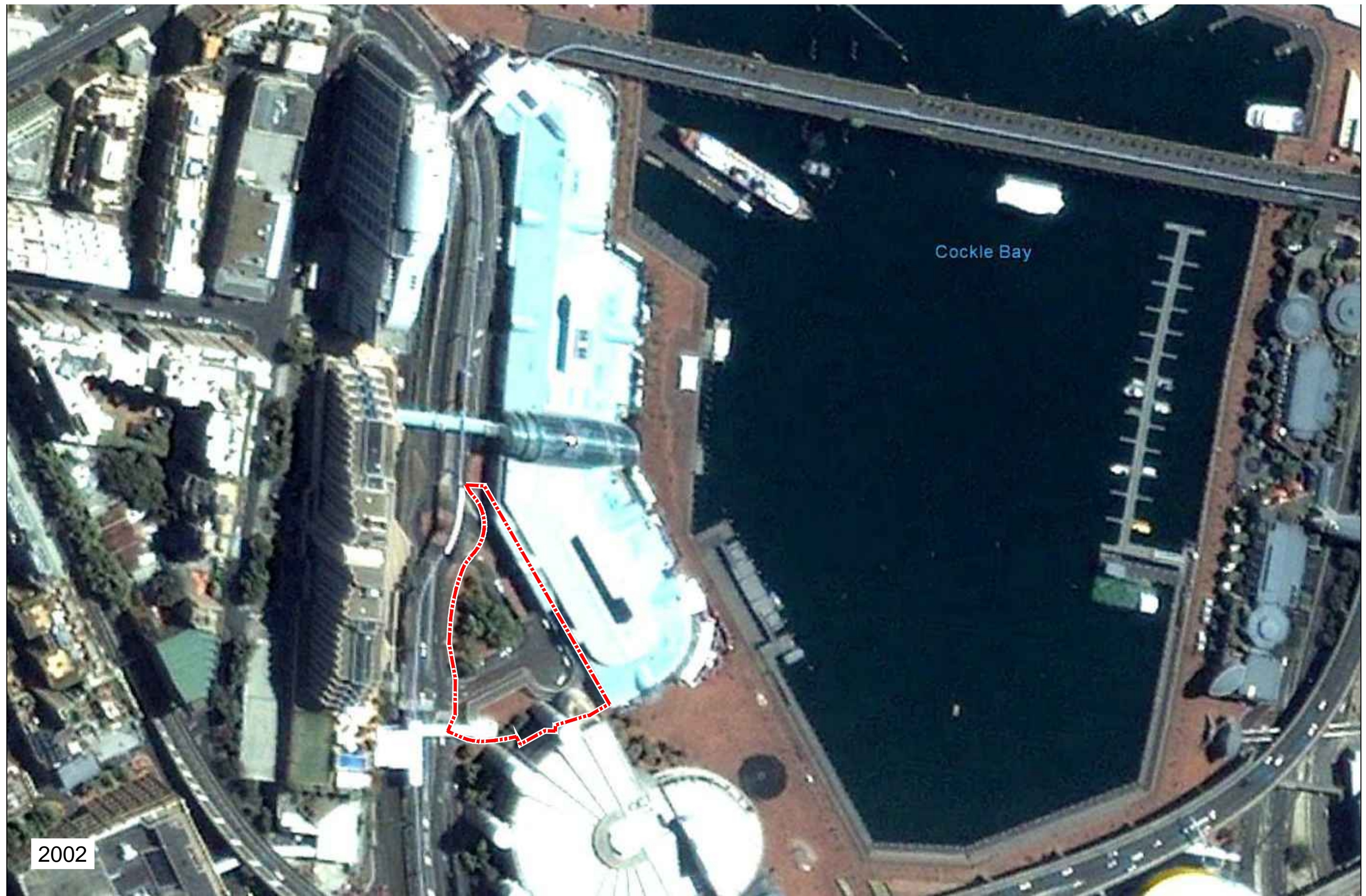


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2002

revision	description	drawn	approved	date



LEGEND

APPROXIMATE SITE FOOTPRINT

drawn	MV
approved	ML
date	17/06/13
scale	NTS
original size	A3

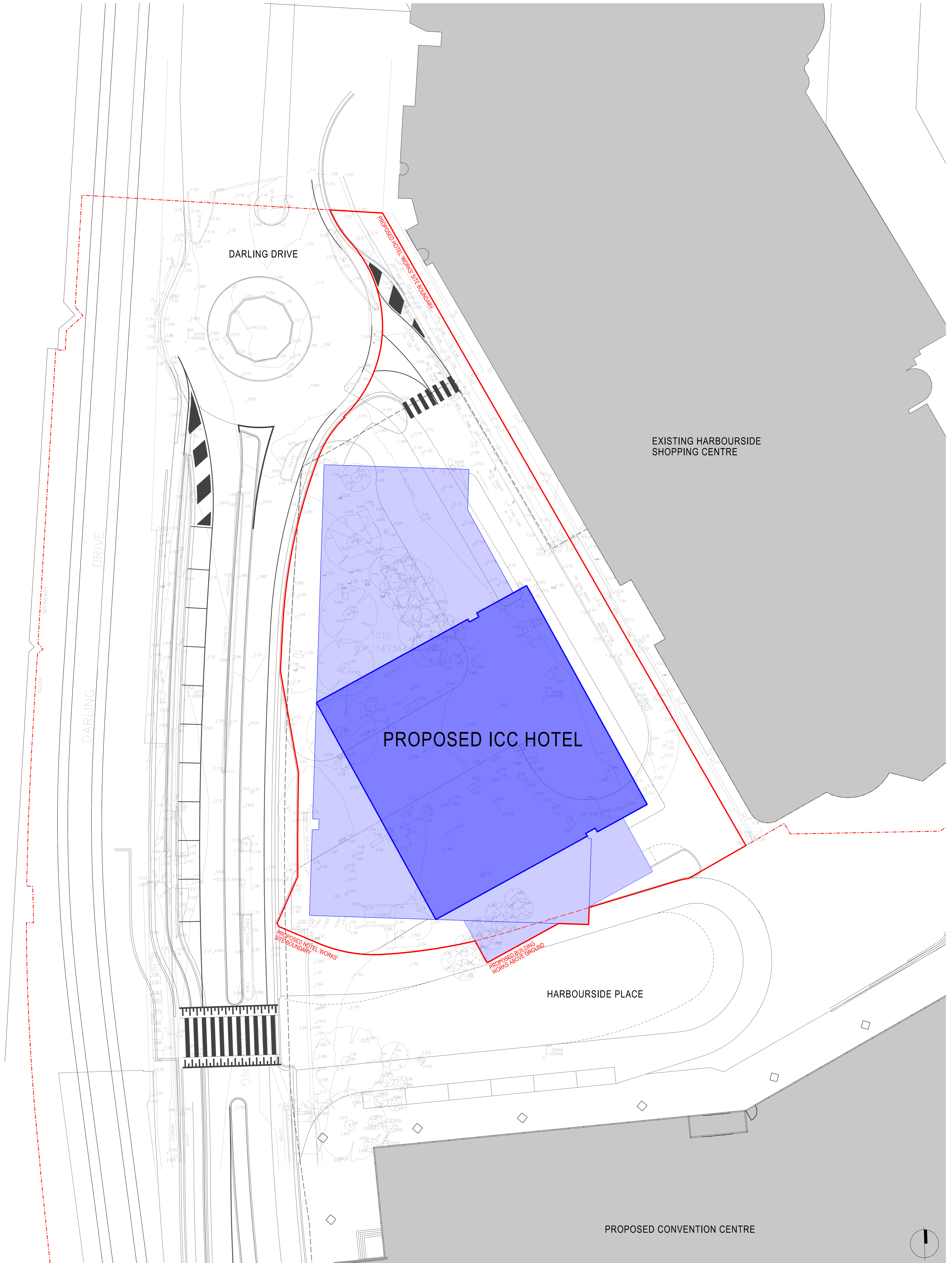


client:	LEND LEASE DEVELOPMENTS PTY LTD	
project:	SYDNEY INTERNATIONAL CONVENTION EXHIBITION AND ENTERTAINMENT PRECINCT (SICEEP) - ICC HOTEL DEVELOPMENT	
title:	AERIAL PHOTOGRAPH - 2002	
project no:	GEOTLCOV24303AH-D02	figure no: FIGURE 14

Appendix A

Proposed Development Drawings

**Detailed Site Investigation
Proposed International Convention Centre Hotel Development
Darling Harbour, Sydney NSW**



Architects
LEND LEASE DESIGN

Darren Kindrachuk
 Principal Architect | ARB NSW 7240



Richard Francis-Jones
 Design Director | ARB NSW 5301

Landscape Architect



Ken Maher
 Chairman International Executive | ARB NSW 3156

Project Number
 162661

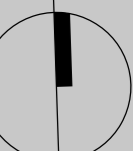
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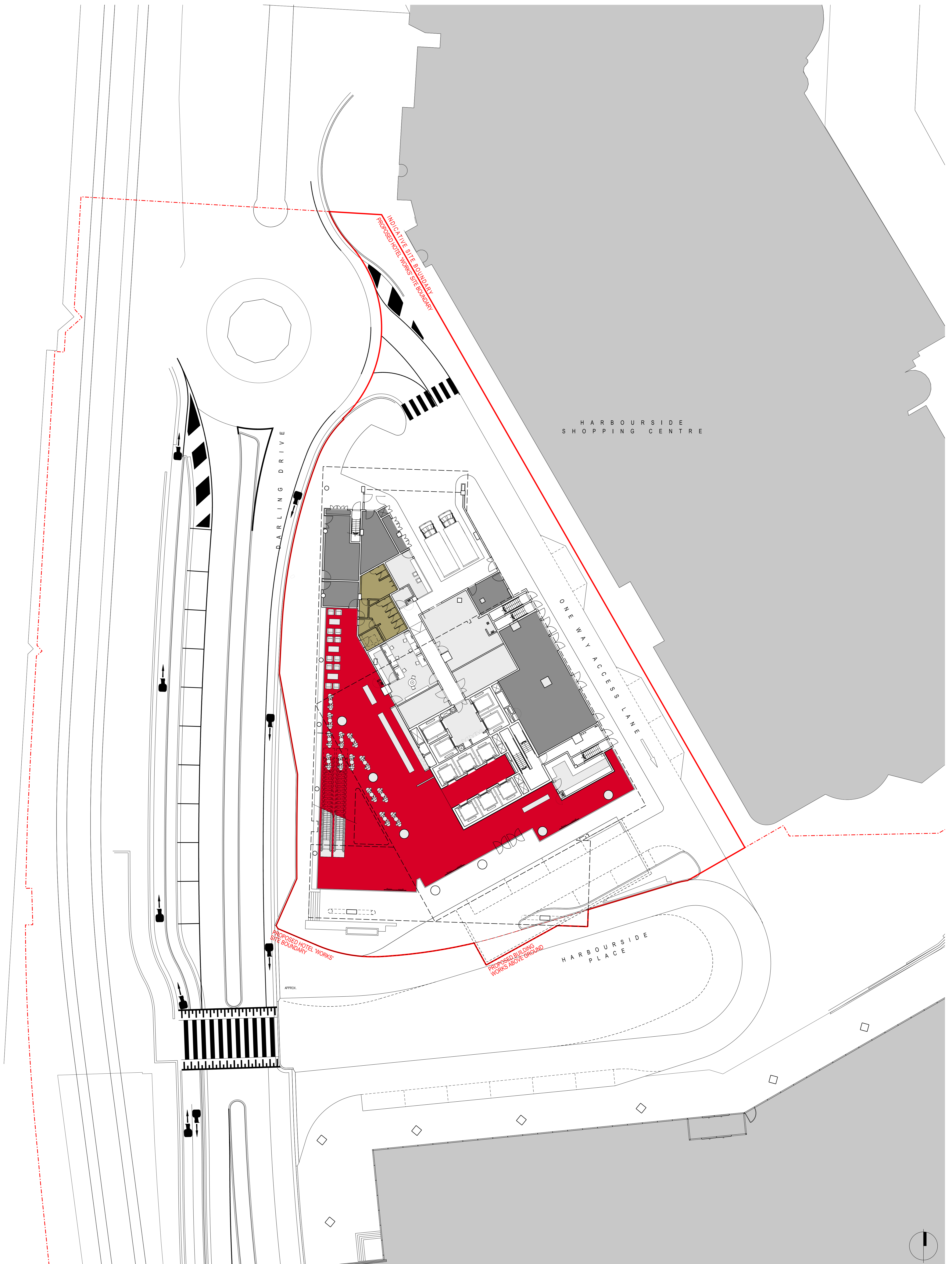
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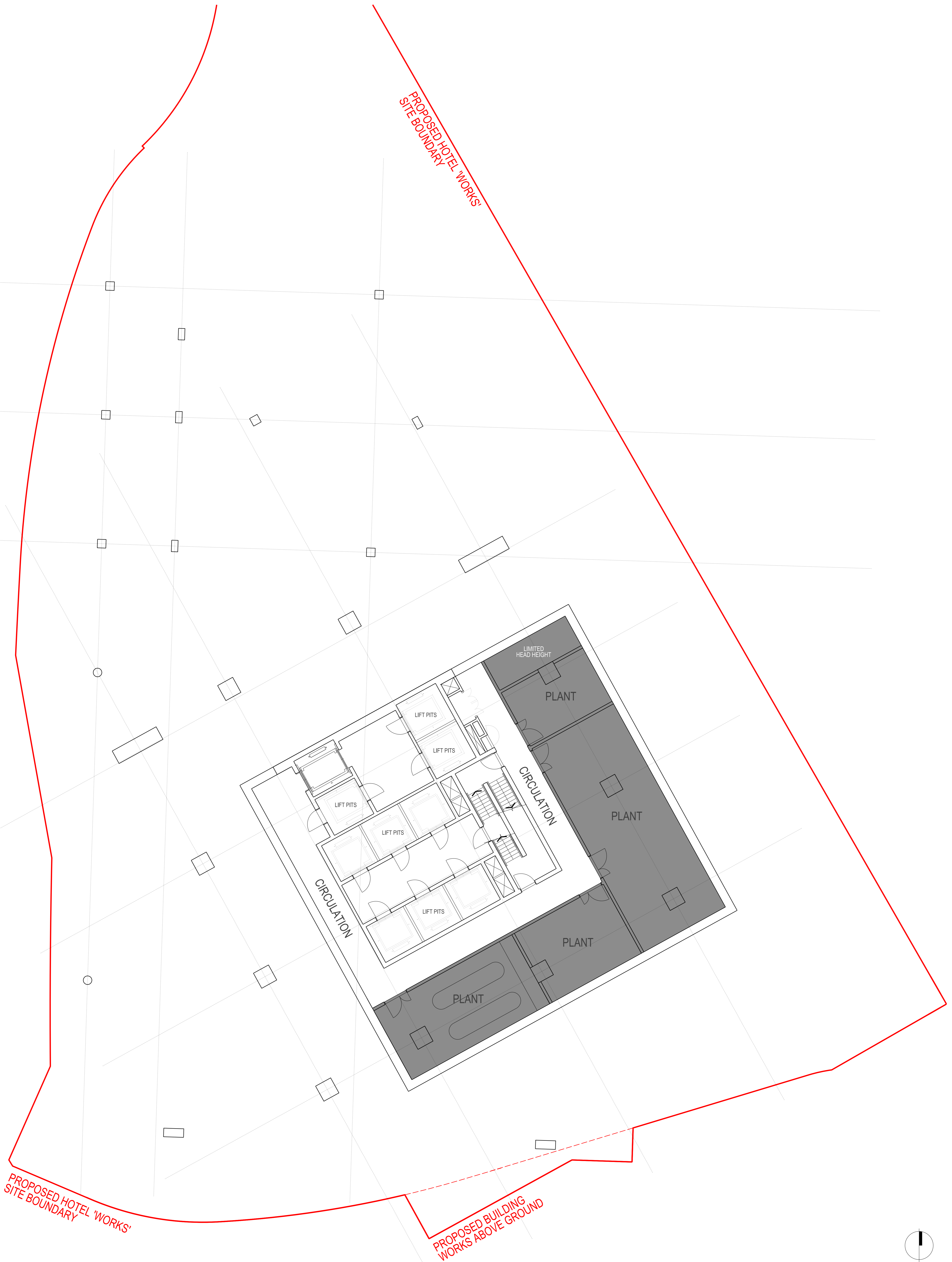
Revision
 A

SSDA6 SICEEP - ICC HOTEL

Drawing Title
BUILDING WORKS BOUNDARY PLAN

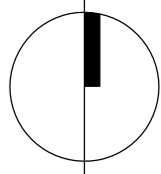






PROPOSED HOTEL 'WORKS'
SITE BOUNDARY

PROPOSED BUILDING
WORKS ABOVE GROUND



Architects
LEND LEASE DESIGN

Darren Kindrachuk
Principal Architect | ARB NSW 7240



Richard Francis-Jones
Design Director | ARB NSW 5301

Landscape Architect



Ken Maher
Chairman International Executive | ARB NSW 3156

Project Number
162661

Scale
1:100 @ B1

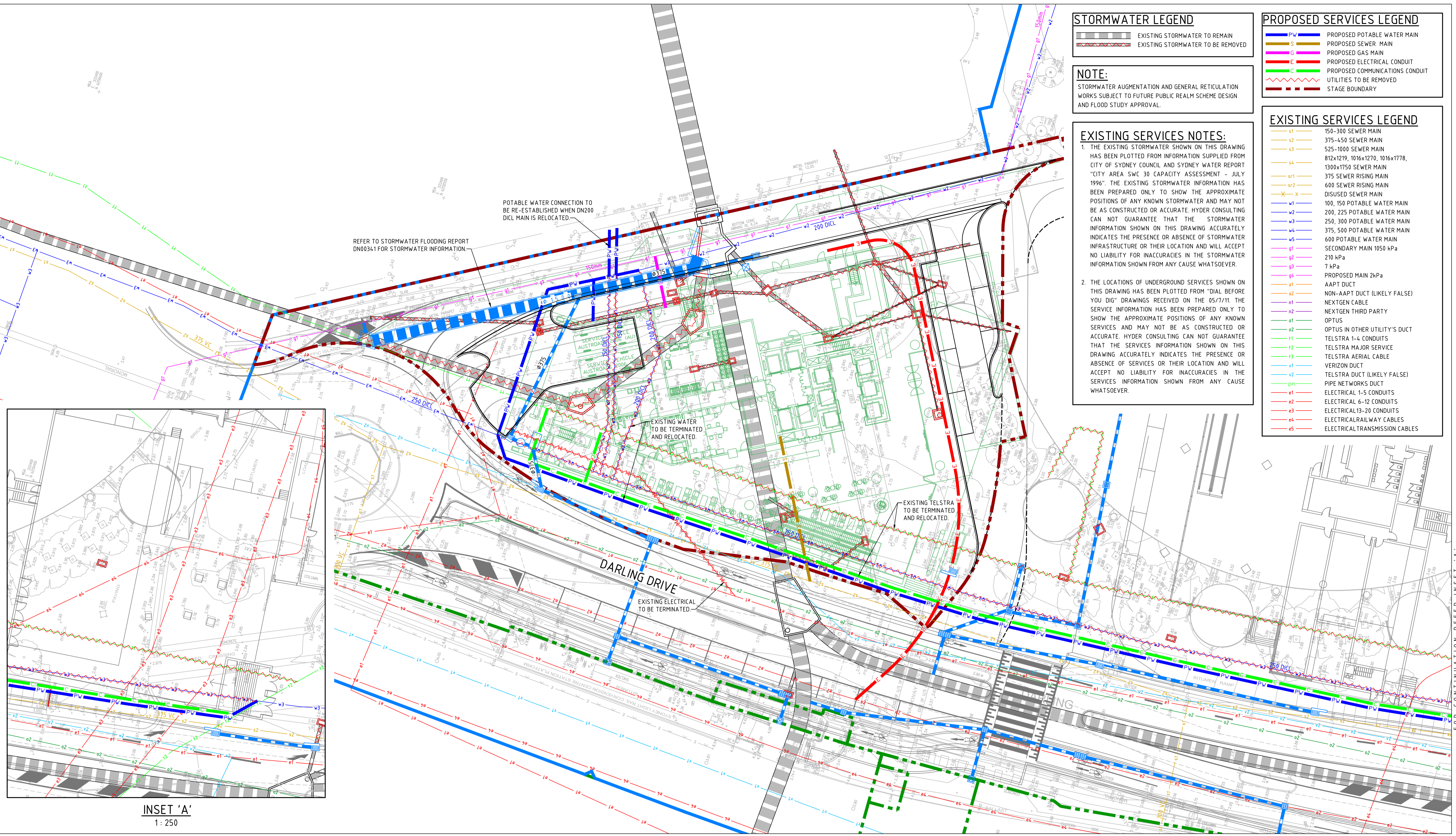
Drawing Number
DA090

Revision
A

SSDA6 SICEEP - ICC HOTEL

Drawing Title
BASEMENT PLAN

SYDNEY INTERNATIONAL CONVENTION, EXHIBITION AND ENTERTAINMENT PRECINCT
FOR CONTINUATION REFER RIGHT



STORMWATER LEGEND

- EXISTING STORMWATER TO REMAIN
- EXISTING STORMWATER TO BE REMOVED

NOTE:

STORMWATER AUGMENTATION AND GENERAL RETICULATION WORKS SUBJECT TO FUTURE PUBLIC REALM SCHEME DESIGN AND FLOOD STUDY APPROVAL.

EXISTING SERVICES NOTES:

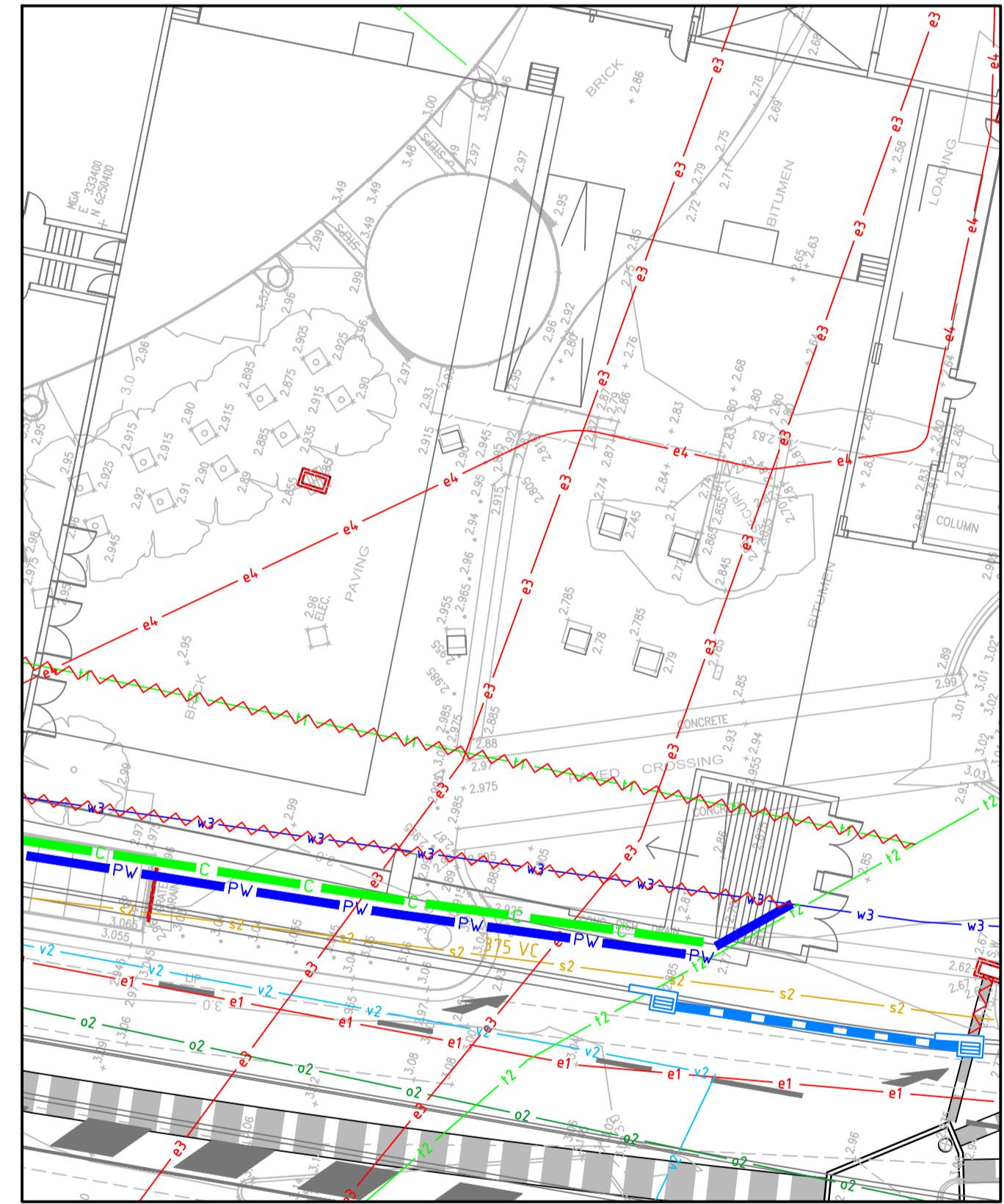
- THE EXISTING STORMWATER SHOWN ON THIS DRAWING HAS BEEN PLOTTED FROM INFORMATION SUPPLIED FROM CITY OF SYDNEY COUNCIL AND SYDNEY WATER REPORT "CITY AREA SWC 30 CAPACITY ASSESSMENT - JULY 1996". THE EXISTING STORMWATER INFORMATION HAS BEEN PREPARED ONLY TO SHOW THE APPROXIMATE POSITIONS OF ANY KNOWN STORMWATER AND MAY NOT BE AS CONSTRUCTED OR ACCURATE. HYDER CONSULTING CAN NOT GUARANTEE THAT THE STORMWATER INFORMATION SHOWN ON THIS DRAWING ACCURATELY INDICATES THE PRESENCE OR ABSENCE OF STORMWATER INFRASTRUCTURE OR THEIR LOCATION AND WILL ACCEPT NO LIABILITY FOR INACCURACIES IN THE STORMWATER INFORMATION SHOWN FROM ANY CAUSE WHATSOEVER.
- THE LOCATIONS OF UNDERGROUND SERVICES SHOWN ON THIS DRAWING HAS BEEN PLOTTED FROM "DIAL BEFORE YOU DIG" DRAWINGS RECEIVED ON THE 05/7/11. THE SERVICE INFORMATION HAS BEEN PREPARED ONLY TO SHOW THE APPROXIMATE POSITIONS OF ANY KNOWN SERVICES AND MAY NOT BE AS CONSTRUCTED OR ACCURATE. HYDER CONSULTING CAN NOT GUARANTEE THAT THE SERVICES INFORMATION SHOWN ON THIS DRAWING ACCURATELY INDICATES THE PRESENCE OR ABSENCE OF SERVICES OR THEIR LOCATION AND WILL ACCEPT NO LIABILITY FOR INACCURACIES IN THE SERVICES INFORMATION SHOWN FROM ANY CAUSE WHATSOEVER.

PROPOSED SERVICES LEGEND

- PROPOSED POTABLE WATER MAIN
- PROPOSED SEWER MAIN
- PROPOSED GAS MAIN
- PROPOSED ELECTRICAL CONDUIT
- PROPOSED COMMUNICATIONS CONDUIT
- UTILITIES TO BE REMOVED
- STAGE BOUNDARY

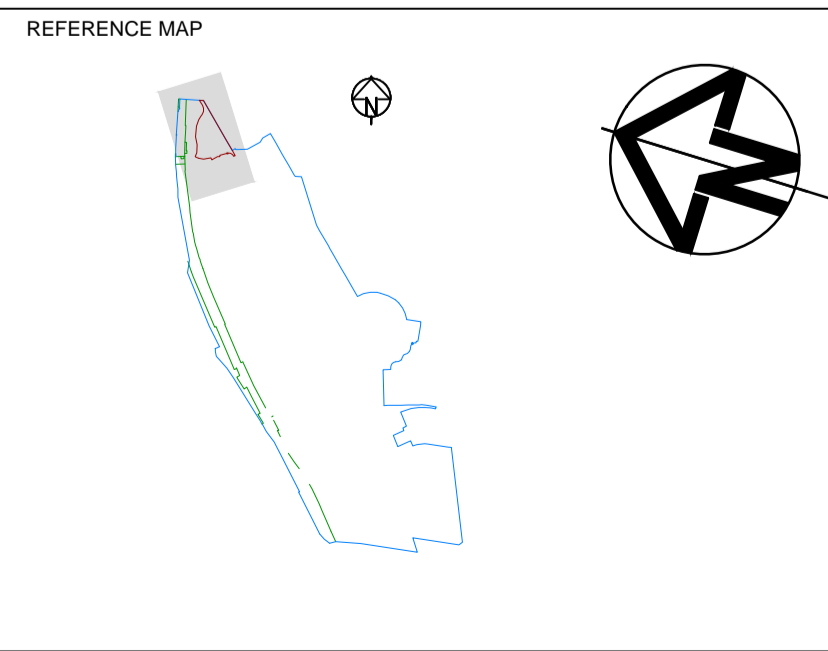
EXISTING SERVICES LEGEND

- s1 150-300 SEWER MAIN
- s2 375-450 SEWER MAIN
- s3 525-1000 SEWER MAIN
- s4 812x1219, 1016x1270, 1016x1778, 1300x1750 SEWER MAIN
- sr1 375 SEWER RISING MAIN
- sr2 600 SEWER RISING MAIN
- X-X DISUSED SEWER MAIN
- w1 100, 150 POTABLE WATER MAIN
- w2 200, 225 POTABLE WATER MAIN
- w3 250, 300 POTABLE WATER MAIN
- w4 375, 500 POTABLE WATER MAIN
- w5 600 POTABLE WATER MAIN
- g1 100, 150 POTABLE WATER MAIN SECONDARY MAIN 1050 kPa
- g2 210 kPa
- g3 7 kPa
- g4 PROPOSED MAIN 2kPa
- a1 AAPT DUCT
- a2 NON-AAPT DUCT (LIKELY FALSE)
- n1 NEXTGEN CABLE
- n2 NEXTGEN THIRD PARTY
- o1 OPTUS
- o2 OPTUS IN OTHER UTILITY'S DUCT
- t1 TELSTRA 1-4 CONDUITS
- t2 TELSTRA MAJOR SERVICE
- t3 TELSTRA AERIAL CABLE
- v1 VERIZON DUCT
- v2 TELSTRA DUCT (LIKELY FALSE)
- p1 PIPE NETWORKS DUCT
- e1 ELECTRICAL 1-5 CONDUITS
- e2 ELECTRICAL 6-12 CONDUITS
- e3 ELECTRICAL 13-20 CONDUITS
- e4 ELECTRICAL RAILWAY CABLES
- e5 ELECTRICAL TRANSMISSION CABLES

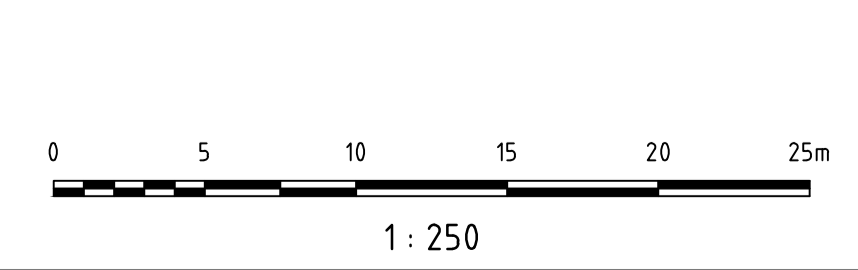


FOR CONTINUATION REFER INSET 'A'

DARLING HARBOUR LIVE



- NOTES:**
- DO NOT SCALE FROM DRAWINGS. WORK TO WRITTEN DIMENSIONS ONLY.
 - ALL DIMENSIONS IN METRES UNLESS NOTED OTHERWISE.
 - ALL COORDINATES TO MGA. ALL LEVELS TO AHD.
 - ALL DIMENSIONS, COORDINATES AND LEVELS TO BE VERIFIED ON SITE BEFORE PROCEEDING WITH WORK. HYDER SHALL BE NOTIFIED IN WRITING OF ANY DISCREPANCIES.
 - THIS DRAWING MUST BE READ IN CONJUNCTION WITH ALL RELEVANT CONTRACTS, SPECIFICATIONS AND DRAWINGS.



REV	DESCRIPTION	DATE
06	ISSUE FOR DEVELOPMENT APPLICATION	09/08/2013
05	ISSUE FOR INFORMATION	01/08/2013
04	ISSUE FOR INFORMATION	26/07/2013
03	ELECT AND COMMS AMENDED (PER PROJ WEB COR 1453)	18/07/2013
02	STORMWATER ADDED	18/07/2013
01	ISSUE FOR REVIEW	17/07/2013

CLIENT
Lend Lease

CONSULTANTS
LEND LEASE DESIGN

ARCHITECT
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Sydney NSW 2000

LANDSCAPE ARCHITECT
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Millers Point NSW 2000

CIVIL / TRAFFIC / FACADES
HYDER CONSULTING PTY LTD
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LEVEL 5, 141 WALKER ST,
NORTH SYDNEY NSW 2060
AUSTRALIA

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Fax: +61 (0)2 8907 9001
www.hyderconsulting.com
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PROJECT
SICEP
DARLING HARBOUR
ICC HOTEL



DRAWING TITLE
COMBINED SERVICES PLAN

STATUS
DEVELOPMENT APPLICATION

SCALE @ A1	DRAWN	DESIGNED	REVIEWED	APPROVED
1 : 250	JJB	-	-	-

PROJECT NUMBER	DRAWING NUMBER	REV
AA004399	HO-CI-0701	06

Appendix B Borehole Logs

**Detailed Site Investigation
Proposed International Convention Centre Hotel Development
Darling Harbour, Sydney NSW**

Engineering Log - Borehole

client: **Lend Lease Development Pty Ltd**

principal:

project: **SICEEP - International Convention Centre (ICC) Hotel**

location: **Darling Harbour, Sydney**

Borehole ID: **BH201**

sheet: 1 of 4

project no: **GEOTLCOV24303AH**

date started: **28 May 2013**

date completed: **28 May 2013**

logged by: **DB**

checked by: **DS**

position: E: 333,368.70; N: 6,250,526.40 (Datum Not Specified) surface elevation : 2.97m (Datum Not Specified) angle from horizontal: 90°

drill model: DP520

mounting: Track

hole diameter : 100 mm

drilling information				material substance								
method & support	penetration	samples & field tests	water	RL (m)	depth (m)	graphic log	classification symbol	material description	moisture condition	consistency / relative density	hand penetrometer (kPa)	structure and additional observations
DT	1	E			0.0			BRICK PAVERS: 0.08m.	D			PAVEMENT
	2	E			0.04			CONCRETE: 0.04m.	M			STABILISED ROADBASE
	3	E			1.0			FILL: Sandy GRAVEL: fine to medium, subangular to angular, dark grey to pale brown, sand is medium to coarse grained, with some lime.				PID = 0ppm at 0.6m, no odour or staining
		E			2.0			FILL: Gravelly SAND: medium to coarse, pale-grey to dark brown, sub-angular, sandstone gravel, trace clay.				FILL
		E			1.6			FILL: SAND: fine to medium, pale-brown to pale-grey, trace fine to medium grained, dark grey to pale-grey sandstone and shale gravel.				PID = 0ppm at 1.0m, no odour or staining
		SPT 1/50mm HB N*=R			2.0			trace fine metal chicken wire and rubber fragments, observed at base of auger				PID = 0ppm at 1.6m, no odour or staining
								SANDSTONE: fine to medium, pale-grey, slightly weathered, medium to high strength.				BEDROCK SPT bouncing at 1.95m
Borehole BH201 continued as cored hole												

method AD auger drilling* AS auger screwing* RR roller/tricone W washbore CT cable tool HA hand auger DT diatube B blank bit V V bit T TC bit * bit shown by suffix e.g. AD/T	support M mud C casing N nil	penetration 	samples & field tests U## undisturbed sample ##mm diameter D disturbed sample B bulk disturbed sample E environmental sample HP hand penetrometer (kPa) N standard penetration test (SPT) N* SPT - sample recovered Nc SPT with solid cone VS vane shearpeak/remoulded (uncorrected kPa) R refusal	classification symbol & soil description based on Unified Classification System	consistency / relative density VS very soft S soft F firm St stiff VSt very stiff H hard Fb friable VL very loose L loose MD medium dense D dense VD very dense
			moisture D dry M moist W wet		

CDF_0_9_04AL_GLB Log COF BOREHOLE: NON CORED GEOTLCOV24303AH BH20X SERIES.GPJ <<DrawingFiles>> 11/07/2013 15:12

Engineering Log - Cored Borehole

client: **Lend Lease Development Pty Ltd**

principal:

project: **SICEEP - International Convention Centre (ICC) Hotel**

location: **Darling Harbour, Sydney**

Borehole ID: **BH201**

sheet: 2 of 4

project no: **GEOTLCOV24303AH**

date started: **28 May 2013**

date completed: **28 May 2013**

logged by: **DB**

checked by: **DS**

position: E: 333,368.70; N: 6,250,526.40 (Datum Not Specified) surface elevation : 2.97m (Datum Not Specified) angle from horizontal: 90°

drill model: DP520

mounting: Track

hole diameter : 100 mm

drilling information			material substance				rock mass defects			
method & support	water	depth (m)	material description	weathering & alteration	estimated strength & Is(50)	samples, field tests & Is(50) (MPa)	defect spacing (mm)	additional observations and defect descriptions		
RL (m)	graphic log		ROCK TYPE: grain characteristics, colour, structure, minor components		VL L N H VH EH	a = axial d = diametral	30 100 300 1000 3000	particular	general	
		1.0								
		2.0								
		3.0	start coring at 2.20m							
		4.0	SANDSTONE: medium grained, pale-grey to orange-white, indistinctly cross bedded at 0-10°, with some dark grey laminae at 0-10°	FR		a=0.66 d=0.54		SM, 0°, PL, 25mm, HP Clay PT, 0°, PL, Clay CO		
		5.0	5.2 - 6.2m: massive			a=2.25 d=2.13	90%	PT, 0°, PL, RO, Clay CO PT, 5°, PL, RO, CO, Carbon		
		6.0				a=1.38 d=2.01 a=2.20 d=1.77		PT, 5°, CU, RO, Clay CO JT, 10°, PL, RO, CN		
		7.0				a=1.74 d=1.67	96%	PT, 5°, PL, RO, Clay CO		
			SHALE: dark grey, indistinctly bedded at 0-5°			a=1.53 d=1.64		PT, 0 - 5°, PL, RO, Clay CO		
			SANDSTONE: medium to coarse grained, pale grey, pebbly					PT, 5°, PL, RO, CO, Carbon PT, 0°, PL, RO, Clay CO SM, 0°, PL, 20mm, HP Clay		
								SM, 0 - 20°, IR, 15mm, HP Clay SM, 0°, PL, 25mm, HP Clay		

CDF_0_9_04AL_GLB_L Log COF BOREHOLE: CORED GEOTLCOV24303AH BH20X SERIES.GPJ <<DrawingFiles>> 11/07/2013 15:09

method & support DT diatube AS auger screwing AD auger drilling RR roller/tricone CB claw or blade bit W washbore NMLC NMLC core (51.9 mm) NQ wireline core (47.6mm) HQ wireline core (63.5mm) PQ wireline core (85.0mm) SPT standard penetration test	water 10/10/12, water level on date shown water inflow complete drilling fluid loss partial drilling fluid loss water pressure test result (lugeons) for depth interval shown 25uL	graphic log / core recovery core recovered (graphic symbols indicate material) no core recovered core run & RQD barrel withdrawn RQD = Rock Quality Designation (%)	weathering & alteration* RS residual soil XW extremely weathered HW highly weathered DW distinctly weathered MW moderately weathered SW slightly weathered FR fresh *W replaced with A for alteration strength VL very low L low M medium H high VH very high EH extremely high	defect type PT parting JT joint PJ parting SZ shear zone SS shear surface CS crushed seam SM seam DB drilling break roughness SL slickensided POL polished SO smooth RO rough VR very rough	planarity PL planar CU curved UN undulating ST stepped IR irregular
--	---	--	--	---	---

Engineering Log - Cored Borehole

client: **Lend Lease Development Pty Ltd**

principal:

project: **SICEEP - International Convention Centre (ICC) Hotel**

location: **Darling Harbour, Sydney**

Borehole ID: **BH201**

sheet: 3 of 4

project no: **GEOTLCOV24303AH**

date started: **28 May 2013**

date completed: **28 May 2013**

logged by: **DB**

checked by: **DS**

position: E: 333,368.70; N: 6,250,526.40 (Datum Not Specified) surface elevation : 2.97m (Datum Not Specified) angle from horizontal: 90°

drill model: DP520

mounting: Track

hole diameter : 100 mm

drilling information			material substance			rock mass defects		
method & support	water	depth (m)	material description	weathering & alteration	estimated strength & Is50	samples, field tests & Is(50) (MPa)	defect spacing (mm)	additional observations and defect descriptions
RL (m)	depth (m)	graphic log	ROCK TYPE: grain characteristics, colour, structure, minor components	VL, L, N, H, VH, EH	X = axial O = diametral a = axial d = diametral	a = axial d = diametral	30, 100, 300, 1000, 3000	(type, inclination, planarity, roughness, coating, thickness, other)
								particular general
		9.0	SANDSTONE: medium grained, pale-grey to orange-white, indistinctly cross bedded at 0-10°, with some dark grey laminae	FR		a=0.84 d=1.35	96%	PT, 5°, PL, VR, CO, Carbon
		10.0				a=0.93 d=0.60	100%	
		11.0				a=1.21 d=0.85 a=1.49 d=1.00		PT, 0 - 10°, PL, RO, Sandy clay CO
		12.0	SANDSTONE: medium grained, pale-grey to orange-white, massive, with some carbonaceous flecks < 25mm diameter			a=1.45 d=1.48		
		13.0				a=1.54 d=1.64	100%	
		14.0						JT, 35°, IR, VR, CN
		15.0	shale breccia - 25mm thickness shale breccia - 50mm thickness			a=1.31 d=1.64		JT, 25°, PL, RO, CN JT, 35°, PL, RO, CN
			SANDSTONE: fine grained, pale-grey to grey, indistinctly bedded at 0°, with some dark grey laminations				94%	PT, 0°, PL, RO, Clay CO

method & support DT diatube AS auger screwing AD auger drilling RR roller/tricone CB claw or blade bit W washbore NMLC NMLC core (51.9 mm) NQ wireline core (47.6mm) HQ wireline core (63.5mm) PQ wireline core (85.0mm) SPT standard penetration test	water 10/10/12, water level on date shown water inflow complete drilling fluid loss partial drilling fluid loss water pressure test result (lugeons) for depth interval shown 25uL	graphic log / core recovery core recovered (graphic symbols indicate material) no core recovered core run & RQD barrel withdrawn RQD = Rock Quality Designation (%)	weathering & alteration* RS residual soil XW extremely weathered HW highly weathered DW distinctly weathered MW moderately weathered SW slightly weathered FR fresh *W replaced with A for alteration strength VL very low L low M medium H high VH very high EH extremely high	defect type PT parting JT joint SZ shear zone SS shear surface CS crushed seam SM seam DB drilling break roughness SL slickensided POL polished SO smooth RO rough VR very rough	planarity PL planar CU curved UN undulating ST stepped IR irregular
--	---	--	--	---	---

Engineering Log - Cored Borehole

client: **Lend Lease Development Pty Ltd**

principal:

project: **SICEEP - International Convention Centre (ICC) Hotel**

location: **Darling Harbour, Sydney**

Borehole ID: **BH201**

sheet: 4 of 4

project no: **GEOTLCOV24303AH**

date started: **28 May 2013**

date completed: **28 May 2013**

logged by: **DB**

checked by: **DS**

position: E: 333,368.70; N: 6,250,526.40 (Datum Not Specified) surface elevation : 2.97m (Datum Not Specified) angle from horizontal: 90°

drill model: DP520

mounting: Track

hole diameter : 100 mm


drilling information		material substance				rock mass defects								
method & support	water	RL (m)	depth (m)	graphic log	material description ROCK TYPE: grain characteristics, colour, structure, minor components	weathering & alteration	estimated strength & Is(50) X = axial O = diametral a = axial d = diametral	samples, field tests & Is(50) (MPa)	defect spacing (mm)	additional observations and defect descriptions (type, inclination, planarity, roughness, coating, thickness, other)				
										particular	general			
		-14	17.0		SANDSTONE: medium to coarse grained, pale-grey, indistinctly bedded at 0-15°, with some dark grey laminae (<i>continued</i>)	FR	a=1.41 d=1.53	94%		JT, 55°, CU, VR, CN PT, 10°, PL, RO, Clay CO				
		-15	18.0				a=1.78 d=2.24							
		-16	19.0				a=1.70 d=2.39							
		-17	20.0				a=2.70 d=3.18							PT, 0°, PL, RO, Clay CO
		-18	21.0				a=2.38 d=2.22							PT, 0°, PL, RO, Clay CO
		-19	22.0											
		-20	23.0											
		-21	24.0		Borehole BH201 terminated at 20.60 m									

CDF_0_9_04AL_GLB L Log COF BOREHOLE: CORED GEOTLCOV24303AH BH20X SERIES.GPJ <<DrawingFile>> 11/07/2013 15:09

method & support DT diatube AS auger screwing AD auger drilling RR roller/tricone CB claw or blade bit W washbore NMLC NMLC core (51.9 mm) NQ wireline core (47.6mm) HQ wireline core (63.5mm) PQ wireline core (85.0mm) SPT standard penetration test	water 10/10/12, water level on date shown water inflow complete drilling fluid loss partial drilling fluid loss water pressure test result (lugeons) for depth interval shown 25uL	graphic log / core recovery core recovered (graphic symbols indicate material) no core recovered core run & RQD barrel withdrawn RQD = Rock Quality Designation (%)	weathering & alteration* RS residual soil XW extremely weathered HW highly weathered DW distinctly weathered MW moderately weathered SW slightly weathered FR fresh *W replaced with A for alteration strength VL very low L low M medium H high VH very high EH extremely high	defect type PT parting JT joint SZ shear zone SS shear surface CS crushed seam SM seam DB drilling break roughness SL slickensided POL polished SO smooth RO rough VR very rough	planarity PL planar CU curved UN undulating ST stepped IR irregular coating CN clean SN stain VN veneer CO coating
--	---	--	--	---	--




PointID : BH201a Depth Range: 2.20 - 11.00 m

drawn		 <p>coffey geotechnics SPECIALISTS MANAGING THE EARTH</p>	client:	Lend Lease Development Pty Ltd		
approved			project:	SICEEP - International Convention Centre (ICC) Hotel Darling Harbour, Sydney		
date	07/06/2013		title:	CORE PHOTOGRAPH BH201		
scale	N.T.S.		project no:	GEOTLCOV24303AH	fig no:	FIGURE 1
original size	A4		rev:			

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PointID : BH201a Depth Range: 11.00 - 20.60 m

drawn		 <p>coffey geotechnics SPECIALISTS MANAGING THE EARTH</p>	client: Lend Lease Development Pty Ltd		
approved			project: SICEEP - International Convention Centre (ICC) Hotel Darling Harbour, Sydney		
date	07/06/2013		title: CORE PHOTOGRAPH BH201		
scale	N.T.S.		project no: GEOTLCOV24303AH	fig no: FIGURE 2	rev:
original size	A4				

Engineering Log - Borehole

client: **Lend Lease Development Pty Ltd**

principal:

project: **SICEEP - International Convention Centre (ICC) Hotel**

location: **Darling Harbour, Sydney**

Borehole ID: **BH201a**

sheet: 1 of 1

project no. **GEOTLCOV24303AH**

date started: **27 May 2013**


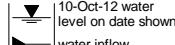
date completed: **27 May 2013**

logged by:

checked by:

position: Not Specified surface elevation : Not Specified angle from horizontal: 90°
 drill model: DP520 mounting: Track hole diameter : 100 mm

drilling information				material substance							
method & support	penetration	samples & field tests	RL (m)	depth (m)	graphic log	classification symbol	material description	moisture condition	consistency / relative density	hand penetrometer (kPa)	structure and additional observations
DT HA AD/T	1						BRICK PAVERS: 0.08m.	D			PAVEMENT
	2						CONCRETE: 0.04m.				
	3						FILL: Sandy GRAVEL: fine to medium, subangular to angular, dark grey to pale brown, sand is medium to coarse grained, with some lime.	M			STABILISED ROADBASE No staining or odour
			E		0.5		FILL: Gravelly SAND: medium to coarse, sub-angular, sandstone gravel, trace clay.				
							FILL: SAND: fine to medium, trace fine to medium grained, dark grey to pale-grey sandstone and shale gravel.				FILL No staining or odour
		E		1.0							
											Trace of metal wire
		E		1.5							
Borehole BH201a terminated at 1.80 m BH terminated due to obstruction. Hole relocated to BH201											

method AD auger drilling* AS auger screwing* RR roller/tricone W washbore CT cable tool HA hand auger DT diatube B blank bit V V bit T TC bit * bit shown by suffix e.g. AD/T	support M mud N nil C casing penetration  no resistance ranging to refusal water  10-Oct-12 water level on date shown water inflow water outflow	samples & field tests U## undisturbed sample ##mm diameter D disturbed sample B bulk disturbed sample E environmental sample HP hand penetrometer (kPa) N standard penetration test (SPT) N* SPT - sample recovered Nc SPT with solid cone VS vane shearpeak/remounded (uncorrected kPa) R refusal	classification symbol & soil description based on Unified Classification System moisture D dry M moist W wet	consistency / relative density VS very soft S soft F firm St stiff VSt very stiff H hard Fb friable VL very loose L loose MD medium dense D dense VD very dense
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CDF_0_9_04AL_GLB Log COF BOREHOLE: NON CORED GEOTLCOV24303AH BH20X SERIES.GPJ <<DrawingFile>> 19/07/2013 12:45

Engineering Log - Borehole

client: **Lend Lease Development Pty Ltd**

principal:

project: **SICEEP - International Convention Centre (ICC) Hotel**

location: **Darling Harbour, Sydney**

Borehole ID: **BH202**

sheet: 1 of 4

project no: **GEOTLCOV24303AH**

date started: **23 May 2013**

date completed: **23 May 2013**

logged by: **CL**

checked by: **DS**

position: E: 333,384.50; N: 6,250,527.50 (Datum Not Specified) surface elevation : 3.00m (Datum Not Specified) angle from horizontal: 90°

drill model: DP520

mounting: Track

Casing Diameter : HQ

drilling information				material substance								
method & support	penetration	samples & field tests	water	RL (m)	depth (m)	graphic log	classification symbol	material description	moisture condition	consistency / relative density	hand penetrometer (kPa)	structure and additional observations
AD/T	1 2 3	E E SPT 15/100mm N*=R		3.00	1.0		SP	ASPHALT: 0.05m. Gravelly SAND: fine coarse, dark grey, fine to medium grained igneous gravel. Gravelly SAND: fine coarse, grey mottled brown, fine to medium grained gravel. SAND: fine, orange brown, with a trace of sandstone gravel. SANDSTONE: pale grey mottled orange brown, moderately weathered to slightly weathered, medium strength. Borehole BH202 continued as cored hole	D		100 200 300 400	PAVEMENT ROADBASE PID = 0.4ppm at 0.2m FILL PID = 0ppm at 0.5m RESIDUAL SOIL PID = 0ppm at 0.6m BEDROCK
					2.0							
					3.0							
					4.0							
					5.0							
					6.0							
					7.0							

method AD auger drilling* AS auger screwing* RR roller/tricone W washbore CT cable tool HA hand auger DT diatube B blank bit V V bit T TC bit * bit shown by suffix e.g. AD/T	support M mud C casing N nil	penetration no resistance ranging to refusal water 10-Oct-12 water level on date shown water inflow water outflow	samples & field tests U## undisturbed sample ##mm diameter D disturbed sample B bulk disturbed sample E environmental sample HP hand penetrometer (kPa) N standard penetration test (SPT) N* SPT - sample recovered Nc SPT with solid cone VS vane shearpeak/remoulded (uncorrected kPa) R refusal	classification symbol & soil description based on Unified Classification System moisture D dry M moist W wet	consistency / relative density VS very soft S soft F firm St stiff VSt very stiff H hard Fb friable VL very loose L loose MD medium dense D dense VD very dense
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CDF_0_9_04AL_GLB Log COF BOREHOLE: NON CORED GEOTLCOV24303AH BH20X SERIES.GPJ <<DrawingFile>> 11/07/2013 15:12

Engineering Log - Cored Borehole

client: **Lend Lease Development Pty Ltd**

principal:

project: **SICEEP - International Convention Centre (ICC) Hotel**

location: **Darling Harbour, Sydney**

Borehole ID: **BH202**

sheet: 2 of 4

project no: **GEOTLCOV24303AH**

date started: **23 May 2013**

date completed: **23 May 2013**

logged by: **CL**

checked by: **DS**

position: E: 333,384.50; N: 6,250,527.50 (Datum Not Specified) surface elevation : 3.00m (Datum Not Specified) angle from horizontal: 90°

drill model: DP520

mounting: Track

Casing Diameter : HQ

drilling information			material substance				rock mass defects			
method & support	water	depth (m)	material description	weathering & alteration	estimated strength & Is(50)	samples, field tests & Is(50) (MPa)	defect spacing (mm)	additional observations and defect descriptions		
RL (m)	depth (m)	graphic log	ROCK TYPE: grain characteristics, colour, structure, minor components	VL L N H VH EH	X = axial O = diametral a = axial d = diametral	core run & RQD	particular	general		
		1.0	start coring at 1.00m							
		1.30	SANDSTONE: fine to medium grained, pale grey, with dark grey laminae, distinctly cross bedded at 0-15° 1.30m to 1.70m: some iron staining	SW			180 mm, XW zone			
		1.70		FR		a=0.96 d=0.76	JT, 45°, ST, RO, CO PT, 0°, PL, RO, SN			
		2.0					PT, 0°, PL, RO, CO			
		2.5				a=0.83 d=1.24	PT, 0°, PL, RO, CN			
		3.0				a=1.34 d=1.04	SM XW, 10 mm PT, 0°, PL, RO, CN			
		3.5					PT, IR, RO, CO			
		4.0					PT, 0°, PL, RO, CN			
		4.5				a=0.84 d=1.25	PT, 5°, PL, RO, CO			
		5.0				a=1.35 d=1.24				
		5.5								
		6.0					SM, 40 mm			
		6.07	SANDSTONE: medium to coarse grained, pale grey, with some dark grey shale lentices, iron stained from 6.07m to 6.28m, some iron staining from 7.3m to 7.65m							
		6.28				a=1.15 d=1.32				
		6.5								
		7.0				a=1.27 d=2.29	PT, 0°, PL, RO, CO			
		7.5					PT, 0°, PL, RO, CO PT, 0°, PL, RO, CN			

CDF_0_9_04AL_GLB L Log COF BOREHOLE: CORED GEOTLCOV24303AH BH20X SERIES.GPJ <<DrawingFiles>> 11/07/2013 15:09

method & support DT diatube AS auger screwing AD auger drilling RR roller/tricone CB claw or blade bit W washbore NMLC NMLC core (51.9 mm) NQ wireline core (47.6mm) HQ wireline core (63.5mm) PQ wireline core (85.0mm) SPT standard penetration test	water 10/10/12, water level on date shown water inflow complete drilling fluid loss partial drilling fluid loss 25µL water pressure test result (lugeons) for depth interval shown	graphic log / core recovery core recovered (graphic symbols indicate material) no core recovered core run & RQD barrel withdrawn RQD = Rock Quality Designation (%)	weathering & alteration* RS residual soil XW extremely weathered HW highly weathered DW distinctly weathered MW moderately weathered SW slightly weathered FR fresh *W replaced with A for alteration strength VL very low L low M medium H high VH very high EH extremely high	defect type PT parting JT joint SZ shear zone SS shear surface CS crushed seam SM seam DB drilling break roughness SL slickensided POL polished SO smooth RO rough VR very rough	planarity PL planar CU curved UN undulating ST stepped IR irregular coating CN clean SN stain VN veneer CO coating
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Engineering Log - Cored Borehole

client: **Lend Lease Development Pty Ltd**

principal:

project: **SICEEP - International Convention Centre (ICC) Hotel**

location: **Darling Harbour, Sydney**

Borehole ID: **BH202**

sheet: 3 of 4

project no: **GEOTLCOV24303AH**

date started: **23 May 2013**

date completed: **23 May 2013**

logged by: **CL**

checked by: **DS**

position: E: 333,384.50; N: 6,250,527.50 (Datum Not Specified) surface elevation : 3.00m (Datum Not Specified) angle from horizontal: 90°

drill model: DP520

mounting: Track

Casing Diameter : HQ

drilling information		material substance				rock mass defects		
method & support	water	depth (m)	material description	weathering & alteration	estimated strength & Is(50)	samples, field tests & Is(50) (MPa)	defect spacing (mm)	additional observations and defect descriptions
			ROCK TYPE: grain characteristics, colour, structure, minor components		VL L M H VH EH	a = axial d = diametral	30 100 300 1000 3000	particular general
		9.0	INTERLAMINATED SHALE (80%) & SANDSTONE (20%); shale dark grey, sandstone fine grained, grey (<i>continued</i>)	XW / HW FR		a=1.49 d=1.46	70%	SM XW/HW, 350 mm PT, 0°, PL, RO, CO
		10.0	SANDSTONE: fine grained, pale grey, with dark grey laminae, distinctly cross bedded at 0-15°			a=0.80 d=0.88	94%	
		11.0	SANDSTONE: fine to medium grained, pale grey, with some carbonaceous flecks, massive			a=1.47 d=1.65 a=1.38 d=1.50		PT, 5°, PL, RO, CO SM XW, 30 mm
		12.0				a=1.36 d=1.56	100%	
		13.0				a=2.08 d=2.14	99%	
		14.0				a=1.85 d=1.89		
		15.0				a=2.85 d=1.51	96%	PT, 0°, PL, RO, CN PT, 0°, PL, RO, CN
		15.21m to 15.24m	shale band					
			INTERLAMINATED SHALE (30%) & SANDSTONE (70%); fine grained, pale grey, shale is dark grey					

method & support DT diatube AS auger screwing AD auger drilling RR roller/tricone CB claw or blade bit W washbore NMLC NMLC core (51.9 mm) NQ wireline core (47.6mm) HQ wireline core (63.5mm) PQ wireline core (85.0mm) SPT standard penetration test	water 10/10/12, water level on date shown water inflow complete drilling fluid loss partial drilling fluid loss water pressure test result (lugeons) for depth interval shown	graphic log / core recovery core recovered (graphic symbols indicate material) no core recovered core run & RQD barrel withdrawn RQD = Rock Quality Designation (%)	weathering & alteration* RS residual soil XW extremely weathered HW highly weathered DW distinctly weathered MW moderately weathered SW slightly weathered FR fresh *W replaced with A for alteration strength VL very low L low M medium H high VH very high EH extremely high	defect type PT parting JT joint SZ shear zone SS shear surface CS crushed seam SM seam DB drilling break roughness SL slickensided POL polished SO smooth RO rough VR very rough	planarity PL planar CU curved UN undulating ST stepped IR irregular coating CN clean SN stain VN veneer CO coating
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Engineering Log - Cored Borehole

client: **Lend Lease Development Pty Ltd**

principal:

project: **SICEEP - International Convention Centre (ICC) Hotel**

location: **Darling Harbour, Sydney**

Borehole ID: **BH202**

sheet: 4 of 4

project no: **GEOTLCOV24303AH**

date started: **23 May 2013**

date completed: **23 May 2013**

logged by: **CL**

checked by: **DS**

position: E: 333,384.50; N: 6,250,527.50 (Datum Not Specified) surface elevation : 3.00m (Datum Not Specified) angle from horizontal: 90°

drill model: DP520

mounting: Track

Casing Diameter : HQ


drilling information		material substance				rock mass defects			
method & support	water	depth (m)	material description	weathering & alteration	estimated strength & Is50	samples, field tests & Is(50) (MPa)	defect spacing (mm)	additional observations and defect descriptions	
graphical log	graphical log	graphical log	graphical log	graphical log	graphical log	graphical log	graphical log	graphical log	
graphical log	graphical log	graphical log	graphical log	graphical log	graphical log	graphical log	graphical log	graphical log	
		14.0	SANDSTONE: fine to medium grained, pale grey, with pale grey laminae, distinctly cross bedded at 0-10°	FR	VL L M H VH EH	a=2.66 d=1.90 a=1.70 d=1.96	96%	SM, 10 mm	
		17.0						PT, 0°, PL, RO, CN	
		18.0						PT, 0°, PL, RO, CN	
		19.0						JT, 35°, PL, RO, CN	
		20.0						PT, 0°, PL, RO, CN PT, 0°, PL, RO, CN	
		21.0	Borehole BH202 terminated at 20.20 m						
		22.0							
		23.0							

method & support DT diatube AS auger screwing AD auger drilling RR roller/tricone CB claw or blade bit W washbore NMLC NMLC core (51.9 mm) NQ wireline core (47.6mm) HQ wireline core (63.5mm) PQ wireline core (85.0mm) SPT standard penetration test	water 10/10/12, water level on date shown water inflow complete drilling fluid loss partial drilling fluid loss water pressure test result (ugeons) for depth interval shown	graphic log / core recovery core recovered (graphic symbols indicate material) no core recovered core run & RQD barrel withdrawn RQD = Rock Quality Designation (%)	weathering & alteration* RS residual soil XW extremely weathered HW highly weathered DW distinctly weathered MW moderately weathered SW slightly weathered FR fresh *W replaced with A for alteration strength VL very low L low M medium H high VH very high EH extremely high	defect type PT parting JT joint SZ shear zone SS shear surface CS crushed seam SM seam DB drilling break roughness SL slickensided POL polished SO smooth RO rough VR very rough	planarity PL planar CU curved UN undulating ST stepped IR irregular coating CN clean SN stain VN veneer CO coating
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CDF 0.9_04ALGLB_GrlcTtl_COF_PHOTO_CORE_PHOTO_1 PER PAGE GEOTLCOV24303AH BH20X SERIES.GPJ <-DrawingFiles> 07/06/2013 10:26




PointID : BH202 Depth Range: 1.00 - 7.00 m

drawn		 <p>coffey geotechnics SPECIALISTS MANAGING THE EARTH</p>	client:	Lend Lease Development Pty Ltd		
approved			project:	SICEEP - International Convention Centre (ICC) Hotel Darling Harbour, Sydney		
date	07/06/2013		title:	CORE PHOTOGRAPH BH202		
scale	N.T.S.		project no:	GEOTLCOV24303AH	fig no:	FIGURE 3
original size	A4		rev:			

CDF 0.9_04ALGLB_G1c1r1_COF_PHOTO_CORE_PHOTO_1_PER_PAGE GEOTLCOV24303AH BH20X SERIES.GPJ <-DrawingFiles> 07/06/2013 10:26




PointID : BH202 Depth Range: 7.00 - 12.00 m

drawn		 <p>coffey geotechnics SPECIALISTS MANAGING THE EARTH</p>	client:	Lend Lease Development Pty Ltd		
approved			project:	SICEEP - International Convention Centre (ICC) Hotel Darling Harbour, Sydney		
date	07/06/2013		title:	CORE PHOTOGRAPH BH202		
scale	N.T.S.		project no:	GEOTLCOV24303AH	fig no:	FIGURE 4
original size	A4				rev:	

CDF 0.9_04ALGLB_Grictbl_COF_PHOTO_CORE_PHOTO_1 PER PAGE GEOTLCOV24303AH BH20X SERIES.GPJ <-DrawingFiles> 07/06/2013 10:26




PointID : BH202 Depth Range: 12.00 - 17.00 m

drawn		 <p>coffey geotechnics SPECIALISTS MANAGING THE EARTH</p>	client:	Lend Lease Development Pty Ltd		
approved			project:	SICEEP - International Convention Centre (ICC) Hotel Darling Harbour, Sydney		
date	07/06/2013		title:	CORE PHOTOGRAPH BH202		
scale	N.T.S.		project no:	GEOTLCOV24303AH	fig no:	FIGURE 5
original size	A4		rev:			



PointID : BH202 Depth Range: 17.00 - 20.20 m

drawn		 <p>coffey geotechnics SPECIALISTS MANAGING THE EARTH</p>	client:	Lend Lease Development Pty Ltd		
approved			project:	SICEEP - International Convention Centre (ICC) Hotel Darling Harbour, Sydney		
date	07/06/2013		title:	CORE PHOTOGRAPH BH202		
scale	N.T.S.		project no:	GEOTLCOV24303AH	fig no:	FIGURE 6
original size	A4		rev:			

Engineering Log - Borehole

client: **Lend Lease Development Pty Ltd**

principal:

project: **SICEEP - International Convention Centre (ICC) Hotel**

location: **Darling Harbour, Sydney**

Borehole ID: **BH203**

sheet: 1 of 4

project no: **GEOTLCOV24303AH**

date started: **24 May 2013**

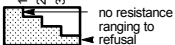
date completed: **24 May 2013**

logged by: **CL**

checked by: **DS**

position: E: 333,395.70; N: 6,250,513.50 (Datum Not Specified) surface elevation : 3.10m (Datum Not Specified) angle from horizontal: 90°
 drill model: DP520 mounting: Track hole diameter : 125 mm

drilling information				material substance							
method & support	penetration	samples & field tests	RL (m)	depth (m)	graphic log	classification symbol	material description	moisture condition	consistency / relative density	hand penetrometer (kPa)	structure and additional observations
HA	1 2 3	E	3	1.0	[Cross-hatched pattern]	M	BRICK PAVERS: 0.1m.	M			PAVEMENT
							FILL: Gravelly SAND: fine to coarse, black, fine to coarse gravel.				
ADT	SPT 1, 1, 9 N=10	E	2.0	2.0	[Dotted pattern]	SM	FILL: Gravelly Clayey SAND: fine, yellow brown mottled pale grey, orange brown and red brown, fine to medium grained gravel, high plasticity clay.	MD			PID = 0ppm at 1.4m, no odour or staining
							Silty SAND: fine to medium, mottled orange brown and grey, with a trace of fine to medium grained sandstone gravel.				RESIDUAL SOIL
							SANDSTONE: fine to medium, pale grey, highly weathered, low strength.				BEDROCK
Borehole BH203 continued as cored hole											

method AD auger drilling* AS auger screwing* RR roller/tricone W washbore CT cable tool HA hand auger DT diatube B blank bit V V bit T TC bit * bit shown by suffix e.g. AD/T	support M mud N nil C casing	penetration  no resistance ranging to refusal	samples & field tests U## undisturbed sample ##mm diameter D disturbed sample B bulk disturbed sample E environmental sample HP hand penetrometer (kPa) N standard penetration test (SPT) N* SPT - sample recovered Nc SPT with solid cone VS vane shearpeak/remoulded (uncorrected kPa) R refusal	classification symbol & soil description based on Unified Classification System	consistency / relative density VS very soft S soft F firm St stiff VSt very stiff H hard Fb friable VL very loose L loose MD medium dense D dense VD very dense
			water 10-Oct-12 water level on date shown water inflow water outflow	moisture D dry M moist W wet	

CDF_0_9_04AL_GLB_Log_COE_BOREHOLE_NON_CORED_GEOTLCOV24303AH_BH20X_SERIES.GPJ <<DrawingFile>> 11/07/2013 15:12

Engineering Log - Cored Borehole

client: **Lend Lease Development Pty Ltd**

principal:

project: **SICEEP - International Convention Centre (ICC) Hotel**

location: **Darling Harbour, Sydney**

Borehole ID: **BH203**

sheet: 2 of 4

project no: **GEOTLCOV24303AH**

date started: **24 May 2013**

date completed: **24 May 2013**

logged by: **CL**

checked by: **DS**

position: E: 333,395.70; N: 6,250,513.50 (Datum Not Specified) surface elevation : 3.10m (Datum Not Specified) angle from horizontal: 90°

drill model: DP520

mounting: Track

hole diameter : 125 mm

drilling information			material substance				rock mass defects			
method & support	water	depth (m)	material description	weathering & alteration	estimated strength & Is(50)	samples, field tests & Is(50) (MPa)	core run & RQD	defect spacing (mm)	additional observations and defect descriptions	
			ROCK TYPE: grain characteristics, colour, structure, minor components		X = axial O = diametral a = axial d = diametral				particular	general
		3								
		1.0								
		2.0								
		0								
		4.0	start coring at 4.10m							
		1	SANDSTONE: fine to medium grained, pale grey, with some grey laminae distinctly cross bedded at 0-5°	HW FR		a=0.90 d=0.41	100%		PT, 0°, PL, RO, CN PT, 0°, PL, RO, CN	
		2				a=1.12 d=0.67			XW SM, 10mm PT, 0°, PL, RO, CN	
		3	SANDSTONE: fine to medium grained, pale grey, with a trace of sideritic flecks, massive				99%			
		4	SANDSTONE: medium to coarse grained, pale grey, with some orange brown laminae, distinctly cross bedded at 0-5° becoming with dark grey shale lenticles			a=0.86 d=0.90			PT, 0°, PL, RO, CN	
				HW		d=0.22	64%		PT, 0°, PL, RO, CN PT, 0°, PL, RO, CN	

method & support DT diatube AS auger screwing AD auger drilling RR roller/tricone CB claw or blade bit W washbore NMLC NMLC core (51.9 mm) NQ wireline core (47.6mm) HQ wireline core (63.5mm) PQ wireline core (85.0mm) SPT standard penetration test	water 10/10/12, water level on date shown water inflow complete drilling fluid loss partial drilling fluid loss water pressure test result (lugeons) for depth interval shown 25uL	graphic log / core recovery core recovered (graphic symbols indicate material) no core recovered core run & RQD barrel withdrawn RQD = Rock Quality Designation (%)	weathering & alteration* RS residual soil XW extremely weathered HW highly weathered DW distinctly weathered MW moderately weathered SW slightly weathered FR fresh *W replaced with A for alteration strength VL very low L low M medium H high VH very high EH extremely high	defect type PT parting JT joint SZ shear zone SS shear surface CS crushed seam SM seam DB drilling break roughness SL slickensided POL polished SO smooth RO rough VR very rough	planarity PL planar CU curved UN undulating ST stepped IR irregular coating CN clean SN stain VN veneer CO coating
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CDF_0_9_04AL_GLB L Log COF BOREHOLE: CORED GEOTLCOV24303AH BH20X SERIES.GPJ <<DrawingFile>> 11/07/2013 15:09

Engineering Log - Cored Borehole

client: **Lend Lease Development Pty Ltd**

principal:

project: **SICEEP - International Convention Centre (ICC) Hotel**

location: **Darling Harbour, Sydney**

Borehole ID: **BH203**

sheet: 3 of 4

project no: **GEOTLCOV24303AH**

date started: **24 May 2013**

date completed: **24 May 2013**

logged by: **CL**

checked by: **DS**

position: E: 333,395.70; N: 6,250,513.50 (Datum Not Specified) surface elevation : 3.10m (Datum Not Specified) angle from horizontal: 90°

drill model: DP520

mounting: Track

hole diameter : 125 mm

drilling information		material substance				rock mass defects			
method & support	water	depth (m)	material description	weathering & alteration	estimated strength & Is(50)	samples, field tests & Is(50) (MPa)	defect spacing (mm)	additional observations and defect descriptions	
RL (m)	depth (m)	graphic log	ROCK TYPE: grain characteristics, colour, structure, minor components	VL L M H VH EH	X = axial O = diametral a = axial d = diametral	core run & RQD	particular	general	
		-5	INTERLAMINATED SHALE (80%) & SANDSTONE (20%): shale is dark grey, sandstone is fine grained, pale grey, distinctly laminated at 0° (<i>continued</i>)	HW					XW SM, 40mm PT, 0°, PL, RO, CN XW SM, 150mm
		-5.08	NO CORE: 0.08 m	FR			64%		
		-6	SANDSTONE: fine grained, pale grey, pebbly			a=1.15 d=1.50			
		-6.5	SANDSTONE: fine grained, pale grey, with grey laminations, distinctly cross bedded at 0-5°			a=0.66 d=0.51			XW SM, 10mm PT, 0°, PL, RO, CN JT, 10°, PL, RO, CN
		-7				a=1.50 d=1.34			
		-8	SANDSTONE: fine to medium grained, pale grey, with some carbonaceous flecks, massive				94%		
		-9				a=1.38 d=1.30			JT, 45°, PL, RO, CN JT, 25°, PL, RO, CN
		-10				a=1.45 d=1.35	100%		PT, 0°, PL, RO, CN
		-11				d=1.40			
		-12	SANDSTONE: fine to medium grained, pale grey, with grey laminae, distinctly across bedded at 0-5°			a=1.36 d=1.16	98%		JT, 10°, PL, RO, CN XW SM, 10mm
		-12.5	with some dark grey shale			a=2.36 d=1.46			PT, 0°, PL, RO, CN
		-13	shale band						

CDF_0_9_04AL_GLB Log COF BOREHOLE: CORED GEOTLCOV24303AH BH20X SERIES.GPJ <<DrawingFiles>> 11/07/2013 15:09

method & support DT diatube AS auger screwing AD auger drilling RR roller/tricone CB claw or blade bit W washbore NMLC NMLC core (51.9 mm) NQ wireline core (47.6mm) HQ wireline core (63.5mm) PQ wireline core (85.0mm) SPT standard penetration test	water 10/10/12, water level on date shown water inflow complete drilling fluid loss partial drilling fluid loss water pressure test result (lugeons) for depth interval shown	graphic log / core recovery core recovered (graphic symbols indicate material) no core recovered core run & RQD barrel withdrawn RQD = Rock Quality Designation (%)	weathering & alteration* RS residual soil XW extremely weathered HW highly weathered DW distinctly weathered MW moderately weathered SW slightly weathered FR fresh *W replaced with A for alteration strength VL very low L low M medium H high VH very high EH extremely high	defect type PT parting JT joint SZ shear zone SS shear surface CS crushed seam SM seam DB drilling break roughness SL slickensided POL polished SO smooth RO rough VR very rough	planarity PL planar CU curved UN undulating ST stepped IR Irregular coating CN clean SN stain VN veneer CO coating
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