C-O-C number	: ----			No. of samples	- Received : 7		
Site	: WO SHANG WAI				- Analysed : 7		

Report Comments

This report for ALS Technichem (HK) Pty Ltd work order reference HK1127280 supersedes any previous reports with this reference. The completion date of analysis is 29-NOV-2011. Results apply to sample(s) as submitted. All pages of this report have been checked and approved for release. When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for process purposes. Abbreviations: CAS number = Chemical Abstract Services number. LOR = Limit of reporting.

Specific comments for Work Order HK1127280 :

Sample(s) were picked up from client by ALS Technichem (HK) staff in a chilled condition.
Sample(s) analysed and reported on an as received basis.
The metal concentrations reported are those determined on the TCLP leachate. Extraction Fluid #1 pH 4.88 - 4.98.
TCLP leachate sample(s) were filtered prior to dissolved metal analysis.

This document has been electronically signed by those names that appear on this report and are the authorised signatories. Electronic signing has been carried out in compliance with procedures specified in the 'Electronic Transactions Ordinance' of Hong Kong, Chapter 553, Section 6.

Signatory	Position	Authorised results for:-
Fung Lim Chee, Richard	General Manager	Inorganics

Analytical Results

Sub-Matrix: **TCLP LEACHATE**

Client sample ID	Client sampling date / time	Laboratory sample ID	Compound: EG020: Lead	E-TCLP: Extraction Fluid Number			
			LOR Unit: 0.5 mg/L	- --			
			EG: Metals and Major Cations - Filtered	Sample Preparation Method			
20111028S1	[28-OCT-2011]	HK1127280-001	<0.5	**1**			
20111031S1	[31-OCT-2011]	HK1127280-002	<0.5	**1**			
20111031S2	[31-OCT-2011]	HK1127280-003	<0.5	**1**			
20111031S3	[31-OCT-2011]	HK1127280-004	<0.5	**1**			
20111101S1	[01-NOV-2011]	HK1127280-005	<0.5	**1**			
20111101S2	[01-NOV-2011]	HK1127280-006	<0.5	**1**			
20111101S3	[01-NOV-2011]	HK1127280-007	<0.5	**1**			

Laboratory Duplicate (DUP) Report

Matrix: **WATER**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report				
				LOR	Unit	Original Result	Duplicate Result	RPD (%)
EG: Metals and Major Cations - Filtered (QC Lot: 2065781)								
HK1127287-002	Anonymous	EG020: Lead	7439-92-1	0.5	mg/L	<0.5	<0.5	0.0
HK1127288-002	Anonymous	EG020: Lead	7439-92-1	0.5	mg/L	<0.5	<0.5	0.0

Method Blank (MB), Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report

Matrix: **WATER**

Method: Compound	CAS Number	Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
					Spike	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
		LOR	Unit	Result	Concentration	LCS	DCS	Low	High	Value	Control Limit
EG: Metals and Major Cations - Filtered (QCLot: 2065781)											
EG020: Lead	7439-92-1	0.001	mg/L	<0.5	1 mg/L	93.0	----	84	108	----	----

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report

Matrix: **WATER**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
				Spike	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
				Concentration	MS	MSD	Low	High	Value	Control Limit
EG: Metals and Major Cations - Filtered (QCLot: 2065781)										
HK1127280-001	20111028S1	EG020: Lead	7439-92-1	1 mg/L	94.8	93.1	75	125	1.8	----

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES

CERTIFICATE OF ANALYSIS

Client	: MOTT MACDONALD HONG KONG LIMITED	Laboratory	: ALS Technichem HK Pty Ltd	Page	: 1 of 3		
Contact	: MS JULIA CHAN	Contact	: Chan Kwok Fai, Godfrey	Work Order	: **HK1127288**		
Address	: 20/F., TWO LANDMARK EAST, 100 HOW MING STREET, KWUN TONG, KOWLOON HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong				
E-mail	: julia.chan@mottmac.com.hk	E-mail	: Godfrey.Chan@alsglobal.com				
Telephone	: +852 2828 5769	Telephone	: +852 2610 1044				
Facsimile	: +852 2827 1823	Facsimile	: +852 2610 2021				
Project	: 221005 COMPREHENSIVE DEVELOPMENT AT WO SHANG WAI YUEN LONG	Quote number	: ----	Date received	: 18-NOV-2011		
Order number	: ----			Date of issue	: 29-NOV-2011		
C-O-C number	: ----			No. of samples	- Received :	8	
Site	: WO SHANG WAI				- Analysed :	8	

Report Comments

This report for ALS Technichem (HK) Pty Ltd work order reference HK1127288 supersedes any previous reports with this reference. The completion date of analysis is 29-NOV-2011. Results apply to sample(s) as submitted. All pages of this report have been checked and approved for release. When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for process purposes. Abbreviations: CAS number = Chemical Abstract Services number. LOR = Limit of reporting.

Specific comments for Work Order HK1127288 :

Sample(s) were picked up from client by ALS Technichem (HK) staff in a chilled condition.
Sample(s) analysed and reported on an as received basis.
The metal concentrations reported are those determined on the TCLP leachate. Extraction Fluid #1 pH 4.88 - 4.98.
TCLP leachate sample(s) were filtered prior to dissolved metal analysis.

This document has been electronically signed by those names that appear on this report and are the authorised signatories. Electronic signing has been carried out in compliance with procedures specified in the 'Electronic Transactions Ordinance' of Hong Kong, Chapter 553, Section 6.

Signatory	Position	Authorised results for:-
Fung Lim Chee, Richard	**General Manager**	**Inorganics**

ALS Laboratory Group
Trading Name: ALS Technichem (HK) Pty Ltd
11/F., Chung Shun Knitting Centre, 1-3 Wing Yip Street, Kwai Chung, N.T., Hong Kong
Tel: +852 2610 1044 Fax: +852 2610 2021 www.alsenviro.com

Analytical Results

Sub-Matrix: TCLP LEACHATE			Compound	EG020: Lead	E-TCLP: Extraction Fluid Number			
			LOR Unit	0.5 mg/L	---			
Client sample ID	Client sampling date / time	Laboratory sample ID		EG: Metals and Major Cations - Filtered	Sample Preparation Method			
20111102S1	[02-NOV-2011]	HK1127288-001		<0.5	**1**			
20111102S2	[02-NOV-2011]	HK1127288-002		<0.5	**1**			
20111102S3	[02-NOV-2011]	HK1127288-003		<0.5	**1**			
20111103S1	[03-NOV-2011]	HK1127288-004		<0.5	**1**			
20111103S2	[03-NOV-2011]	HK1127288-005		<0.5	**1**			
20111103S3	[03-NOV-2011]	HK1127288-006		<0.5	**1**			
20111103S4	[03-NOV-2011]	HK1127288-007		<0.5	**1**			
20111103S5	[03-NOV-2011]	HK1127288-008		<0.5	**1**			

Laboratory Duplicate (DUP) Report

Matrix: **WATER**

				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
EG: Metals and Major Cations - Filtered (QC Lot: 2065781)								
HK1127287-002	Anonymous	EG020: Lead	7439-92-1	0.5	mg/L	<0.5	<0.5	0.0
HK1127288-002	20111102S2	EG020: Lead	7439-92-1	0.5	mg/L	<0.5	<0.5	0.0

Method Blank (MB), Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report

Matrix: **WATER**

		Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
					Spike	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	DCS	Low	High	Value	Control Limit
EG: Metals and Major Cations - Filtered (QCLot: 2065781)											
EG020: Lead	7439-92-1	0.001	mg/L	<0.5	1 mg/L	93.0	----	84	108	----	----
EG: Metals and Major Cations - Filtered (QCLot: 2065782)											
EG020: Lead	7439-92-1	0.001	mg/L	<0.5	1 mg/L	93.8	----	84	108	----	----

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report

Matrix: **WATER**

				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
				Spike	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	MSD	Low	High	Value	Control Limit
EG: Metals and Major Cations - Filtered (QCLot: 2065781)										
HK1127280-001	Anonymous	EG020: Lead	7439-92-1	1 mg/L	94.8	93.1	75	125	1.8	----
EG: Metals and Major Cations - Filtered (QCLot: 2065782)										
HK1127288-008	20111103S5	EG020: Lead	7439-92-1	1 mg/L	95.5	96.0	75	125	0.5	----

CERTIFICATE OF ANALYSIS

Client	: MOTT MACDONALD HONG KONG LIMITED	*Laboratory*	: ALS Technichem HK Pty Ltd	*Page*	: 1 of 3		
Contact	: MS JULIA CHAN	*Contact*	: Chan Kwok Fai, Godfrey	*Work Order*	: **HK1127287**		
Address	: 20/F., TWO LANDMARK EAST, 100 HOW MING STREET, KWUN TONG, KOWLOON HONG KONG	*Address*	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong				
E-mail	: julia.chan@mottmac.com.hk	*E-mail*	: Godfrey.Chan@alsglobal.com				
Telephone	: +852 2828 5769	*Telephone*	: +852 2610 1044				
Facsimile	: +852 2827 1823	*Facsimile*	: +852 2610 2021				
Project	: 221005 COMPREHENSIVE DEVELOPMENT AT WO SHANG WAI YUEN LONG	*Quote number*	: ----	*Date received*	: 18-NOV-2011		
Order number	: ----			*Date of issue*	: 29-NOV-2011		
C-O-C number	: ----			*No. of samples*	- *Received* :	6	
Site	: WO SHANG WAI				- *Analysed* :	6	

Report Comments

This report for ALS Technichem (HK) Pty Ltd work order reference HK1127287 supersedes any previous reports with this reference. The completion date of analysis is 29-NOV-2011. Results apply to sample(s) as submitted. All pages of this report have been checked and approved for release. When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for process purposes. Abbreviations: CAS number = Chemical Abstract Services number. LOR = Limit of reporting.

Specific comments for Work Order HK1127287 :

Sample(s) were picked up from client by ALS Technichem (HK) staff in a chilled condition.
Sample(s) analysed and reported on an as received basis.
The metal concentrations reported are those determined on the TCLP leachate. Extraction Fluid #1 pH 4.88 - 4.98.
TCLP leachate sample(s) were filtered prior to dissolved metal analysis.

This document has been electronically signed by those names that appear on this report and are the authorised signatories. Electronic signing has been carried out in compliance with procedures specified in the 'Electronic Transactions Ordinance' of Hong Kong, Chapter 553, Section 6.

Signatory	*Position*	*Authorised results for:-*
Fung Lim Chee, Richard	**General Manager**	**Inorganics**

Analytical Results

Sub-Matrix: **TCLP LEACHATE**

Client sample ID	*Client sampling date / time*	*Laboratory sample ID*	*Compound*	EG020: Lead	E-TCLP: Extraction Fluid Number			
			LOR Unit	0.5 mg/L	---			
				EG: Metals and Major Cations - Filtered	Sample Preparation Method			
20111104S1	[04-NOV-2011]	HK1127287-001		<0.5	**1**			
20111104S2	[04-NOV-2011]	HK1127287-002		<0.5	**1**			
20111104S3	[04-NOV-2011]	HK1127287-003		<0.5	**1**			
20111105S1	[05-NOV-2011]	HK1127287-004		<0.5	**1**			
20111105S2	[05-NOV-2011]	HK1127287-005		<0.5	**1**			
20111105S3	[05-NOV-2011]	HK1127287-006		<0.5	**1**			

Laboratory Duplicate (DUP) Report

Matrix: **WATER**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report				
				LOR	Unit	Original Result	Duplicate Result	RPD (%)
EG: Metals and Major Cations - Filtered (QC Lot: 2065781)								
HK1127287-002	20111104S2	EG020: Lead	7439-92-1	0.5	mg/L	<0.5	<0.5	0.0
HK1127288-002	Anonymous	EG020: Lead	7439-92-1	0.5	mg/L	<0.5	<0.5	0.0

Method Blank (MB), Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report

Matrix: **WATER**

Method: Compound	CAS Number	Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
					Spike	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
		LOR	Unit	Result	Concentration	LCS	DCS	Low	High	Value	Control Limit
EG: Metals and Major Cations - Filtered (QCLot: 2065781)											
EG020: Lead	7439-92-1	0.001	mg/L	<0.5	1 mg/L	93.0	----	84	108	----	----

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report

Matrix: **WATER**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
				Spike	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
				Concentration	MS	MSD	Low	High	Value	Control Limit
EG: Metals and Major Cations - Filtered (QCLot: 2065781)										
HK1127280-001	Anonymous	EG020: Lead	7439-92-1	1 mg/L	94.8	93.1	75	125	1.8	----

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES

CERTIFICATE OF ANALYSIS

Client	: MOTT MACDONALD HONG KONG LIMITED	Laboratory	: ALS Technichem HK Pty Ltd	Page	: 1 of 3		
Contact	: MS JULIA CHAN	Contact	: Chan Kwok Fai, Godfrey	Work Order	: **HK1128102**		
Address	: 20/F., TWO LANDMARK EAST, 100 HOW MING STREET, KWUN TONG, KOWLOON HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong				
E-mail	: julia.chan@mottmac.com.hk	E-mail	: Godfrey.Chan@alsglobal.com				
Telephone	: +852 2828 5769	Telephone	: +852 2610 1044				
Facsimile	: +852 2827 1823	Facsimile	: +852 2610 2021				
Project	: 221005 COMPREHENSIVE DEVELOPMENT AT WO SHANG WAI YUEN LONG	Quote number	: ----	Date received	: 30-NOV-2011		
Order number	: ----			Date of issue	: 09-DEC-2011		
C-O-C number	: ----			No. of samples	- Received :	6	
Site	: WO SHANG WAI				- Analysed :	6	

Report Comments

This report for ALS Technichem (HK) Pty Ltd work order reference HK1128102 supersedes any previous reports with this reference. The completion date of analysis is 05-DEC-2011. Results apply to sample(s) as submitted. All pages of this report have been checked and approved for release. When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for process purposes. Abbreviations: CAS number = Chemical Abstract Services number. LOR = Limit of reporting.

Specific comments for Work Order HK1128102 :

Sample(s) were picked up from client by ALS Technichem (HK) staff in a chilled condition.
Sample(s) analysed and reported on an as received basis.
TCLP leachate sample(s) were filtered prior to dissolved metal analysis.
The metal concentrations reported are those determined on the TCLP leachate. Extraction Fluid #1 pH 4.88 - 4.98.

This document has been electronically signed by those names that appear on this report and are the authorised signatories. Electronic signing has been carried out in compliance with procedures specified in the 'Electronic Transactions Ordinance' of Hong Kong, Chapter 553, Section 6.

Signatory	Position	Authorised results for:-
Fung Lim Chee, Richard	**General Manager**	**Inorganics**

Analytical Results

Sub-Matrix: TCLP LEACHATE			Compound	EG020: Lead	E-TCLP: Extraction Fluid Number			
			LOR Unit	0.5 mg/L	---			
Client sample ID	Client sampling date / time	Laboratory sample ID		EG: Metals and Major Cations - Filtered	Sample Preparation Method			
20111107S1	[07-NOV-2011]	HK1128102-001		<0.5	**1**			
20111107S2	[07-NOV-2011]	HK1128102-002		<0.5	**1**			
20111107S3	[07-NOV-2011]	HK1128102-003		<0.5	**1**			
20111116S1	[16-NOV-2011]	HK1128102-004		<0.5	**1**			
20111116S2	[16-NOV-2011]	HK1128102-005		<0.5	**1**			
20111116S3	[16-NOV-2011]	HK1128102-006		<0.5	**1**			

Laboratory Duplicate (DUP) Report

Matrix: **WATER**

				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
EG: Metals and Major Cations - Filtered (QC Lot: 2072787)								
HK1127503-002	Anonymous	EG020: Lead	7439-92-1	0.1	mg/L	0.6	0.6	0.0
HK1128102-006	20111116S3	EG020: Lead	7439-92-1	0.5	mg/L	<0.5	<0.5	0.0

Method Blank (MB), Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report

Matrix: **WATER**

		Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
					Spike	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	DCS	Low	High	Value	Control Limit
EG: Metals and Major Cations - Filtered (QCLot: 2072787)											
EG020: Lead	7439-92-1	0.001	mg/L	<0.1	1 mg/L	96.5	----	84	108	----	----

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report

Matrix: **WATER**

				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
				Spike	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	MSD	Low	High	Value	Control Limit
EG: Metals and Major Cations - Filtered (QCLot: 2072787)										
HK1127503-001	Anonymous	EG020: Lead	7439-92-1	1 mg/L	98.3	98.5	75	125	0.2	----

CERTIFICATE OF ANALYSIS

Client	: MOTT MACDONALD HONG KONG LIMITED	Laboratory	: ALS Technichem HK Pty Ltd	Page	: 1 of 4
Contact	: MS JULIA CHAN	Contact	: Chan Kwok Fai, Godfrey	Work Order	: HK1128104
Address	: 20/F., TWO LANDMARK EAST, 100 HOW MING STREET, KWUN TONG, KOWLOON HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	: julia.chan@mottmac.com.hk	E-mail	: Godfrey.Chan@alsglobal.com		
Telephone	: +852 2828 5769	Telephone	: +852 2610 1044		
Facsimile	: +852 2827 1823	Facsimile	: +852 2610 2021		
Project	: 221005 COMPREHENSIVE DEVELOPMENT AT WO SHANG WAI YUEN LONG	Quote number	: ----	Date Samples Received	: 30-NOV-2011
Order number	: ----			Issue Date	: 09-DEC-2011
C-O-C number	: ----			No. of samples received	: 3
Site	: WO SHANG WAI			No. of samples analysed	: 3

This document has been electronically signed by those names that appear on this report and are the authorised signatories. Electronic signing has been carried out in compliance with procedures specified in the Electronic Transactions Ordinance of Hong Kong, Chapter 553, Section 6.

Signatories	*Position*	*Authorised results for*
Fung Lim Chee, Richard	**General Manager**	**Inorganics**

General Comments

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release. When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes. The completion date of analysis is: 05-DEC-2011

Key: LOR = Limit of reporting; CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.

Specific comments for Work Order: **HK1128104**

Sample(s) were picked up from client by ALS Technichem (HK) staff in a chilled condition.
Sample(s) analysed and reported on an as received basis.
TCLP leachate sample(s) were filtered prior to dissolved metal analysis.
The metal concentrations reported are those determined on the TCLP leachate. Extraction Fluid #1 pH 4.88 - 4.98.

Analytical Results

Sub-Matrix: **TCLP LEACHATE**

Compound	CAS Number	LOR	Unit	Client sample ID: 20111117S1	20111117S2	20111117S3		
				Client sampling date / time: [17-NOV-2011]	[17-NOV-2011]	[17-NOV-2011]		
				HK1128104-001	HK1128104-002	HK1128104-003		
EG: Metals and Major Cations - Filtered								
EG020: Lead	7439-92-1	0.5	mg/L	<0.5	<0.5	<0.5		
Sample Preparation Method								
E-TCLP: Extraction Fluid Number	----	-	--	1	1	1		

Laboratory Duplicate (DUP) Report

Matrix: **WATER**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report: LOR	Unit	Original Result	Duplicate Result	RPD (%)
EG: Metals and Major Cations - Filtered (QC Lot: 2072787)								
HK1127503-002	Anonymous	**EG020: Lead**	7439-92-1	0.1	mg/L	0.6	0.6	0.0
HK1128102-006	Anonymous	**EG020: Lead**	7439-92-1	0.5	mg/L	<0.5	<0.5	0.0

Method Blank (MB), Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report

Matrix: **WATER**

Method: Compound	CAS Number	Method Blank (MB) Report: LOR	Unit	Result	Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report: Spike Concentration	Spike Recovery (%): LCS	DCS	Recovery Limits (%): Low	High	RPD (%): Value	Control Limit
EG: Metals and Major Cations - Filtered (QC Lot: 2072787)											
EG020: Lead	7439-92-1	0.001	mg/L	<0.1	1 mg/L	96.5	----	84	108	----	**----**

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report

Matrix: **WATER**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report: Spike Concentration	Spike Recovery (%): MS	MSD	Recovery Limits (%): Low	High	RPD (%): Value	Control Limit
EG: Metals and Major Cations - Filtered (QC Lot: 2072787)										
HK1127503-001	Anonymous	**EG020: Lead**	7439-92-1	1 mg/L	98.3	98.5	75	125	0.2	----

CHAIN OF CUSTODY DOCUMENTATION

H 028005

ALS Laboratory Group

CLIENT: MOTT MACDONALD HONG KONG LIMITED
ADDRESS / OFFICE: 20/F Two Landmark East 100 How Ming Street, Kwun Tong
PROJECT MANAGER (PM): MS. JULIA CHAN
PROJECT ID: 221005
SITE: WO Shang Wai, Yuen Long
RESULTS REQUIRED (Date):

SAMPLER:
MOBILE:
PHONE 28285769
EMAIL REPORT TO: julia.chan@mottmac.com.hk
EMAIL INVOICE TO: (if different to report)
P.O. NO.:
QUOTE NO.:

ANALYSIS REQUIRED including SUITES (note - suite codes must be listed to attract suite prices)

FOR LABORATORY USE ONLY
COOLER SEAL (circle appropriate)
Intact: Yes No N/A
SAMPLE TEMPERATURE
CHILLED: (Yes) No

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

Notes: e.g. Highly contaminated samples
e.g. "High PAHs expected"
Extra volume for QC or trace LORs etc.

ALS ID	SAMPLE ID	MATRIX	DATE	Time	Type / Code	Total bottles	TCLP, Lead
1	20111028S1		28-Oct-2011		Plastic Bag		✓
2	20111031S1		31-Oct-2011		Plastic Bag		✓
3	20111031S2		31-Oct-2011		Plastic Bag		✓
4	20111031S3		31-Oct-2011		Plastic Bag		✓
5	20111101S1		1-Nov-2011		Plastic Bag		✓
6	20111101S2		1-Nov-2011		Plastic Bag		✓
7	20111101S3		1-Nov-2011		Plastic Bag		✓

RELINQUISHED BY:		RECEIVED BY		METHOD OF SHIPMENT
Name: Kon	Date: 18/11/11	Name: Hung	Date: 18/11/11	Con' Note No:
Of: The Polytechnic University of Hong Kong	Time: 17:30	Of: ALS	Time: 17:30	
Name:	Date:	Name:	Date:	Transport Co:
Of:	Time:	Of:	Time:	

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; V = VOA Vial HCl Preserved; VS = VOA Vial Sulphuric Preserved; SG = Sulfuric Preserved Amber Glass; H = HCl Preserved Plastic; HS = HCl Preserved Speciation Bottle; SP = Sulfuric Preserved Plastic; F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottle; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soil; B = Unpreserved Bag.

ALS Laboratory Group

WHITE - LAB COPY
YELLOW - CUSTOMER COPY
PINK - BOOK COPY

CHAIN OF CUSTODY DOCUMENTATION

H 028006

ALS Laboratory Group

CLIENT: MOTT MACDONALD HONG KONG LIMITED
ADDRESS / OFFICE: 20/F Two Landmark East, 100 How Ming Street, Kwun Tong
PROJECT MANAGER (PM): MS. JULIA CHAN
PROJECT ID: 221005
SITE: WO Shang Wai, Yuen Long
RESULTS REQUIRED (Date):

SAMPLER:
MOBILE:
PHONE 28285769
EMAIL REPORT TO: julia.chan@mottmac.com.hk
EMAIL INVOICE TO: (if different to report)
P.O. NO.:
QUOTE NO.:

ANALYSIS REQUIRED including SUITES (note - suite codes must be listed to attract suite prices)

FOR LABORATORY USE ONLY
COOLER SEAL (circle appropriate)
Intact: Yes No N/A
SAMPLE TEMPERATURE
CHILLED: (Yes) No

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

Notes: e.g. Highly contaminated samples
e.g. "High PAHs expected"
Extra volume for QC or trace LORs etc.

ALS ID	SAMPLE ID	MATRIX	DATE	Time	Type / Code	Total bottles	TCLP, Lead
1	20111102S1		2-Nov-2011		Plastic Bag		✓
2	20111102S2		2-Nov-2011		Plastic Bag		✓
3	20111102S3		2-Nov-2011		Plastic Bag		✓
4	20111103S1		3-Nov-2011		Plastic Bag		✓
5	20111103S2		3-Nov-2011		Plastic Bag		✓
6	20111103S3		3-Nov-2011		Plastic Bag		✓
7	20111103S4		3-Nov-2011		Plastic Bag		✓
8	20111103S5		3-Nov-2011		Plastic Bag		✓

RELINQUISHED BY:		RECEIVED BY		METHOD OF SHIPMENT
Name: Kon	Date: 18/11/11	Name: Hung	Date: 18/11/11	Con' Note No:
Of: The Polytechnic University of Hong Kong	Time: 17:30	Of: ALS	Time: 17:30	
Name:	Date:	Name:	Date:	Transport Co:
Of:	Time:	Of:	Time:	

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; V = VOA Vial HCl Preserved; VS = VOA Vial Sulphuric Preserved; SG = Sulfuric Preserved Amber Glass; H = HCl Preserved Plastic; HS = HCl Preserved Speciation Bottle; SP = Sulfuric Preserved Plastic; F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottle; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soil; B = Unpreserved Bag.

ALS Laboratory Group

WHITE - LAB COPY
YELLOW - CUSTOMER COPY
PINK - BOOK COPY

COC Page 1 of 1

CHAIN OF CUSTODY DOCUMENTATION

H 028007

ALS Laboratory Group

CLIENT: MOTT MACDONALD HONG KONG LIMITED
ADDRESS / OFFICE: 2/F Two Landmark East, 100 How Ming Street, Kwun Tong
PROJECT MANAGER (PM): MS. JULIA CHAN
PROJECT ID: 221005
SITE: Wo Shang Wai, Yuen Long
RESULTS REQUIRED (Date): P.O. NO.: QUOTE NO.:

SAMPLER:
MOBILE:
PHONE 28285769
EMAIL REPORT TO: julia.chan@mottmac.com, hk
EMAIL INVOICE TO: (if different to report)

ANALYSIS REQUIRED including SUITES(note - suite codes must be listed to attract suite prices)

FOR LABORATORY USE ONLY:
COOLER SEAL (circle appropriate)
Intact: Yes No N/A
SAMPLE TEMPERATURE
CHILLED: (Yes) No

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

Notes: e.g. Highly contaminated samples
e.g. "High PAHs expected"
Extra volume for QC or trace LORs etc.

ALS ID	SAMPLE ID	MATRIX	DATE	Time	Type / Code	Total bottles	TCLP, Lead
1	2011 11 04 S1		4-Nov-2011		Plastic Bag		✓
2	2011 11 04 S2		4-Nov-2011		Plastic Bag		✓
3	2011 11 04 S3		4-Nov-2011		Plastic Bag		✓
4	2011 11 05 S1		5-Nov-2011		Plastic Bag		✓
5	2011 11 05 S2		5-Nov-2011		Plastic Bag		✓
6	2011 11 05 S3		5-Nov-2011		Plastic Bag		✓

RELINQUISHED BY:		RECEIVED BY		METHOD OF SHIPMENT
Name: Kou	Date: 8/11/2011	Name: Hung	Date: 8/11/2011	Con' Note No:
Of: The Polytechnic University of Hong Kong	Time: 17:30	Of: ALS	Time: 17:30	
Name:	Date:	Name:	Date:	Transport Co:
Of:	Time:	Of:	Time:	

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; V = VOA Vial HCl Preserved; VS = VOA Vial Sulphuric Preserved; SG = Sulfuric Preserved Amber Glass; H = HCl Preserved Plastic; HS = HCl Preserved Speciation Bottle; SP = Sulfuric Preserved Plastic; F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottle; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soil; B = Unpreserved Bag.

ALS Laboratory Group

WHITE - LAB COPY
YELLOW - CUSTOMER COPY
PINK - BOOK COPY

COC Page 1 of 1

CHAIN OF CUSTODY DOCUMENTATION

H 028008

ALS Laboratory Group

CLIENT: MOTT MACDONALD HONG KONG LTD.
ADDRESS / OFFICE: 2/F Two Landmark East, 100 How Ming Street, Kwun Tong
PROJECT MANAGER (PM): MS. JULIA CHAN
PROJECT ID: 221005
SITE: Wo Shang Wai, Yuen Long
RESULTS REQUIRED (Date): P.O. NO.: QUOTE NO.:

SAMPLER:
MOBILE:
PHONE 28285769
EMAIL REPORT TO: julia.chan@mottmac.com.hk
EMAIL INVOICE TO: (if different to report)

ANALYSIS REQUIRED including SUITES(note - suite codes must be listed to attract suite prices)

FOR LABORATORY USE ONLY:
COOLER SEAL (circle appropriate)
Intact: Yes No N/A
SAMPLE TEMPERATURE
CHILLED: (Yes) No

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

Notes: e.g. Highly contaminated samples
e.g. "High PAHs expected"
Extra volume for QC or trace LORs etc.

ALS ID	SAMPLE ID	MATRIX	DATE	Time	Type / Code	Total bottles	TCLP, Lead
1	2011 11 07 S1		7-Nov-2011		Plastic Bag		✓
2	2011 11 07 S2		7-Nov-2011		Plastic Bag		✓
3	2011 11 07 S3		7-Nov-2011		Plastic Bag		✓
4	2011 11 16 S1		16-Nov-2011		Plastic Bag		✓
5	2011 11 16 S2		16-Nov-2011		Plastic Bag		✓
6	2011 11 16 S3		16-Nov-2011		Plastic Bag		✓

RELINQUISHED BY:		RECEIVED BY		METHOD OF SHIPMENT
Name: Kou	Date: 30/11/2011	Name: Hung	Date: 30/11/2011	Con' Note No:
Of: The Polytechnic University of Hong Kong	Time: 12:00	Of: ALS	Time: 12:00	
Name:	Date:	Name:	Date:	Transport Co:
Of:	Time:	Of:	Time:	

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; V = VOA Vial HCl Preserved; VS = VOA Vial Sulphuric Preserved; SG = Sulfuric Preserved Amber Glass; H = HCl Preserved Plastic; HS = HCl Preserved Speciation Bottle; SP = Sulfuric Preserved Plastic; F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottle; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soil; B = Unpreserved Bag.

ALS Laboratory Group

WHITE - LAB COPY
YELLOW - CUSTOMER COPY
PINK - BOOK COPY

COC Page 1 of 1

CHAIN OF CUSTODY DOCUMENTATION

H 028009

ALS Laboratory Group

CLIENT: MOTT MACDONALD HONG KONG LTD.	SAMPLER:
ADDRESS / OFFICE: 2/F, TWO Landmark East, 100 How ming Street, Kwun Tong	MOBILE:
PROJECT MANAGER (PM): Ms. JULIA CHAN	PHONE 28285769
PROJECT ID: 221005	EMAIL REPORT TO: julia.chan@mottmac.com.hk
SITE: WO Shang Wai, Yuen Long P.O. NO.:	EMAIL INVOICE TO: (if different to report)
RESULTS REQUIRED (Date): QUOTE NO.:	ANALYSIS REQUIRED including SUITES (note - suite codes must be listed to attract suite prices)

FOR LABORATORY USE ONLY
COOLER SEAL (circle appropriate)
Intact: Yes No N/A
SAMPLE TEMPERATURE
CHILLED: (Yes) No

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

Notes: e.g. Highly contaminated samples
e.g. "High PAHs expected"
Extra volume for QC or trace LORs etc.

SAMPLE INFORMATION (note: S = Soil, W=Water)					CONTAINER INFORMATION		TCLP, Lead
ALS ID	SAMPLE ID	MATRIX	DATE	Time	Type / Code	Total bottles	
1	2011111751		17-NOV-2011		Plastic Bag		✓
2	2011111752		17-NOV-2011		Plastic Bag		✓
3	2011111753		17-NOV-2011		Plastic Bag		✓

RELINQUISHED BY:		RECEIVED BY		METHOD OF SHIPMENT
Name: ICON	Date: 30/11/2011	Name: Hung	Date: 30/11/2011	Con' Note No:
Of: The Polytechnic University of Hong Kong	Time: 13:00	Of: ALS	Time: 13:00	
Name:	Date:	Name:	Date:	Transport Co:
Of:	Time:	Of:	Time:	

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; V = VOA Vial HCl Preserved; VS = VOA Vial Sulphuric Preserved; SG = Sulfuric Preserved Amber Glass; H = HCl Preserved Plastic; HS = HCl Preserved Speciation Bottle; SP = Sulfuric Preserved Plastic; F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottle; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soil; B = Unpreserved Bag.

ALS Laboratory Group

WHITE - LAB COPY
YELLOW - CUSTOMER COPY
PINK - BOOK COPY

COC Page 1 of 1

Proposed Comprehensive Development
at Wo Shang Wai, Yuen Long
Remediation Report (Rev. A)

Appendix F. Photographic Records of Decommissioning of Plants and Equipment

221005/ENL/ENL/AB11/A Jan 2012
P:\Hong Kong\ENL\PROJECTS\221005 Wo Shang Wai_Additional\Land Contamination\Land Contamination Assessment _2009\Remediation Report\Remediation Report Rev A.doc

Photographic Records of Decommissioning of Plants and Equipment

	
Photo 01 – The treated soil was covered with tarpaulin sheet and placed at a paved area for temporary storage.	Photo 02 – The treated soil was started to backfill to the proposed location.
	
Photo 03 – All the treated soil was backfilled to the area.	Photo 04 – The treated soil was covered by ordinary soil.

Appendix 6.2

Site Photos of STP Project Area

Appendix 6.2 – Site Photos of STP Project Area

Year	Site Photos of STP Project Area
2013	
2014	
2015	
2016	
2017	

Appendix 6.3
Approval Letter of SSTP from EPD

本署檔案 OUR REF: EP 60/G1/12-450
來函檔案 YOUR REF: JFP/EC/JC/am/T361494/01.03_L-003
電話 TEL NO.: 2835 1189
傳真 FAX NO.: 2305 0453
電郵 E-MAIL:
網址 HOMEPAGE: http://www.epd.gov.hk

Environmental Protection Department
Environmental Compliance Division
Territorial Control Office
28/F, Southorn Centre
130 Hennessy Road
Wan Chai, Hong Kong

環境保護署
環保法規管理科
總區辦事處
香港灣仔
軒尼詩道一百三十號
修頓中心廿八樓

23 October, 2015

Mott MacDonald
20/F AIA Kowloon Tower,
Landmark East,
100 How Ming Street,
Kwun Tong, Kowloon
(Attn: Mr. Eric Ching / Divisional Director)

Dear Sir,

Proposed Comprehensive Development at Wo Shang Wai, Yuen Long
Submission of Sediment Sampling and Testing Plan

With reference to your letter Ref: JFP/EC/JC/am/T361494/01.03_L-003 dated 14 October 2015 which was received on 19 October 2015, I have no further comments on your sediment sampling and testing plan.

Enclosed please find a proforma "Record of Sediment Sampling & Collection under ETWB TCW No. 34/2002" which has to be duly completed and included in the PSQR/SQR to be submitted to DEP.

As you are a customer commissioning a laboratory to provide the tests accredited by HOKLAS, please explicitly convey preferably in writing to the laboratory the instructions listed in Annex I that the laboratory should also pay attention to.

Upon completion of the chemical screening tests, you are advised to submit the test results together with the biological screening proposal (if needed) to DEP for approval as soon as possible taking into account the maximum holding time of 8 weeks for sediment before commencement of biological tests. DEP would normally take about 5 working days to consider biological test proposal for approval. I would suggest that you liaise with your employed laboratory to work out the logistics and timing of sample collection, testing and result reporting / approval seeking in advance.

Should you have any queries to the above, please let me know.

Yours faithfully,

(Jackson W. C. LING)
Environmental Protection Officer
for Director of Environmental Protection

Encl.

c.c. Secretary of MFC, CEDD (Attn: Mr Derek Lau Fax No.: 2714 0113) – w/o encl.
DEP (Attn: Mr William Lung, E(SA)33 Fax No. 2591 0558) – w/o encl.

Appendix 6.4
Chemical Testing Results

Appendix 6.4 – Chemical Testing Results

Table A: Chemical Testing Results of Sediment Samples at Sampling Locations BH04b

Analyte Description		Silver	Arsenic	Cadmium	Chromium	Copper	Nickel	Lead	Zinc	Mercury	Total Polychlorinated biphenyls	Low M.W. PAHs	High M.W. PAHs	Tributyl Tin	Classification
Unit (In dry Wt basis)		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	µg/kg	µg/kg	µg/kg	ug TBT/L	
Reporting Limits		0.1	1	0.2	1	1	1	1	1	0.05	18	550	1700	0.015	
Lower Chemical Exceedance Level (LCEL)		1	12	1.5	80	65	40	75	200	0.5	23	550	1700	0.15	
Upper Chemical Exceedance Level (UCEL)		*2*	*42*	*4*	*160*	*110*	*40*	*110*	*270*	*1*	*180*	*3160*	*9600*	*0.15*	
10 x (LCEL)		10	120	15	800	650	400	750	2000	5	230	5500	17000	1.5	
Sample Description															
Sample ID	**Sampling Date**														
BH04b (8.50 - 9.45M) [1][2]	26/01/2016	0.1	*46*	<0.2	28	23	15	67	113	<0.05	<18	<550	<1700	--	*H*
BH04b (9.50 - 10.45M)	26/01/2016	<0.1	22	<0.2	27	12	12	41	69	<0.05	<18	<550	<1700	--	M
BH04b (10.50 - 10.95M)	26/01/2016	0.1	23	<0.2	24	13	12	58	73	<0.05	<18	<550	<1700	--	M

Remarks:

[1] The existing ground level of BH04b is +9.53 mPD.

[2] BH04b (8.50 – 9.45m) refers to the sediment sample that is collected from 8.50 to 9.45m below the existing ground level, similar for BH04b (9.50 – 10.45m) and BH04b (10.50 – 10.95m).

Appendix 6.5
Biological Testing Results

Appendix 6.5 – Biological Testing Results

Table B: Biological Testing Results of Sediment Samples at Sampling Locations BH04b

Sample ID	Overall Result	10-day burrowing amphipod toxicity test	20-day burrowing polychaete toxicity test	48-60-hour bivalve larvae toxicity test
BH04b (9.50 - 10.45M)	**Pass**	Pass	Pass	Pass
BH04b (10.50 - 10.95M)	**Pass**	Pass	Pass	Pass

Appendix 6.6
Approval Letter of SQR from EPD

本署檔案 OUR REF: EP 60/G1/12-450
來函檔案 YOUR REF: JFP/EC/JC/pl/T361494/02.03_L-007
電　話 TEL NO.: 2835 1189
傳　真 FAX NO.: 2305 0453
電　郵 E-MAIL:
網　址 HOMEPAGE: http://www.epd.gov.hk

Environmental Protection Department
Environmental Compliance Division
Territorial Control Office
28/F, Southorn Centre
130 Hennessy Road
Wan Chai, Hong Kong

環境保護署
環保法規管理科
總區辦事處
香港灣仔
軒尼詩道一百三十號
修頓中心廿八樓

5 October 2016

Mott MacDonald Hong Kong Limited
20/F, AIA Kowloon Tower,
Landmark East,
100 How Ming Street,
Kwun Tong, Kowloon
(Attn: Mr Thomas Chan / Associate Director)

Dear Sir/Madam,

Proposed Comprehensive Development at Wo Shang Wai, Yuen Long
Submission of Final Sediment Quality Report

I refer to your letter JFP/EC/JC/pl/T361494/02.03_L-007 dated 13 September 2016 enclosing the final sediment quality report of the captioned project.

I have no objection to the classification of marine sediments (except for BH06b (11.5-11.95m) which to be reused on-site) as provided in the final sediment quality report (SQR) and as shown in Table 5.2 and Figure 5.1. Since the actual date of commencement of sampling is 10 December 2015, the SQR will be reliable till **December 2018**.

Please note that only marine sediment/deposit covered by this SQR could be considered for marine disposal as a last resort. The project proponent should submit necessary details to seek the Secretary of MFC's agreement on the disposal volume and allocation of sediment disposal space before proceeding to the DASO permit application.

Should you have any queries to the above, please do not hesitate to call me at 2835 1189.

Yours faithfully,

(Jackson LING)
Environmental Protection Officer
for Director of Environmental Protection

c.c. Secretary of MFC (Attn: Ms Kit-man LI Fax No. 2714 0113)

Appendix 7.1
Plates – Representative Photographs of Habitats

Representative Photographs of Habitats

Plate 1 Wetland Restoration Area

Plate 2 Fishpond

Plate 3 Abandoned Fishpond

Plate 4 Drainage Channel / Ditch

Plate 5 Marsh / Reedbed

Plate 6 Plantation

Plate 7 Developed Area

Appendix 7.2

Bird Species Recorded in Major Habitats within the Project Site and the Study Area

Appendix 7.2. Bird species recorded in major habitats within the Project Site and the Study Area.

Species	Level of concern[2]	Project Site[2]					Study Area[2]			
		Grassland existed within the Project Site[3]	Wetland existed within the Project Site[3]	Drainage Channels/ Ditches	Developed / Disturbed Area	Wetland Restoration Area	Freshwater Marsh/ Reedbed	Active/ Abandoned Fishponds	Drainage Channels/ Ditches	Developed / Disturbed Area
Little Grebe *Tachybaptus ruficollis*	LC		✓			✓		✓		
Great Cormorant *Phalacrocorax carbo*	PRC		✓	✓		✓		✓	✓	
Grey Heron *Ardea cinerea*	PRC	✓	✓	✓		✓		✓	✓	
Great Egret *Egretta alba*	PRC (RC)		✓	✓		✓		✓	✓	
Intermediate Egret *Egretta intermedia*	RC		✓			✓		✓		
Little Egret *Egretta garzetta*	PRC (RC)	✓	✓	✓		✓		✓	✓	
Eastern Cattle Egret *Bubulcus coromandus*	(LC)	✓	✓			✓		✓	✓	
Chinese Pond Heron *Ardeola bacchus*	PRC (RC)	✓		✓		✓		✓	✓	
Striated Heron *Butorides striatus*	(LC)							✓		
Black-crowned Night Heron *Nycticorax nycticorax*	(LC)					✓		✓	✓	
Purple Heron *Ardea purpurea*	RC					✓				
Black-faced Spoonbill *Platalea minor*	PGC		✓			✓		✓	✓	
Yellow Bittern *Ixobrychus sinensis*	(LC)					✓		✓		
Cinnamon Bittern *Ixobrychus cinnamomeus*	LC					✓				
Tufted Duck *Aythya fuligula*	LC					✓				
Northern Shoveler *Anas clypeata*	RC					✓				
Northern Pintail *Anas acuta*	RC		✓					✓		
Common Teal *Anas crecca*	RC		✓					✓	✓	
Eurasian Wigeon *Anas penelope*	RC		✓			✓		✓		
Gadwall *Anas strepera*								✓		
Osprey *Pandion haliaetus*	RC		✓			✓		✓		
Black Kite *Milvus migrans*	(RC)	✓	✓		✓	✓		✓		✓
Black-winged Kite *Elanus caeruleus*	LC					✓				
Eastern Imperial Eagle *Aquila heliaca*	GC					✓				
Crested Serpent Eagle *Spilornis cheela*	(LC)					✓				
White-bellied Sea Eagle *Haliaeetus leucogaster*	(RC)							✓		
Eastern Buzzard *Buteo japonicus*		✓			✓			✓		✓
Common Kestrel *Falco tinnunculus*		✓						✓		✓
Common Moorhen *Gallinula chloropus*						✓		✓	✓	

Species	Level of concern[2]	Project Site[1]					Study Area[1]			
		Grassland existed within the Project Site[3]	Wetland existed within the Project Site[3]	Drainage Channels/ Ditches	Developed / Disturbed Area	Wetland Restoration Area	Freshwater Marsh/ Reedbed	Active/ Abandoned Fishponds	Drainage Channels/ Ditches	Developed / Disturbed Area
White-breasted Waterhen *Amaurornis phoenicurus*		✓		✓	✓	✓		✓	✓	✓
Baillon's Crake *Porzana pusilla*	LC					✓				
Watercock *Gallicrex cinerea*	RC					✓				
Japanese Quail *Coturnix japonica*	LC					✓				
Pheasant-tailed Jacana *Hydrophasianus chirurgus*	LC					✓				
Greater Painted Snipe *Rostratula benghalensis*	LC					✓				
Whiskered Tern *Chlidonias hybrida*	LC					✓		✓		
White-winged Tern *Chlidonias leucopterus*	LC							✓		
Black-winged Stilt *Himantopus himantopus*	RC					✓		✓		
Pied Avocet *Recurvirostra avosetta*	RC					✓		✓		
Oriental Pratincole *Glareola maldivarum*	LC	✓						✓		
Pacific Golden Plover *Pluvialis fulva*	LC					✓				
Kentish Plover *Charadrius alexandrinus*	RC					✓				
Little Ringed Plover *Charadrius dubius*	(LC)		✓			✓		✓		
Spotted Redshank *Tringa erythropus*	RC					✓				
Common Redshank *Tringa totanus*	RC					✓				
Common Greenshank *Tringa nebularia*	RC					✓				
Green Sandpiper *Tringa ochropus*		✓				✓		✓		
Common Sandpiper *Actitis hypoleucos*						✓		✓		
Wood Sandpiper *Tringa glareola*	LC					✓		✓		
Marsh Sandpiper *Tringa stagnatilis*	RC							✓		
Sharp-tailed Sandpiper *Calidris dubius*	LC							✓		
Pintail/Swinhoe's Snipe* *Gallinago stenura / G. megala*	LC*					✓				
Common Snipe *Gallinago gallinago*						✓			✓	
Temminck's Stint *Calidris temminckii*	LC					✓				
Black-headed Gull *Larus ridibundus*	PRC		✓					✓		
Indian Cuckoo *Cuculus micropterus*								✓		
Plaintive Cuckoo *Cacomantis merulinus*								✓		

Species	Level of concern[2]	Project Site[1]					Study Area [1]			
		Grassland existed within the Project Site[3]	Wetland existed within the Project Site[3]	Drainage Channels/ Ditches	Developed / Disturbed Area	Wetland Restoration Area	Freshwater Marsh/ Reedbed	Active/ Abandoned Fishponds	Drainage Channels/ Ditches	Developed / Disturbed Area
Rock Dove *Columba livia*		✓						✓		
Oriental Turtle Dove *Streptopelia orientalis*		✓						✓		
Eurasian Collared Dove *Streptopelia decaocto*										
Spotted Dove *Streptopelia chinensis*		✓					✓	✓	✓	✓
Asian Koel *Eudynamys scolopaceus*					✓			✓		✓
Greater Coucal *Centropus sinensis*			✓					✓		
Savanna Nightjar Caprimulgus affinis		✓				✓				
Eurasian Eagle Owl *Bubo bubo*	RC					✓				
Pacific Swift *Apus pacificus*	(LC)	✓	✓	✓				✓		✓
Common Swift *Apus apus*		✓	✓	✓	✓			✓	✓	✓
House Swift *Apus nipalensis*						✓				
Pied Kingfisher *Ceryle rudis*	(LC)		✓			✓		✓		
Common Kingfisher *Alcedo atthis*						✓		✓		
White-throated Kingfisher *Halcyon smyrnensis*	(LC)		✓			✓		✓	✓	
Barn Swallow *Hirundo rustica*		✓	✓	✓			✓	✓	✓	✓
Red-rumped Swallow *Hirundo dauurica*		✓	✓		✓			✓		✓
White Wagtail Motacilla alba		✓	✓	✓		✓	✓	✓	✓	✓
Grey Wagtail Motacilla cinerea		✓	✓	✓				✓		✓
Eastern Yellow Wagtail *Motacilla flava*		✓	✓	✓		✓		✓	✓	
Richard's Pipit *Anthus richardi*		✓	✓					✓		
Olive-backed Pipit *Anthus hodgsoni*		✓	✓		✓	✓		✓		✓
Red-throated Pipit *Anthus cervinus*	LC							✓		
Buff-bellied Pipit *Anthus rubescens*	LC					✓				
Red-whiskered Bulbul *Pycnonotus jocosus*		✓	✓	✓	✓		✓	✓		✓
Chinese Bulbul *Pycnonotus sinensis*		✓	✓	✓	✓		✓	✓	✓	✓
Sooty-headed Bulbul *Pycnonotus aurigaster*		✓								
Long-tailed Shrike *Lanius schach*		✓	✓		✓			✓		✓
Oriental Magpie Robin *Copsychus saularis*				✓				✓	✓	✓
Stejneger's Stonechat *Saxicola stejnegeri*		✓	✓	✓				✓	✓	
Daurian Redstart *Phoenicurus auroreus*								✓		

Species	Level of concern[2]	Project Site[1]					Study Area[1]			
		Grassland existed within the Project Site =	Wetland existed within the Project Site[3]	Drainage Channels/ Ditches	Developed / Disturbed Area	Wetland Restoration Area	Freshwater Marsh/ Reedbed	Active/ Abandoned Fishponds	Drainage Channels/ Ditches	Developed / Disturbed Area
Masked Laughingthrush *Garrulax perspicillatus*		✓		✓				✓		✓
Oriental Reed Warbler *Acrocephalus orientalis*		✓				✓				
Zitting Cisticola *Cisticola juncidis*	LC	✓				✓		✓	✓	
Black-browed Reed Warbler *Acrocephalus bistrigiceps*							✓			
Yellow-bellied Prinia *Prinia flaviventris*		✓	✓	✓		✓	✓	✓	✓	✓
Plain Prinia *Prinia inornata*		✓	✓	✓				✓		✓
Common Tailorbird *Orthotomus sutorius*		✓						✓		
Dusky Warbler *Phylloscopus fuscatus*		✓	✓					✓		✓
Great Tit *Parus minor*								✓		
Pallas's Grasshopper Warbler *Locustella certhiola*	LC					✓				
Thick-billed Warbler *Acrocephalus aedon*	LC					✓				
Yellow-browed Warbler *Phylloscopus inornatus*								✓		
Japanese White-eye *Zosterops japonicus*					✓			✓		
Little Bunting *Emberiza pusilla*								✓		
Black-faced Bunting *Emberiza spodocephala*		✓								
White-rumped Munia *Lonchura striata*			✓					✓		✓
Scaly-breasted Munia *Lonchura punctulata*			✓	✓				✓		✓
Eurasian Tree Sparrow *Passer montanus*		✓			✓			✓		✓
Greater Spotted Eagle *Clanga clanga*	GC					✓				
Peregrine Falcon *Falco peregrinus*	LC					✓		✓		
Eurasian Hobby *Falco subbuteo*	(LC)					✓				
Red-billed Starling *Sturnus sericeus*	GC		✓			✓	✓	✓	✓	✓
White-cheeked Starling *Spodiopsar cineraceus*	PRC					✓		✓		
Black-collared Starling *Sturnus nigircollis*		✓	✓					✓	✓	✓
White-shouldered Starling *Sturnus sinensis*	(LC)	✓	✓			✓		✓		
Common Myna *Acridotheres tristis*								✓		✓
Crested Myna *Acridotheres cristatellus*		✓	✓		✓		✓	✓	✓	✓
Hair-crested Drongo *Dicrurus hottentottus*		✓						✓		
Black Drongo *Dicrurus macrocercus*		✓						✓		
Azure-winged Magpie *Cyanopica cyanus*								✓		

Species	Level of concern[2]	Project Site[1]					Study Area[1]			
		Grassland existed within the Project Site[3]	Wetland existed within the Project Site[3]	Drainage Channels/ Ditches	Developed / Disturbed Area	Wetland Restoration Area	Freshwater Marsh/ Reedbed	Active/ Abandoned Fishponds	Drainage Channels/ Ditches	Developed / Disturbed Area
Common Magpie *Pica pica*		✓	✓	✓				✓	✓	✓
Large-billed Crow *Corvus macrorhynchus*		✓						✓		✓
Collared Crow *Corvus torquatus*	LC		✓					✓		✓
Chinese Penduline Tit *Remiz consobrinus*	RC					✓				
Grey Bush Chat *Saxicola ferreus*	LC	✓								

Notes for Appendix 7.2

(1) Data compiled from WSW EIA, XRL EIA, XRL EM&A & WSW Biannual EM&A.

(2) Level of Concern refers to Fellowes *et al*., 2002: LC = Local Concern, RC = Regional Concern, PRC = Potential Regional Concern, PGC = Potential Global Concern, GC = Global Concern. Letters in parentheses indicate that the assessment is on the basis of restrictedness in breeding and/or roosting sites rather than in general occurrence.

(3) Habitat no longer exists as these habitats are converted into Developed / Disturbed Habitat within the construction site.

* Species generally inseparable in field. Conservation status assessment refers to Swinhoe's Snipe *G. megala.*

Appendix 7.3

Mammal Species Recorded in Major Habitats within the Project Site and the Study Area

Appendix 7.3. Mammal species recorded in major habitats within the Project Site and the Study Area.

				Project Site[1]					Study Area[1]			
Species	**Distribution in Hong Kong[2]**	**Level of Concern[3]**	**Protection status[4]**	**Grassland existed within the Project Site[5]**	**Wetland existed within the Project Site[5]**	**Drainage Channels/ Ditches**	**Developed / Disturbed Area**	**Wetland Restoration Area**	**Freshwater Marsh/ Reedbed**	**Active/ Abandoned Fishponds**	**Drainage Channels/ Ditches**	**Developed / Disturbed Area**
Small Asian Mongoose *Herpestes javanicus*	Uncommon	-	Cap. 170					✓		✓		
Musk Shrew *Suncus murinus*	Common	-	-		✓							
House Mouse *Mus musculus*	Common	-	-		✓							
Ryukyu Mouse *Mus caroli*	Rare	-	-		✓							
Brown Rat *Rattus norvegicus*	Common	-	-		✓							
Japanese Pipistrelle *Pipistrellus abramus*	Very common	(LC)	Cap. 170		✓			✓				
Short-nosed Fruit Bat *Cynopterus sphinx*	Very common	-	Cap. 170									✓
Bat Indeterminated spp.	-	-	Cap. 170					✓				
Leopard Cat *Prionailurus bengalensis*	Uncommon	-	Cap. 170; CRDB: Vu							✓		

Notes for Appendix 7.3

(1) Data compiled from WSW EIA, XRL EIA, WSW Biannual EM&A & Shek 2006.

(2) Distribution in Hong Kong refers to AFCD. 2016.

(3) Level of Concern refers to Fellowes et al 2002. LC = Local Concern, RC = Regional Concern, PRC = Potential Regional Concern, PGC = Potential Global Concern, GC = Global Concern, Letter in parentheses indicate that the assessment is on the basis of restrictedness in breeding and/or roosting sites rather than in general occurrence.

(4) Protection status: Cap. 170 – Listed in Wild Animals Protection Ordinance (Cap.170); CRDB: Vu – Listed as Vulnerable in the China Red Databook of Endangered Animals.

(5) Habitat no longer exists as these habitats are converted into Developed / Disturbed Habitat within the construction site.

Appendix 7.4

Amphibian and Reptile Species Recorded in Major Habitats within the Project Site and the Study Area

Appendix 7.4. Amphibian and Reptile species recorded in in major habitats within the Project Site and the Study Area.

			Project Site[1]					Study Area[1]			
Species	**Distribution in Hong Kong[2]**	**Level of Concern[3]**	**Grassland existed within the Project Site[4]**	**Wetland existed within the Project Site[4]**	**Drainage Channels/ Ditches**	**Developed / Disturbed Area**	**Wetland Restoration Area**	**Freshwater Marsh/ Reedbed**	**Active/ Abandoned Fishponds**	**Drainage Channels/ Ditches**	**Developed / Disturbed Area**
Amphibian											
Asian Common Toad *Bufo melanostictus*	Abundant	-		✓	✓				✓	✓	✓
Asiatic Painted Frog *Kaloula pulchra pulchra*	Widely distributed	-		✓					✓		
Brown Tree Frog *Polypedates megacephalus*	Widely distributed	-		✓					✓		
Günther's Frog *Rana guentheri*	Widely distributed	-			✓				✓		
Paddy Frog *Fejervarya limnocharis*	Widely distributed	-		✓	✓		✓		✓		
Green Cascade Frog *Rana livida*	Widely distributed	-		✓					✓		
Butler's Pigmy Frog *Microhyla butleri*	Widely distributed	-		✓					✓		
Ornate Pigmy Frog *Microhyla ornata*	Widely distributed	-		✓					✓		
Chinese Bullfrog *Hoplobatrachus chinensis*	Widely distributed	LC					✓				
Reptile											
Chinese Soft-shelled Turtle *Pelodiscus sinensis*	Reservoirs and Fishponds in Deep Bay Area	GC*					✓				
Chinese Skink *Eumeces chinensis*	Widely distributed	-					✓				
Chinese Striped Terrapin *Ocadia sinensis*	Native but considered released in this study	-			✓						
Checkered Keelback *Xenochrophis piscator*	Widely distributed	-					✓		✓		
Red necked Keelback *Rhabdophis subminiatus helleri*	Widely distributed	-							✓		
Long-tailed Skink *Mabuya longicaudata*	Widely distributed	-								✓	

Notes for Appendix 7.4:

(1) Data compiled from WSW EIA, XRL EIA, WSW Biannual EM&A.

(2) Distribution refer to AFCD, 2017.

(3) Level of Concern refers to Fellowes *et al*. 2002. LC = Local Concern, RC = Regional Concern, PRC = Potential Regional Concern, PGC = Potential Global Concern, GC = Global Concern, Letter in parentheses indicate that the assessment is on the basis of restrictedness in breeding and/or roosting sites rather than in general occurrence.

(4) Habitats no longer exist as these habitats are converted into Developed / Disturbed Habitat within the construction site.

- Chinese soft-shelled Turtle *Pelodiscus sinensis* is also protected by Cap. 170 Wild Animals Protection Ordinance and listed as Vulnerable in IUCN (2017) and China Red Databook of Endangered Animals.

Appendix 7.5

Butterfly Species Recorded in Major Habitats within the Project Site and the Study Area

Appendix 7.5 Butterfly species recorded in major habitats within the Project Site and the Study Area.

Species	Commonness in Hong Kong[2]		Project Site[1]					Study Area[1]				
		Level of Concern[3]	Grassland existed within the Project Site[4]	Wetland existed within the Project Site[4]	Wetland Restoration Area	Drainage Channels/ Ditches	Developed / Disturbed Area	Freshwater Marsh/ Reedbed	Active/ Abandoned Fishponds	Drainage Channels/ Ditches	Developed / Disturbed Area	Plantation
Angled Castor *Ariadne ariadne*	Common	-	✓								✓	
Blue-spotted Crow *Euploea midamus*	Very Common	-	✓		✓							
Ceylon Blue Glassy Tiger *Ideopsis similis similis*	Very Common	-			✓							
Chocolate Royal *Remelana jangala mudra*	Very Common	-			✓							
Common Bluebottle *Graphium sarpedon sarpedon*	Very Common	-	✓						✓		✓	
Common Grass Yellow *Eurema hecabe*	Very Common	-	✓	✓		✓			✓		✓	
Common Hedge Blue *Acytolepis puspa gisca*	Common	-	✓									
Common Jay *Graphium doson*	Common	-			✓	✓						
Common Mime *Chilasa clytia*	Common	-	✓									
Common Mormon *Papilio polytes*	Very Common	-	✓	✓					✓	✓	✓	
Common Tiger *Danaus genutia genutia*	Common	-									✓	
Common Sailer *Neptis hylas hylas*	Very Common	-			✓				✓			
Danaid Egg-fly *Hypolimnas misippus*	Uncommon	LC		✓								
Dark-branded Bush Brown *Mycalesis mineus*	Very Common	-	✓	✓		✓			✓			
Formosan Swift *Borbo cinnara*	Common	-				✓					✓	
Great Egg-fly *Hypolimnas bolina*	Common	-				✓			✓	✓		
Great Mormon *Papilio polytes polytes*	Very Common	-		✓		✓						
Great Orange Tip Hebomoia glaucippe glaucippe	Common	-			✓							✓
Green Flash Artipe eryx eryx	Uncommon	-			✓							
Indian Cabbage White *Pieris canidia*	Very Common	-	✓	✓	✓	✓			✓	✓	✓	
Indian Fritillary Argyreus hyperbius hyperbius	Common	-			✓							
Large Faun *Faunis eumeus*	Common	-	✓									
Lemon Emigrant *Catopsilia pomona*	Common	-	✓		✓	✓			✓		✓	
Lime Blue *Chilades lajus*	Common	-	✓			✓						
Mottled Emigrant *Catopsilia pyranthe*	Very Common	-	✓									
Pale Grass Blue Pseudozizeeria maha serica	Very Common	-		✓		✓					✓	
Paris Peacock Papilio paris	Very Common	-			✓	✓	✓					
Red-base Jezebel Delias pasithoe pasithoe	Very Common	-	✓		✓							

Species	Commonness in Hong Kong[2]	Level of Concern[3]	Project Site					Study Area				
			Grassland existed within the Project Site[4]	Wetland existed within the Project Site[4]	Wetland Restoration Area	Drainage Channels / Ditches	Developed / Disturbed Area	Freshwater Marsh/ Reedbed	Active/ Abandoned Fishponds	Drainage Channels / Ditches	Developed / Disturbed Area	Plantation
Red Ring Skirt *Hestina assimilis assimilis*	Common	-			✓						✓	
Rustic *Cupha erymanthis*	Common	-			✓							
Skipper spp. Hesperiidae	-	-			✓							
Slate Flash *Rapala manea*	Common	-			✓							
Small Cabbage White *Pieris rapae crucivora*	Uncommon	-	✓									
Spangle *Papilio protenor protenor*	Very Common	-		✓								
Straight Five-ring *Ypthima lisandra*	Common	-	✓									
White-edged Blue Baron *Euthalia phemius*	Common	-		✓		✓	✓					
Yellow Orange-tip *Ixias pyrene*	Uncommon	-				✓						

Notes for Appendix 7.5:

(1) Data compiled from WSW EIA, XRL EIA & WSW Biannual EM&A.

(2) Commonness in Hong Kong refers to AFCD, 2017.

(3) Level of Concern refers to Fellowes *et al*., 2002. LC = Local Concern, RC = Regional Concern, PRC = Potential Regional Concern, PGC = Potential Global Concern, GC = Global Concern, Letter in parentheses indicate that the assessment is on the basis of restrictedness in breeding and/or roosting sites rather than in general occurrence.

(4) Habitat no longer exists as these habitats are converted into Developed / Disturbed Habitat within the construction site.

Appendix 7.6

Dragonfly Species Recorded in Major Habitats within the Project Site and the Study Area

Appendix 7.6 Dragonfly species recorded in major habitats within the Project Site and the Study Area

Species	Commonness in Hong Kong [2]	Level of Concern[3]	Project Site[1]					Study Area[1]				
			Grassland existed within the Project Site[4]	Wetland existed within the Project Site[4]	Wetland Restoration Area	Drainage Channels/ Ditches	Developed / Disturbed Area Ground	Freshwater Marsh/ Reedbed	Active/ Abandoned Fishponds	Drainage Channels/ Ditches	Developed / Disturbed Area	Plantation
Amber-winged Glider *Hydrobasileus croceus*	Common	-	✓									
Asian Amberwing *Brachythemis contaminata*	Abundant	-	✓	✓	✓	✓			✓			
Asian Pintail *Acisoma panorpoides*	Common				✓							
Asian Widow *Palpopleura sexmaculata*	Common	-		✓		✓						
Black-kneed Featherlegs *Pseudocopera ciliata*	Common				✓							
Black Threadtail *Prodasineura autumnalis*	Abundant	-		✓								
Blue Dasher *Brachydiplax chalybea flavovittata*	Common	-	✓		✓				✓			
Blue Percher *Diplacodes trivialis*	Abundant	-	✓	✓	✓				✓			
Blue Skimmer sp. *Orthetrum glaucum/ triangulare/luzonicum*	Common	-	✓	✓		✓		✓	✓	✓		
Common Bluetail *Ischnura senegalensis*	Abundant	-	✓	✓	✓	✓	✓		✓	✓	✓	
Common Red Skimmer *Orthetrum pruinosum*	Abundant	-	✓	✓		✓			✓	✓		
Crimson Darter *Crocothemis servilia*	Abundant	-	✓	✓	✓	✓	✓		✓	✓		
Crimson Dropwing *Trithemis aurora*	Abundant	-	✓	✓		✓			✓	✓		
Common Flangetail *Ictinogomphus pertinax*	Common	-			✓				✓			
Eastern Lilysquatter *Paracercion melanotum*	Common	-			✓							
Evening Skimmer *Tholymis tillarga*	Common	-				✓			✓			
Golden Flangetail *Sinictinogomphus clavatus*	Common	-							✓			
Green Skimmer *Orthetrum sabina*	Abundant	-	✓	✓	✓	✓	✓		✓			
Lesser Emperor *Anax parthenope*	Common	-	✓		✓	✓						
Marsh Skimmer *Orthetrum luzonicum*	Common	-			✓							
Orange-tailed Midget *Agriocnemis femina*	Abundant	-		✓	✓	✓			✓			
Orange-tailed Sprite *Ceriagrion auranticum*	Abundant	-		✓	✓	✓		✓	✓			
Pied Percher *Neurothemis tullia*	Common	-	✓	✓	✓	✓			✓			
Pied Skimmer *Pseudothemis zonata*	Common	-			✓				✓			
Ruby Darter *Rhodothemis rufa*	Common	-			✓							
Saddlebag Glider *Tramea virginia*	Abundant	-			✓				✓			
Scarlet Basker *Urothemis signata*	Common	LC	✓		✓	✓				✓		
Variegated Flutterer *Rhyothemis variegata*	Common	-	✓	✓	✓	✓			✓	✓		

Species	Commonness in Hong Kong [2]	Level of Concern[3]	Project Site[1]					Study Area[1]				
			Grassland existed within the Project Site[4]	Wetland existed within the Project Site[4]	Wetland Restoration Area	Drainage Channels/ Ditches	Developed / Disturbed Area	Freshwater Marsh/ Reedbed	Active/ Abandoned Fishponds	Drainage Channels/ Ditches	Developed / Disturbed Area	Plantation
Wandering Glider *Pantala flavescens*	Abundant	-	✓	✓	✓	✓	✓		✓			
Wandering Midget *Agriocnemis pygmaea*	Common	-			✓							
Yellow Featherlegs *Copera marginipes*	Abundant	-			✓							

Notes for Appendix 7.6:

(1) Data compiled from WSW EIA, XRL EIA & WSW Biannual EM&A.

(2) Commonness in Hong Kong refers to AFCD, 2017

(3) Level of Concern refers to Fellowes *et al*., 2002. LC = Local Concern, RC = Regional Concern, PRC = Potential Regional Concern, PGC = Potential Global Concern, GC = Global Concern, Letter in parentheses indicate that the assessment is on the basis of restrictedness in breeding and/or roosting sites rather than in general occurrence.

(4) Habitat no longer exists within the current Study Area as these habitats are converted into Developed / Disturbed Habitat within the construction site.

Appendix 8.1

Tree Assessment Schedule of Tree Groups within the Landscape Study Area

Appendix 8.1: Tree Assessment Schedule of Tree Groups within the Landscape Study Area

Species		%	Quantity	No. with Diameter at Breast Height [mm]				Height	Crown	Health	Form	Amenity
Botanical Name	**Chinese Name**			**95-149**	**150-499**	**500-999**	**>1000**	**[m]**	**[m]**	**(P/F/G)***	**(P/F/G)***	**(L/M/H)****
T-LR1	**Trees in Screen Planting**											
Acacia auriculiformis	耳果相思	6.9%	31	26	5	0	0	7 to 12	3 to 5	F	P to F	L to M
Acacia mangium	大葉相思	5.5%	25	22	3	0	0	7 to 11	3 to 6	P to F	P	L
Casuarina equisetifolia	木麻黃	8.8%	40	38	2	0	0	5 to 10	2 to 5	P to F	P to F	L to M
Cinnamomum camphora	樟樹	8.4%	38	38	0	0	0	5 to 8	2 to 7	F	F	L to M
Eucalyptus camaldulensis	赤桉	9.3%	42	20	22	0	0	10 to 13	3 to 5	F	P to F	L to M
Ficus microcarpa	細葉榕	2.7%	12	0	12	0	0	6 to 8	6 to 9	F	F	M
Hibiscus tiliaceus	黃槿	19.9%	90	4	86	0	0	9 to 14	6 to 10	F	P	L
Melaleuca cajuputi subsp. *cumingiana*	白千層	27.4%	124	124	0	0	0	4 to 9	1 to 5	P to F	F	L to M
Melia azedarach	苦楝	9.7%	44	36	8	0	0	7 to 10	5 to 8	F	P to F	L to M
Syzygium cumini	海南蒲桃	1.3%	6	6	0	0	0	8 to 12	5 to 9	F	P to F	L to M
	Total:	**100%**	**452**	**314**	**138**	**0**	**0**	-	-	-	-	-
T-LR2	**Trees in Periphery Planting**											
Acacia auriculiformis	耳果相思	3.5%	50	18	32	0	0	6 to 10	3 to 8	P to F	P to F	L
Acacia confusa	台灣相思	9.7%	136	31	105	0	0	5 to 10	4 to 7	P to F	P to F	L to M
Bauhinia species	羊蹄甲屬	3.9%	55	36	19	0	0	4 to 7	3 to 5	F	P	L
Casuarina equisetifolia	木麻黃	42.6%	600	35	565	0	0	4 to 12	3 to 8	P to F	P to F	L to M
Cinnamomum burmannii	陰香	18.0%	254	254	0	0	0	3 to 7	2 to 6	F	P to F	L to M
Eucalyptus camaldulensis	赤桉	1.2%	17	12	5	0	0	12 to 15	2 to 5	F	P to F	L to M
Hibiscus tiliaceus	黃槿	21.1%	297	75	192	30	0	12 to 14	4 to 9	F	P	L
	Total:	**100%**	**1409**	**461**	**918**	**30**	**0**	-	-	-	-	-
T-LR3	**Trees in Roadside Planting**											
Acacia auriculiformis	耳果相思	1.2%	2	0	1	1	0	6 to 12	4 to 10	F	P to F	L to M
Acacia confusa	台灣相思	1.9%	3	0	1	2	0	6 to 10	5 to 8	P to F	P to F	L
Bombax ceiba	木棉	4.9%	8	4	4	0	0	8 to 12	3 to 6	F	P to F	L
Eucalyptus sp.	桉屬	63.0%	102	22	80	0	0	8 to 18	4 to 7	F	P to F	L
Ficus microcarpa	細葉榕	5.6%	9	0	6	3	0	9 to 15	5 to 12	F	P to F	L to M
Leucaena leucocephala	銀合歡	21.6%	35	25	10	0	0	6 to 12	3 to 7	F	P	L
Macaranga tanarius var. *tomentosa*	血桐	1.9%	3	3	0	0	0	5 to 8	3 to 6	P to F	P	L
	Total:	**100%**	**162**	**54**	**102**	**6**	**0**	-	-	-	-	-
T-LR4	**Trees in Landscape Planting**											
Artocarpus heterophyllus	菠蘿蜜	0.2%	1	0	1	0	0	9	7	F	P	L
Bauhinia species	羊蹄甲屬	1.5%	9	6	3	0	0	4 to 7	3 to 5	F	P	L
Callistemon viminalis	串錢柳	0.8%	5	5	0	0	0	3 to 4	2 to 3	F	P to F	L
Casuarina equisetifolia	木麻黃	5.9%	35	6	29	0	0	4 to 12	3 to 8	P to F	P to F	L to M
Cinnamomum burmannii	陰香	24.1%	142	142	0	0	0	3 to 7	2 to 6	F	P to F	L to M
Delonix regia	鳳凰木	8.1%	48	18	30	0	0	3 to 4	2 to 4	F	P	L
Dypsis lutescens	散尾葵	5.4%	32	32	0	0	0	2 to 3	2 to 3	F	P to F	L
Erythrina variegata	刺桐	0.5%	3	0	3	0	0	8	6	F	P	L

Appendix 8.1: Tree Assessment Schedule of Tree Groups within the Landscape Study Area

Species		%	Quantity	No. with Diameter at Breast Height [mm]				Height [m]	Crown [m]	Health (P/F/G)*	Form (P/F/G)*	Amenity (L/M/H)**
Botanical Name	**Chinese Name**			**95-149**	**150-499**	**500-999**	**>1000**					
Hibiscus mutabilis	木芙蓉	0.2%	1	1	0	0	0	4	3	F	P	L
Jatropha integerrima	全緣葉珊瑚	0.2%	1	1	0	0	0	3	4	F	P	L
Litchi chinensis	荔枝	1.0%	6	6	0	0	0	7 to 8	5 to 7	F	P to F	L
Livistona chinensis	蒲葵	24.6%	145	145	0	0	0	4 to 8	2 to 4	F to G	F	L
Mangifera indica	杧果	2.2%	13	13	0	0	0	6 to 10	5 to 8	F	P	L
Michelia x *alba*	白蘭	0.3%	2	1	1	0	0	8 to 10	3 to 6	F	P to F	L to M
Roystonea regia	王棕	23.1%	136	0	136	0	0	5 to 7	3 to 4	F	F	L
Schefflera actinophylla	傘樹	0.2%	1	1	0	0	0	7	2	F	P	L
Syagrus romanzoffiana	皇后葵	1.7%	10	3	7	0	0	3 to 5	3 to 4	F	F	L
	Total:	**100%**	**590**	**380**	**210**	**0**	**0**	-	-	-	-	-
T-LR5	**Trees in Tree Plantation**											
Acacia auriculiformis	耳果相思	9.7%	17	5	12	0	0	6 to 9	4 to 6	F	P	L
Alstonia scholaris	糖膠樹	6.9%	12	12	0	0	0	8 to 10	6 to 7	F	P to F	L
Casuarina equisetifolia	木麻黃	9.7%	17	11	6	0	0	10 to 12	7 to 8	F	P to F	L to M
Leucaena leucocephala	銀合歡	64.0%	112	112	0	0	0	5 to 12	3 to 10	F	P	L
Macaranga tanarius var. *tomentosa*	血桐	4.6%	8	8	0	0	0	3 to 8	4 to 8	P to F	P to F	L
Melia azedarach	苦楝	5.1%	9	9	0	0	0	8 to 9	6 to 8	F	P to F	L to M
	Total:	**100%**	**175**	**157**	**18**	**0**	**0**	-	-	-	-	-

* P = Poor; F = Fair; G = Good

** L = Low; M = Medium; H = High