

THIS AGREEMENT is made the 22 day of February 2017

FRAMEWORK AGREEMENT NUMBER: PSF91313. CALL OFF CONTRACT NUMBER: 3100908379, LINE NUMBER: 10

BETWEEN:

- (1) **London Underground Limited** whose registered office is at Windsor House, 42-50 Victoria Street, London, SW1H 0TL (“the *Employer*” which expression shall include its successors in title and assigns); and
- (2) Ove Arup & Partners Limited whose registered office is at 13 Fitzroy Street, London W1T 4BQ (“the *Consultant*”).

WHEREAS:

- (A) This Agreement is made pursuant to a framework agreement between the Parties relating to the provision of professional services dated 09 May 2016 (“the Framework Agreement”).
- (B) The *Employer* wishes to have provided Multi Disciplinary Services to support the proposed station capacity upgrade (“the *services*”) at Elephant and Castle Station as more particularly described in the services in the Call off Contract Data Part One.
- (C) The *Employer* has accepted a tender by the *Consultant* for the design of the *services* and correction of Defects therein in accordance with the *conditions of contract*.

NOW IT IS AGREED THAT:

1. Terms and expressions defined in (or definitions referred to in) the *conditions of contract* have the same meanings herein.
2. The *Consultant* Provides the Services in accordance with the *conditions of contract*.
3. The *Employer* pays the *Consultant* the amount due in accordance with the *conditions of contract*.
4. The documents forming the contract are:
 - 4.1 this Form of Agreement duly executed by the Parties as a deed;
 - 4.2 the *conditions of contract*;
 - 4.3 the attached Call-Off Contract Data Part 1;
 - 4.4 the attached Call-Off Contract Data Part 2; and
 - 4.5 the following documents:

- the IMM Protocol;
 - the Scope;
 - Schedules 2A, 9, 11A, 11B, 13, 14, 14A, 15, 17, 19 and 20 inclusive of the Framework Agreement;
 - any other contract documents.
5. Where there is any discrepancy or conflict within or between the documents forming the contract the order of priority shall be as follows:
- 5.1.1 First : This Form of Agreement;
- 5.1.2 Second : The conditions of contract;
- 5.1.3 Third : The IMM Protocol;
- 5.1.4 Fourth : The Scope and any other documents included in this contract.
6. Notwithstanding the manner of execution of this Agreement it is agreed that:
- 6.1 the limitation period within which any claim may be brought by the *Employer* for breach of this Agreement by the *Consultant* is 12 years from the date of breach; and
- 6.2 the *Consultant* agrees not to raise in defence of any such claim a shorter limitation period whether pursuant to the Limitation Act 1980 (as the same may be amended or re-enacted from time to time) or otherwise.

IN WITNESS whereof this Agreement has been signed for and on behalf of the *Employer* and the *Consultant* the day and year written above.

Signed by)
 for and on behalf of)
 The *Employer*)
 Signature Print name and position
 Date: 22/02/17

Signed by)
 for and on behalf of)
 The *Consultant*)
 Signature Print name and position
 Date: 22/02/17

CALL OFF CONTRACT DATA

FRAMEWORK AGREEMENT NUMBER PSF91313. CALL OFF CONTRACT NUMBER: 3100908379

Part One - Data provided by the *Employer*

**Statements given in all
contracts**
1 General

Completion of the data in full, according to the chosen options, is essential to create a complete contract.

- The *conditions of contract* are the core clauses as may be amended or supplemented by the clauses for Main Option A and Secondary Options X2, X8, X10, X18, X20, and X22 each as may be amended or supplemented by the LUL Requirements all as attached to the Transport for London Multi- Disciplinary Services Framework Agreement.

- The *Employer* is
Name: London Underground Limited
Address: Windsor House, 42-50 Victoria Street, London SW1H 0TL
- The *Employer's Agent* is:
Name: Romany O' Dell

Address: Albany House, 55 Broadway, London SW1H 0BD
- The *services* are Multi-Disciplinary Concept Design for Elephant and Castle Station, as per the Scope.
- The Scope is defined in the Scope of Services titled Elephant and Castle Station Capacity Upgrade (ECSCU) Feasibility Review and Concept Design FSP-LU-UIP2152-EC-N139-MAN-BRF-00237 Rev 01 dated 01 Dec 2016.
- The *language of this contract* is **English**
- The *law of the contract* is **the law of England and Wales**
- The *period for reply* is **2 weeks**.
- The *period for retention* is **12 years following Completion or earlier termination**.
- The *tribunal* is **the courts of England and Wales**
- The following matters will be included in the Risk Register

2 The Parties' main responsibilities

- The *Employer* provides access to the following persons, places and things

access to	<i>access date</i>
55 Broadway Complex	from February 2017
Elephant & Castle Station	from February 2017

3 Time

- The *starting date* is the Date of the Agreement.
- The *Consultant* submits revised programmes at intervals no longer than **4 weeks**.

4 Quality

- The quality policy statement and quality plan are provided within **2 weeks** of the Contract Date.
- The *defects date* is **104 weeks** after Completion of the whole of the *services*.

5 Payment

- The *assessment interval* is **4 weeks**
- The *currency of this contract* is **pounds Sterling (£)**
- The *interest rate* is **2 % per annum above the base rate of the Bank of England**.

8 Indemnity, insurance and liability

- The amounts of insurance and the periods for which the *Consultant* maintains insurance are

Event	cover	Period following Completion of the whole of the <i>services</i> or earlier termination
Liability of the <i>Consultant</i> for claims made against him arising out of his failure to use the degree of reasonable skill, care and diligence normally used by competent professionals experienced in providing <i>services</i> similar to the <i>services</i> in connection with works of a similar size, scope and complexity to the Works (professional indemnity insurance)	£1,000,000 for each and every claim and in the aggregate per annum	12 years
Liability for death of or bodily injury to a person (not an employee of the <i>Consultant</i>) or loss of	£5,000,000 in respect of each claim, without limit to the number of claims	12 years

or damage to property resulting from an action or failure to take action by the <i>Consultant</i>		
Liability for death of or bodily injury to employees of the <i>Consultant</i> arising out of and in the course of their employment in connection with this contract.	£10,000,000 in respect of each claim, without limit to the number of claims	12 years

- The *Employer* provides the following insurances:
None

Optional statements

If the *Employer* has decided the *completion date* for the whole of the *services*

- The *completion date* for the whole of the *services* is 30 November 2017.

If no programme is identified in part two of the Contract Data

- The *Consultant* is to submit a first programme for acceptance within **2 weeks** of the Contract Date.

If the *Employer* has identified work which is to meet a stated *condition by a key date*

- The *key dates* and *conditions* to be met are

<i>condition to be met</i>	<i>key date</i>
1
.....
2
.....
3
.....

- **If the Contract Date is not the date of the Call-Off Contract it is:**

[DATE]

If the *Employer* states any *expenses*

- The *expenses* stated by the *Employer* are

Item	amount
.....
.....
.....
.....
.....
.....

If the *Consultant* is to provide additional insurances

- The *Consultant* provides these additional insurances
 1. Insurance against

 Cover is

 Period of cover

 Deductibles are

 2. Insurance against

 Cover is

 Period of cover

 Deductibles are

If Option A is used

- The *Consultant* prepares forecasts of the total *expenses* at intervals no longer than **4 weeks**.

If Option X2 is used

- The *law of the project* is the law of England and Wales.

If Option X7 is used

- Delay damages for Completion of the whole of the *services* are £0 per day.

If Option X18 is used

- The *Consultant's* total liability to the *Employer* for all matters arising under or in connection with this contract, other than the excluded matters, is limited to 500% of the Price.

CALL OFF CONTRACT DATA PART TWO

Data provided by the *Consultant*

Statements given in all contracts

Completion of the data in full, according to the Options chosen, is essential to create a complete contract.

- The *Consultant* is

Name: Ove Arup & Partners Ltd

Address:

13 Fitzroy Street
London
W1T 4BQ .

- The *key persons* are

(1) Name

James Musgrave

Job: Project Director

Responsibilities: As defined in technical proposal submission.

Qualifications: BSc (Civil) Eng, CEng, MICE, MHKIE(Civils)

Experience: Over 20 years' of experience in the design and management of large civil engineering projects, with particular experience in the field of railway engineering.

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(2) Name

Mark Gaby

Job: Design Manager.

Responsibilities: As defined in technical proposal submission

Qualifications: BEng(Hons) Civil Engineering, CEng, MICE, APMP

Experience: Over 20 years design and project management experience on large infrastructure and transportation projects, including integral roles in most of central London's recent underground tunneling designs, including Crossrail, High Speed 1 and 2, and LUL projects at King's Cross Underground Station and Cooling the Tube..

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- The *staff rates* are

As per the TfL Professional Services Framework Agreement – Multidisciplinary Services Categories A1, B1, B3, B8 and B20 with a 15% discount.

Rates are applicable to Variations / Compensation Events only

- The following matters will be included in the Risk Register

-

- Changes to the Project Requirements Statement (FSP-LU-UIP2152-EC-N139-MAN-REQ-00240)
- LUL and Delancey unable to conclude Developer Agreement by 28 July 2017
- Reconciliation of available funding budget and estimated cost can not be achieved

Optional statements

If a programme is to be identified in the Contract Data

The programme identified in the Contract Data is: SCP240 ECSCU Feas Review and Concept Design Tender Programme ARUP.xer

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If the *Consultant* states any expenses

- The *expenses* stated by the *Consultant* are

item	amount
.....
....
.....

.....

If the *Consultant* requires additional access

- The *Employer* provides access to the following persons, places and things

access to	access date
.....
....	.
.....
....	.

If Option A or C is used

- The *activity schedule* is as per SCP240 ECSCU Feas Review and Concept Pricing Document v2 Arup.xlsx
- The tendered total of the Prices is: £474,552 (excluding Optional Costs)

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APPENDIX 1 – THE SCOPE OF SERVICES

Elephant and Castle Station Capacity Upgrade (ECSU) Feasibility and Concept Design - FSP-LU-UIP2152-EC-N139-MAN-BRF-00237-REV01, dated 01/12/2016.

Technical – Primary Documents

1. The Scope of Services – Elephant and Castle Station Capacity Upgrade (ECSU) Feasibility and Concept Design - FSP-LU-UIP2152-EC-N139-MAN-BRF-00237-REV01, dated 01/12/2016.
2. Elephant and Castle Northern Line Ticket Hall Project Requirements, Revision 2.4, dated 30/11/16. File Name 2016 E&C RS Concept Design V2.4 Final Version.pdf
3. Category 1 Standard S 1538 Assurance Issue A11 dated June 2015. File Name S 1538.pdf
4. QUENSH Menu Elephant and Castle Multi Disciplinary Design. Revision 3. File name SCP240 Elephant and Castle Multi Disciplinary Design QUENSH1.doc
5. Category 1 Standard S 1552 Contract QUENSH Conditions A18 dated January 2017. File Name S 1552.pdf

For the full list of LUL technical documents see 'Appendix A – Design Information Inventory', in the Scope of Services.

Note:

1. Where applicable native files are embedded as attachments.

Design Information Inventory

01/12/16

Appendix Number	01/12/2016		Zip file
1	Previous Reports	2009 Aecom	1.1-1.2
		2010 Aecom Lift Only	1.3
		2012 Aecom Feasibility	1.4-1.8
		2013 MA Feasibility	1.8-1.14
		2013 TMA OSD Massing	1.14
		2013 TMA Substation Scoping	1.14
		2013 TMA Subway Integration	1.15-1.16
		2014 Delancey Aliies & Morrison	1.17-1.18
		2014 Motts NLNB Access Study	1.18-1.20
		2014 Motts TMA Feasibility	1.20
		2014 Motts TMA PreFeasibilitly	1.21
		2015 Delancey Allies & Morrison	1.21
		2015 A&M review	1.21
		2015 Review of pre2014 Options	1.21
2016 Definitive Feasibility	1.22-1.28		
2	Demand forecast	20160919_E&C Demand Analysis Note Signed	2 to 22
		E&C 2031 forecast using 2015 RODS	2 to 22
3	LU Cost Feedback Structure		2 to 22
4	LU Cost & Estimating System – Coverage & Inclusion Rules	Coverage and Inclusion Rules Rev A1	2 to 22
		GN-00026	2 to 22
5	Mandatory Asset Information Deliverables (MAID)		2 to 22
6	CCEP		2 to 22
7	Blank Designers Competency Matrix		2 to 22
8	London Underground	LUL Legion station modelling BPG	2 to 22

	Station Modelling with Legion Best Practice Guide		
9	CPD HSE Strategy	Health_Safety_and_Enviromental_Strategy2014_2017	2 to 22
10	TfL Corporate Environmental Framework		2 to 22
11	Link to LU approved Products Register	Link to LU approved Products Register	2 to 22
12	DMP Template	Design Management Plan template	2 to 22
13	Master Information Delivery Plan	FSP-LU-UIP2152-EC-N139-MAN-MIDP-00243	2 to 22
14	Employer's Information Requirements (EIR)	FSP-LU-UIP2152-EC-N139-MAN-REQ-00242	2 to 22
15	Information Modelling & Management (IM&M) Strategy	FSP-LU-UIP2152-EC-N139-MAN-PLN-00246	2 to 22
16	CAD Compliance	S1037 - CAD STANDARD REV A3	2 to 22
17	Standard Method and Procedures Document	FSP-LU-UIP2152-EC-N139-MAN-REQ-00245	2 to 22
18	Information Model Production Delivery Table	Blank form	2 to 22
19	Project Information Exchange Protocol IT Assessment Form	Blank form	2 to 22
		FSP-LU-UIP2152-EC-N139-PIX-00244	2 to 22
20	CDS Template	F-30008	2 to 22
21	CDR Template	F-10111	2 to 22
22	BLE documents	Interchange Options Report R00	2 to 22
		Report Appendices	2 to 22
		Interchange Options Report R01	2 to 22 & 22
23	Non Compliance Register		23 to 27
24	3D As built model of E&C Station	CORE-LU-MAC-N139_Z-CM-K-0006 Composite Model	23 to 27

		SR_142 Issue1	23 to 27
		SR_142.zip	23 to 27
25	Bakerloo Line Flooding Risk Report 2007		23 to 27
26	Air Velocity Survey Report Draft	SPG-VCP-RPT-E&C-0002-draft	23 to 27
27	Power Discipline Records	LU and DNO Block Diagrams	23 to 27
		LU Single Line Diagrams	23 to 27
		Substation Background Information	23 to 27
		Substation Layout	23 to 27
28	Annual Load Plan	BCV and JNP plans	28 to 32
29	Power Load Application Template	F10694 (Form A - LVAC / CEPS / Non-traction DC / Compressed Air)	28 to 32
		F10695 (Form B - LEPS)	28 to 32
		F10696(Form C – DC Traction)	28 to 32
		F10697 (Form D - Public Utility Supply)	28 to 32
		Technical Note - Currently available LVAC and DNO Power	28 to 32
30	Substation and Transformer Room Design Guidance	G0127 A1 - Substation Design	28 to 32
31	Borehole Logs	13no. Borehole logs	28 to 32
32	Geotechnical Documents	1996 Report on GI Pt 1	28 to 32
		1996 Report on GI Pt 2	28 to 32
		2003 Trans4M Desk Study	28 to 32
		2005 Arup Desk Study	32.1 & 32.2
		2014 Delancey Prelim Geo Risk Assessment (Desk Study)	32.3 & 32.4
		2016 Mott MacDonald Desk Study	28 to 32
33	Drainage Plans and Reports		33 to 37
34	PAN TFL Escalator and Lifts	PAN TFL Escalator and Lifts Rev 7	33 to 37
		S1094 A6	33 to 37

35	Fire Strategy Template	Fire Strategy Report Template	33 to 37
36	Station planning standards guidance	G317A A4	33 to 37
37	Sustainability Assessment Template	E&C Sustainability Assessment	33 to 37
38	Integrated Security - A Public Realm Design Guide for Hostile Vehicle Mitigation		38 to 41
39	Protecting Crowded Places – Design and Technical Issues		38 to 41
40	Security in Design of Stations (SIDOS)		38 to 41
41	Urban Realm	Basement Access Scheme	38 to 41
		Peninsular Phasing	38 to 41
		Planning & Urban Realm	38 to 41
		Road Peninsular Scheme	41.2
		E&C Interim Phase Report 6	38 to 41
		EAC_draft report_150203[1]	41.1
		01 Drawings.zip	38 to 41
		02 Models.zip	38 to 41
42	Heritage Report(s)	E&C Heritage features	42 to 44
43	Consultation Strategy + Stakeholder Engagement Delivery Plan	2013 Consents Strategy	42 to 44
44	Property Information	Land ownership files	42 to 44
		Skipton House files	42 to 44 & 44
45	Conservation Documents	Southwark Conservation Areas.pptx	45 to 51
		Larcom Street.pdf	45 to 51
		The Pullens.pdf	45 to 51
		West Square.pdf	45 to 51
46	Construction Constraints	TW Assessment for Existing TW Pipeline and Sewer Assets	45 to 51
		Crane Loads on TW Assets	45 to 51

		Guidelines for Outside Parties working near TW Pipelines, sewers and other structures	45 to 51
		Piling close to TW Sewers & water Mains	45 to 51
47	Asbestos Reports and Register	Asbestos Register	45 to 51
		Full Station Survey 2012	45 to 51
		Substation Asbestos Register 2014	45 to 51
		Lift Headers Asbestos Survey 2009	45 to 51
48	The Control of Dust and Emissions during Construction and Demolition		45 to 51
49	Design Waste Management Plan		45 to 51
50	E&C Station Layouts	BAK_BDG.dgn	45 to 51
		BAK_BOUNDARY.dgn	45 to 51
		BAK_CHA.dgn	45 to 51
		BAK_DTT.dgn	45 to 51
		BAK_PREMISES.dgn	45 to 51
		BCV_RD_NAMES.dgn	45 to 51
		Elephant & Castle N139 Station Layout.pdf	45 to 51
		Index_bak-alp.dgn	45 to 51
		NLTH Room Schedule REV 7.xls	45 to 51
		NNNN0000-DWG-CVL-KA00-0531165.dgn	45 to 51
		trans4m-a3-h.dgn	45 to 51
51	Fire Compliance Plans		45 to 51
52	Drawing pack	Northern Line Drawings	52.3
		Substation drawings	52.2
		Archive Drawing Pack	52.1
		Ventilation Drawing Pack	52.2
53	Tunnel Inspection Reports	Bakerloo Tunnel Reports	53.1 & 53.2
		Northern Tunnel Reports	53.5 & 53.6
		Farrell Court Vent Shaft Reports	53.3 & 53.4
54	Historical Overview	Historical Overview	54 to 55
55	Topographical Survey (pre-		54 to 55

	peninsular)		
56	Utilities	2014 GPR Survey files	56.1
		2014 Thames Water Sewer Survey	56.1 & 56.2
		eMap Utilities Report	56.1
		Scotia Gas Networks	56.3
		Thames Water	56.3
		UKPN	56.3
57	Requirements Specification Template	FSP-LU-UIP2152-EC-N139-ENG-SPC-00251	57 to 63
58	Operational Concept Draft	Ops Concept draft A Nov 2016	57 to 63
59	LU Project Requirements	FSP-LU-UIP2152-EC-N139-MAN-REQ-00240	57 to 63
60	Issues Register	FSP-LU-UIP2152-EC-N139-ENG-LOG-00250	57 to 63
61	Project Risk Register	FSP-LU-UIP2152-EC-N139-ENG-REG-00254	57 to 63
62	Systems Engineering Management Plan	FSP-LU-UIP2152-EC-N139-MAN-PLN-00248	57 to 63
		00142 SEMP addendum	57 to 63
63	Good Practice Guide - Step Free Access Programme	FSP-LU-UIP2152-EC-N139-ENG-REG-00254	57 to 63

Note: Fully detailed list titled: 'SCP240 Design Information Inventory1' provided within the Technical Document Pack.

Additional Documents provided by LUL since the Invitation to Tender:

At Tender Clarification LUL Answers:

Answer A8 dated 19/12/16: Revised 2031 demand data. File name 'Uplifted E&C 2031 forecast using 2015 RODS.XLSX'.

Answer A18 dated 21/12/16: H&S File. File name 'File PBE-00361-HSF-HAS-N139-1560332-Elephant Castle Station Modernisation HS File Rev02'.

21/12/16 Tender Presentation. File name 161220 ECSU – Stage 3 Tender Presentaion.pdf.

Answer A19 dated 21/12/16: 3D Pdf. File Name 'CORE-LU-MAC-N139-Z-CM-K-006. Includes corresponding CAD files, in folder. File name (SR_142.zip).

Answer A28 dated 10/01/17 CESCO Roadmap 2017 Rev 0.2: File name 161214 E and C Roadmap key dates.pdf.

Answer A32 dated 18/02/17 Revised Technical Note: File name 'FSP-LU-UIP2152-EC-N139-TCN-00233- REV1.0 Technical Note - LVAC and DNO Capacity'.

At Post Tender LUL Clarifications:

Clarification A15 dated 10/02/17 concerning load information data.

Clarification A16 dated 10/02/17: Revised demand data 'FSP-LU-UIP2152-EC-N139-ENG-FOR-00267 - REV 01 - Forecast using 2015 RODS.xls'. (Replaces that provided under A8 above).

Clarification A17 dated 10/02/17 concerning the date of delivery for the LU Qualitative Flood Risk Assessment (Scope section 2.6.1), change to 31/03/17.

Clarification A18 dated 10/02/17 concerning the carbon baseline model (Scope section 3.8).

Clarification A19 dated 13/02/17: Standard S1552 A18 Contract QUENSH Conditions.

Clarification A20 dated 13/02/17: F0780 A18 Contract Menu. QUENSH Menu Elephant and Castle Multi Disciplinary Design. Revision 3. File name SCP240 Elephant and Castle Multi Disciplinary Design QUENSH Menu3.doc.

APPENDIX 2 – The Activity Schedule

Main Option clause: A Lump Sum

14/02/16

Activity ID	Activity Detail	Total (£)
EC	Deliverables	
EC1	Initial Deliverables	
EC1.1	Station Visit	
EC1.2	Suppliers Assurance Plan (SAP) / Design Mgt Plan (DMP)	
EC1.3	Systems Engineering Management Plan (SEMP)	
EC1.4	IM&M (BIM) Execution Plan	
EC1.5	Standard Method & Procedure	
EC1.6	Master Information Delivery Plan (MIDP)	
EC1.7	BREEAM Assessment (Building Research Establishment Environmental Assessment)	
EC2	Phase 1 Deliverables	
EC2.1	Phase 1 report	
EC3	Interim Deliverables to support Development Agreement	
EC3.1	Interim cost estimate	
EC3.2	Interim Construction Strategy	
EC3.3	Drawings and sketches	
EC4	Phase 2 - Concept Design	
EC4.1	Design workshops	
EC4.2	Concept Design Submission	
EC4.3	Construction Strategy including programme	
EC4.4	Fire and Evacuation Strategy	
EC4.5	Cost Estimate	
EC4.6	2D CAD files	
EC4.7	3D BIM model	
EC4.8	Renders/ Visualisations (5 no.)	
EC4.9	3D print model	
EC	Designers Risk Register	
	Total:	474,552.00

For the LUMP Sum limit of £474,552.00 exclusive of Value Added Tax (VAT) inclusive of expenses.

Note: Reference the Scope of Services section 2.4 Phase 2 – Concept Design, 'The Consultant does not Commence Phase 2 of the services until instructed to proceed by the Employer'. Here that Instruction shall be initiated by an 'Employers Instruction'.

APPENDIX 2A – Payment Schedule

Payment against agreed milestones. Reference the Scope of Services section 4.

17/02/17

Event	Description	Deliverables	Target Date	Amount, £	Cumulative, £
1	Completion of 'Station Visit'.	1. EC1.1, Station Visit	<ul style="list-style-type: none"> 10/04/17. 		
2	LUL acceptance of 'Initial Deliverables'.	1. EC1.2, Suppliers Assurance Plan (SAP), Design Mgt Plan (DMP). 2. EC1.3, Systems Engineering Mgt Plan (SEMP). 3. EC1.4, IM & M (BIM) Execution Plan. 4. EC1.5, Standard Method and Procedure. 5. EC1.6, Master Information Delivery Plan (MIDP). 6. EC1.7, BREEAM Assessment.	<ul style="list-style-type: none"> Consultants Submission. 2 weeks from Contract Start Date. Review by LUL. within 4 weeks of Contract start date. Acceptance by LUL. after 4 weeks of Contract Start date. 		
3	LUL acceptance of 'Phase 1 Deliverables'.	1. EC2.1, Phase 1 Report.	<ul style="list-style-type: none"> Consultants Submission 31/03/17. Review by LUL within 2 weeks. 		

			<ul style="list-style-type: none"> • Acceptance by LUL after 2 weeks. 		
4	LUL acceptance of 'Interim Deliverables to support the Development Agreement'.	<ol style="list-style-type: none"> 1. EC3.1, Interim Cost Estimate. 2. EC3.2, Interim Construction Strategy. 3. EC3.3, Drawings and Sketches. 	<ul style="list-style-type: none"> • Consultants Submission 28/07/17. • Review by LUL within 2 weeks. • Acceptance by LUL after 2 weeks. 		
5	LUL acceptance of 'Concept Design (Phase 2)'.	<ol style="list-style-type: none"> 1. EC4.1, Design Workshops. 2. EC4.2, Concept Design including Concept Design Statement. 3. EC4.3, Construction Strategy including programme. 4. EC4.4, Fire and Evacuation Strategy. 5. EC4.5, Cost Estimate. 	<ul style="list-style-type: none"> • Consultants Submission 31/10/17. • Review by LUL after 2 weeks. • Acceptance by LUL 		
6	LUL acceptance of 'Concept Design supporting information'.	<ol style="list-style-type: none"> 1. EC4.6, 2D CAD files. 2. EC4.7, 3D BIM model. 3. EC4.8, Renders / Visualisation (5 no.). 4. EC4.9, 3 D Print Model. 5. Designers Risk Register. 	<ul style="list-style-type: none"> • Consultants Submission 31/10/17. • Review by LUL after 2 weeks. • Acceptance by LUL after 2 weeks. 		

APPENDIX 3A – Staff Rates

Arup: Contract Disciplines and Rates used to build up the fixed fee. For information only.

Category (FW)	Discipline (Contract)	Grade	Contract Daily Rate (£)
B8	Tunnelling Engineering	Director	
B8	Tunnelling Engineering	Principal Consultant	
B8	Tunnelling Engineering	Senior Consultant	
B8	Tunnelling Engineering	Consultant	
B8	Tunnelling Engineering	Junior Consultant	
B3	Fire	Director	
B3	Fire	Principal Consultant	
B3	Fire	Senior Consultant	
B3	Fire	Consultant	
B3	Fire	Junior Consultant	
A	Civil Engineering and Structures	Director	
A	Civil Engineering and Structures	Principal Consultant	
A	Civil Engineering and Structures	Senior Consultant	
A	Civil Engineering and Structures	Consultant	
A	Civil Engineering and Structures	Junior Consultant	
A	Premises (Architectural Services)	Director	
A	Premises (Architectural Services)	Principal Consultant	
A	Premises (Architectural Services)	Senior Consultant	
A	Premises (Architectural Services)	Consultant	
A	Premises (Architectural Services)	Junior Consultant	
B1	M & E	Director	
B1	M & E	Principal Consultant	
B1	M & E	Senior Consultant	
B1	M & E	Consultant	
B1	M & E	Junior Consultant	
A	Project Management, Assurance, H&S	Director	
A	Project Management, Assurance, H&S	Principal Consultant	
A	Project Management, Assurance, H&S	Senior Consultant	
A	Project Management, Assurance, H&S	Consultant	
A	Project Management, Assurance, H&S	Junior Consultant	
B20	Information Modelling and Mgt (BIM)	Director	
B20	Information Modelling and Mgt (BIM)	Principal Consultant	
B20	Information Modelling and Mgt (BIM)	Senior Consultant	
B20	Information Modelling and Mgt (BIM)	Consultant	
B20	Information Modelling and Mgt (BIM)	Junior Consultant	

Note:

1. Cost Estimating uses Project Management Grades and Rates.
2. Construction Planning uses Project Management Grades and Rates.
3. Comms and L&E, uses M & E Grades and Rates.

Nominated Staff Grades

Arup: Contract Grades for Variations / Compensation Events.

Person	Role	FW Grade	Business Entity
James Musgrave	Project Director	Director	Arup
Mark Gaby	Design Manager	Director	Arup
Claire McConnell	Lead Architect	Director	Arup
Simon Stephenson	Lead Civils / Tunnels	Principal Consultant	Arup
Simon King	Lead MEP	Principal Consultant	Arup
Rachel Taylor	Lead Fire	Principal Consultant	Arup
Constance Ridout	Lead Interface	Principal Consultant	Arup
Tim Worsfold	DA Lead	Director	Arup
Martin Brown	Requirements and Assurance Manager	Senior Consultant	Arup
Katharina Machule	Senior Architect	Senior Consultant	Arup
Thomas Aldridge	Architect	Consultant	Arup
Michele Mangione	Tunnels	Principal Consultant	Arup
Kenneth Wiseman	Civils / Structures	Principal Consultant	Arup
David Wincott	Mechanical	Director	Arup
Michal Mrozowski	Public Health	Senior Consultant	Arup
Nick Dibben	Lifts and Escalators	Principal Consultant	Arup
Tom Mossop	BIM Coordinator	Senior Consultant	Arup
Tom Honnywill	Construction Planner	Director	Arup
Anna Govier	Sustainability / BREEAM	Principal Consultant	Arup
Cherry Beaumont	Architect	Consultant	Arup
Mark Morris	Cost Manager	Director	Arup
Phil Markham	CDM Advisor	Senior Consultant	Arup
Stuart Haden	Rail Safety	Principal Consultant	Arup
Nadim Choudray	RAMS	Principal Consultant	Arup
David Edge	Consultant	Principal Consultant	Arup

Sub Consultants via Arup: None.

Person	Role	FW Grade	Business Entity

APPENDIX 3B – Rates for Variations / Compensation Events

Arup: TfL Multi Disciplinary Services Framework Rates discounted by 15%.

Category (FW)	Discipline (Framework)	Grade	Contract Daily Rate (£)
A	Civil Engineering and Structures	Director	
A	Civil Engineering and Structures	Principal Consultant	
A	Civil Engineering and Structures	Senior Consultant	
A	Civil Engineering and Structures	Consultant	
A	Civil Engineering and Structures	Junior Consultant	
A	Mechanical & Electrical Engineering	Director	
A	Mechanical & Electrical Engineering	Principal Consultant	
A	Mechanical & Electrical Engineering	Senior Consultant	
A	Mechanical & Electrical Engineering	Consultant	
A	Mechanical & Electrical Engineering	Junior Consultant	
A	Project & Programme Management	Director	
A	Project & Programme Management	Principal Consultant	
A	Project & Programme Management	Senior Consultant	
A	Project & Programme Management	Consultant	
A	Project & Programme Management	Junior Consultant	
A	Asset Management	Director	
A	Asset Management	Principal Consultant	
A	Asset Management	Senior Consultant	
A	Asset Management	Consultant	
A	Asset Management	Junior Consultant	
A	Architectural Services	Director	
A	Architectural Services	Principal Consultant	
A	Architectural Services	Senior Consultant	
A	Architectural Services	Consultant	
A	Architectural Services	Junior Consultant	
B1	Mechanical & Electrical Engineering	Director	
B1	Mechanical & Electrical Engineering	Principal Consultant	
B1	Mechanical & Electrical Engineering	Senior Consultant	
B1	Mechanical & Electrical Engineering	Consultant	
B1	Mechanical & Electrical Engineering	Junior Consultant	
B3	Fire and Safety Engineering	Director	
B3	Fire and Safety Engineering	Principal Consultant	
B3	Fire and Safety Engineering	Senior Consultant	
B3	Fire and Safety Engineering	Consultant	
B3	Fire and Safety Engineering	Junior Consultant	
B8	Tunnelling Engineering	Director	
B8	Tunnelling Engineering	Principal Consultant	
B8	Tunnelling Engineering	Senior Consultant	
B8	Tunnelling Engineering	Consultant	
B8	Tunnelling Engineering	Junior Consultant	
B20	Information Modelling and Mgt (BIM)	Director	
B20	Information Modelling and Mgt (BIM)	Principal Consultant	
B20	Information Modelling and Mgt (BIM)	Senior Consultant	
B20	Information Modelling and Mgt (BIM)	Consultant	
B20	Information Modelling and Mgt (BIM)	Junior Consultant	

APPENDIX 4 – COMPLETED F0780 CONTRACT MENU (QUENSH MENU)