Contract No. 1.11.4.3463.

To Be Quoted On All Correspondence

CONTRACT

between

THE HEALTH AND SAFETY EXECUTIVE

and

OVE ARUP & PARTNERS LIMITED

for

REPRESENTATIVE MAJOR ACCIDENT SCENARIOS FOR HIGH RISE RESIDENTIAL BUILDINGS

CONTENTS

This Contract is made between:

The **HEALTH AND SAFETY EXECUTIVE** (acting as part of the Crown) of Redgrave Court, Merton Road, Bootle, Merseyside, L20 7HS (hereinafter called 'the HSE' of the one part) and

OVE ARUP & PARTNERS LIMITED, company registration number 1312453 and whose registered office is at 13 Fitzroy Street, London W1T 4BQ (hereinafter 'the Contractor' of the other part), in accordance with the details, terms and conditions stated herein.

WHEREAS

The Contractor was successful as a result of an open tender exercise to deliver the services indentified in Schedule A.

1 GENERAL CONDITIONS

1.1 This Contract will be subject to the HSE Standard Terms and Conditions of Contract for the Provision of Services, attached as Schedule B. However, where any conflict exists between the clauses in this Contract and the Terms and Conditions at Schedule B, then the clauses in this Contract will prevail. The Clauses in this Contract and the Terms and Conditions at Schedule B will also govern all Purchase Orders placed against this Contract.

2 ENTIRE AGREEMENT

2.1 This Contract constitutes the entire agreement and understanding between the parties concerning the subject matter hereof and supercedes all prior agreements, both oral and written, representations, statements, negotiations and undertakings.

3 STATEMENT OF SERVICE REQUIREMENTS

3.1 The Contractor will carry out on behalf of the HSE a Statement of Services (hereinafter called the "Services") as detailed in Schedule A to this Contract.

3.2 The Contractor shall organise and conduct the entire Services in consultation with the HSE where appropriate, and provide all necessary resources of personnel, materials, Services and equipment, except for such resources that may be provided by the HSE at its discretion.

3.3 No undertaking shall be deemed to have been made by the HSE in respect of the total quantities or values of the Services to be ordered pursuant to this contract and the Contractor acknowledges and agrees that it has not entered into this contract on the basis of any such undertaking.

4 MANAGEMENT OF THE CONTRACT

4.1 The HSE Contract Manager who will be responsible for liaison and certifying completion of the provision and overall management of the Services is identified at Annex 1.

4.2 The Services will be monitored by the Contract Manager who will also evaluate the provision on completion.

4.3 In all cases, both parties will work within the agreed timescales/constraints and costs outlined at the beginning of the commission.

5 DURATION

5.1 The Services shall de deemed to have commenced on 02 September 2019 and shall be completed by 31 January 2020.

6 COSTS

6.1 The total amount to be paid by the HSE to the Contractor for the Services shall not exceed £50,000.00, exclusive of VAT.

6.2 Any additional costs will be agreed in advance with the HSE Contract Manager and subject to clause 15 Variation to Contract.

6.3 Where appropriate, and subject to the HSE Contract Manager's approval, actual and reasonable travel and subsistence costs shall be payable in line with the rates agreed at Annex 2.

7 IR35 – INTERMEDIARIES LEGISLATION

7.1 HSE has undertaken an IR35 assessment of this engagement, and the HMRC online assessment tool determined that IR35 does not apply to this engagement.

8 TAX STATUS

8.1 Where the Contractor, or its staff, is liable to be taxed in the UK in respect of consideration received under this contract, it shall at all times comply with the Income Tax (Earnings and Pensions) Act 2003 (ITEPA) and all other statues and regulations relating to income tax in respect of that consideration.

8.2 Where the Contractor, or its staff, is liable to National Insurance Contributions (NICs) in respect of consideration received under this contract, it shall at all times comply with the Social Security Contributions and Benefits Act 1992 (SSCBA) and all other statutes and regulations relating to NICs in respect of that consideration.

8.3 HSE may, at any time request that the Contractor provides information which demonstrates how it, or its staff, complies with Clauses 8.1 and 8.2 above or why those Clauses do not apply to it.

8.4 A request under Clause 8.3 above may specify the information which the Contractor, or its staff, must provide and the period within which that information must be provided.

8.5 HSE may terminate this contract if

a) in the case of a request mentioned in Clause 8.3 above-

(i) The Contractor, or its staff, fails to provide information in response to the request within a reasonable time, or
(ii) The Contractor, or its staff, provides information which is inadequate to demonstrate either how it complies with Clauses 8.1 and 8.2 above or why those Clauses do not apply to it;

(b) in the case of a request mentioned in Clause 8.4 above, The Contractor, or its staff, fails to provide the specified information within the specified period, or

(c) it receives information which demonstrates that, at any time when Clauses 9.1 and 9.2 apply the Contractor, or its staff, is not complying with those Clauses.

8.6 HSE may supply any information which it receives under Clause 8.3 to the Commissioners of Her Majesty's Revenue and Customs for the purposes of the collection and management of revenue for which they are responsible.

9 INVOICING AND PAYMENTS

9.1 All invoices raised must include the relevant Purchase Order number which will be issued by HSE Procurement Unit. Failure to include the Purchase Order Number may delay payment. Invoices should be submitted electronically in PDF format to APinvoices-HAS-U@sscl.gse.gov.uk.

9.2 Invoices should also include details of work satisfactorily carried out and any VAT properly chargeable.

9.3 HSE shall make payment of agreed costs, in arrears, within 30 days of the acceptance of the invoice.

9.4 The Contractor shall send a copy invoice along with details of any work satisfactory carried out to the HSE Contract Manager identified at Annex 1.

10 DELIVERABLES

10.1 The Contractor shall provide access to the services and personnel identified in their submission embedded within Schedule A.

11 INTELLECTUAL PROPERTY

11.1 Your attention is drawn to clauses E8 within Schedule B of the attached standard terms and conditions.

12 ACCESS TO HSE PREMISES

12.1 It shall be the Contractor's responsibility to ensure that, where access to HSE Premises or HSE confidential information is necessary, personnel engaged in the performance of this Contract shall have undergone pre-employment checks covering identity, the last three years employment history, nationality and immigration status and criminal record for unspent convictions. Such checks shall meet the requirements of HMG Baseline Security Standard.

12.2 HSE reserves the right, at its sole discretion, to carry out audits and spot checks at any time during the Contract Period to satisfy itself that the checks have been carried out. Guidance on pre-employment checks may be found at http://www.cabinetoffice.gov.uk/sites/default/files/resources/hmg-personnel-security-controls.pdf

13 CONFIDENTIALITY

13.1 The Contractor shall not at any time divulge any information or material acquired during the performance of this Contract to any third party without prior permission in writing of the Executive, except where required in the course of any legal proceedings.

13.2 The Contractor shall keep documents and other materials produced or acquired in the course of the contract in accordance with The Criminal Procedure and Investigations Act 1996 (CPIA).

13.3 HSE may disclose the Confidential Information of the Contractor:

(a) on a confidential basis to any Central Government Body for any proper purpose of the Authority or of the relevant Central Government Body;

(b) to Parliament and Parliamentary Committees or if required by any Parliamentary reporting requirement;

(c) to the extent that the Authority (acting reasonably) deems disclosure necessary or appropriate in the course of carrying out its public functions;

(d) on a confidential basis to a professional adviser, consultant, supplier or other person engaged by any of the entities described in Clause 13.3(a) (including any benchmarking organisation) for any purpose relating to or connected with this Contract;

(e) on a confidential basis for the purpose of the exercise of its rights under this Contract; or

(f) on a confidential basis to a proposed Successor Body in connection with any assignment, novation or disposal of any of its rights, obligations or liabilities under this Contract,

and for the purposes of the foregoing, references to disclosure on a confidential basis shall mean disclosure subject to a confidentiality agreement or

arrangement containing terms no less stringent than those placed on the Authority under this Clause.

14 PUBLICATION

14.1 The parties acknowledge that, except for any information which is exempt from disclosure in accordance with the provisions of the FOIA, the content of this Contract is not Confidential Information. HSE shall be responsible for determining in its absolute discretion whether any of the content of the Contract is exempt from disclosure in accordance with the provisions of the FOIA.

14.2 Notwithstanding any other term of this Contract, the Contractor hereby gives his consent for HSE to publish the Contract in its entirety, including from time to time agreed changes to the Contract, to the general public.

14.3 HSE may consult with the Contractor to inform its decision regarding any redactions but HSE shall have the final decision in its absolute discretion.

14.4 The Contractor shall assist and co-operate with HSE to enable HSE to publish this Contract.

15 VARIATION TO CONTRACT

15.1 Except where expressly stated in this contract, no change, amendment or modification shall be effective unless in writing and signed by the duly authorised representatives of both parties.

15.2 Any agreed changes to the Contract or Schedule A (Statement of Service Requirement) will be in the form of a Contract Change Note (CCN), which will be raised and issued by the HSE Procurement Unit.

16 GOVERNING LAW

16.1 This Contract shall be governed by and interpreted in accordance with English law and the Parties submit to the exclusive jurisdiction of the courts of England and Wales.

17 TERMINATION

17.1 This Contract may be terminated by either party by giving one months written notice. In the event of termination by HSE, the Contractor shall be provided with any re-imbursement of costs, actually and reasonably incurred, up to the date of termination, subject to the limit specified in Clause 6 above.

As Witnessed at the Hands of the Parties

SIGNATORIES

IN WITNESS WHEREOF THIS CONTRACT HAS BEEN AGREED :

Signature _____

Name in Capitals _____

Position _____

Date _____

Duly authorised to sign on behalf of

OVE ARUP & PARTNERS LIMITED
13 Fitzroy Street, London W1T 4BQ

Signature _____

Name in Capitals _____

Position Procurement Manager

Date _____

Duly authorised to sign on behalf of the

HEALTH AND SAFETY EXECUTIVE
Procurement Unit, Building 2.3, Redgrave Court, Merton Road, Bootle, Merseyside L20 7HS

Schedule A

The Contractor shall undertake the following Statement of Service titled "Representative Major Accident Scenarios For High Rise Residential Buildings", dated 23 July 2019 and referenced HSE/T3463 at Part 1 and the Contractor's proposal, dated 12 august 2019 at Part 2:-

STATEMENT OF SERVICE – PART 1

STATEMENT OF SERVICE REQUIREMENTS FOR REPRESENTATIVE MAJOR ACCIDENT SCENARIOS FOR HIGH RISE RESIDENTIAL BUILDINGS

1 HSE, SCIENCE DIVISION

HSE Science division is one of the world's leading providers of workplace health and safety research, training and consultancy. We employ over 350 scientific, medical and technical specialists. We are part of the Health and Safety Executive (HSE). Carrying out investigations for HSE gives us unique insight into the causes of workplace accidents and ill-health.

We have been developing health and safety solutions for over 100 years, so we know what goes wrong in the workplace and why. Our particular strength is in bringing together different disciplines and teams to create practical, innovative and useful solutions. These include:

- Expert advice and consultancy;
- Targeted research;
- Testing and modelling;
- Tools for your organisation;
- Specialised training.

We take an evidence-based approach when evaluating workplace problems, drawing on our wealth of scientific research and knowledge. We have an international reputation for high-quality research and we collaborate worldwide through a network of partnerships.

2 BACKGROUND

The Ministry of Housing, Communities and Local Government (MHCLG) has established the Building Safety Programme (BSP) to cover High-Rise Residential Buildings (HRRB) over 18 metres, including hotels, to make sure that residents of HRRB are safe and feel safe, now and in the future. The BSP is tasked to deliver and implement the recommendations within "Building a Safer Future – Independent Review of Building Regulations and Fire Safety: Final Report". The Review looked at the regulatory framework around the construction, maintenance and ongoing use of buildings, with a particular focus on multi-occupied, HRRB. It gave recommendations to establish a new regulatory framework and achieve a culture change to create and maintain safe buildings.

The Government has committed to bring forward legislation that delivers a step change. This commitment includes the introduction of a safety case approach to building safety which requires that those responsible for risks fully understand them, own them and take measures to manage and mitigate them both in design and in occupation. They will need to document and communicate these risks to all those with an interest. Buildings should be considered in a holistic manner and mitigation measures should be layered appropriately based on the use of the building and the risks posed.
The Health and Safety Executive (HSE) as a safety regulator has been working closely with MHCLG to support the development of the safety case approach.

The research will seek to replicate the approach taken to risk management in the major hazard sectors by industry and regulators. Public assurance is provided on the basis that at an implementation/operational policy level the regulators and industry agree the risk management arrangements. At the heart of this, there is an understanding between industry and the regulators of the representative major accident scenarios for different industry sectors which has been developed over a number of years and has been documented in guidance (written by industry, regulators, international organisations, professional bodies), as well as in safety cases.

Using appropriate research methodologies, this project aims to identify:

- A set of representative major accident scenarios for fire, explosion and collapse;
- A set of outlying major accident scenarios for fire, explosion and collapse;
- A set of other representative accident scenarios for fire, explosion and collapse which are unlikely to be major accidents;
- A set of typical control measures for the representative major accident scenarios by engineering, processes and procedures, and people;
- An understanding of where each of the representative major accident scenarios fit in the life cycle of a HRRB and proposed regulatory.
- The research methodology will be draw on industry normal practice and industry best practice, the different regulatory approaches of the key regulators, and will be highly interactive. It will be supported by academic input, drawing upon their expertise within the field of building structural integrity.

This tender is to find a specialist sub contactor to work alongside HSE to support the delivery of the project detailed below. The scope of this support is identified in section 3, where there is an overview of the full project and work packages. Table 1 within the section provides the detail of the specific work required by the contractor for each of these work packages'.

3 SCOPE OF THE SERVICES REQUIRED

The project HSE will deliver is divided into a number of work packages. This tender is for the supplier who, having Structural engineering experience and knowledge, can support HSE in the delivering these work packages. The tasking will include carrying out some research alongside supporting several focus groups and workshops.

Tasking against these work packages is as follows:

WP1 - Landscape mapping

1.1 Rapid Evidence Assessment

The aim is to establish the context of credible major accident scenarios for HRRB. A literature review will be undertaken to identify what is currently known about potential major hazard scenarios applicable to the high-rise residential buildings (HRRB). The objectives of this work package are to:

Review existing research, documents and literature, to determine:

- Current thinking regarding potential major accident scenarios related to HRRB, and their prevention and mitigation;
- The efficacy of existing methods for prevention and mitigation where these are identified;

- Current standards relating specifically to HRRB codes of practice and risk management;
- The applicability of these methods to regulators.
- Guidance words/topics for subsequent Hazard Identification/Scenarios.
- Draw together and synthesise the existing evidence, and clearly identify and summarise the key messages.
- Identify gaps in the existing evidence base and suggest how these gaps might be addressed as part of this project.

1.2 Review of regulatory approaches to risk management

The purpose of this activity is to ensure that the project learns from existing regulatory approaches across the major hazard spectrum, draws on current industry good / best practice and begins to establish a consensus between the regulators and industry regarding risk management arrangements.

1.3 Defining a major accident and establishing the Tolerability of Risk (ToR)

A feature shared by the major hazard sectors is that they can have accidents that have a high impact but are of a low frequency compared to other sectors that have more frequent accidents with a lower impact. It is society's aversion to these high impact accidents that necessitates a more robust regulatory regime to provide public assurance.

1.4 Stakeholder mapping exercise

This will be an iterative process and involve both technical and project stakeholders.

1.5 Initial Stakeholder Workshop

An initial stakeholder workshop will be used to present the findings of activities above. Participants will be given a summary of activities to date in the form of a participant briefing, provided in advance of workshop attendance.

WP2 – Defining major accident scenarios

2.1 Technical Focus Groups

In order to identify the relevant major accident hazards and the representative set of major accident scenarios, a series of technical focus groups will be undertaken with the following groups:

- Industry;
- Regulators;
- Approved Inspectors;
- JRG & Engineering Competence Group;
- A mixed group representing all stakeholders.

It is envisaged that the technical focus groups will be run in a similar fashion to Hazard identification/Hazard and Operability Analysis studies used in other major hazard sectors. Each technical focus group will take place over the course of one day. The supplier will be expected to technically input/support each one of these focus groups as subject matter experts in the field of Structural integrity/Civil Engineering.

2.2 Visualisation of major accident scenarios

The information gathered to this point will be summarised using Bow-tie diagrams. The Bow-tie method is a risk evaluation method that can be used to analyse and demonstrate causal relationships in high risk scenarios.

2.3 Validation/challenge workshop

A validation/challenge workshop will be held with technical and project stakeholders to verify the content of the proposed major accident scenarios.

The HSE deliverables for the above activities are as follows:

- Deliverable 1 – Concept report
- Deliverable 2 – Hazard identification
- Deliverable 3 – Bow-tie Diagrams
- Deliverable 4 – Project report

All focus groups and workshops will be held in MHCLG offices in London

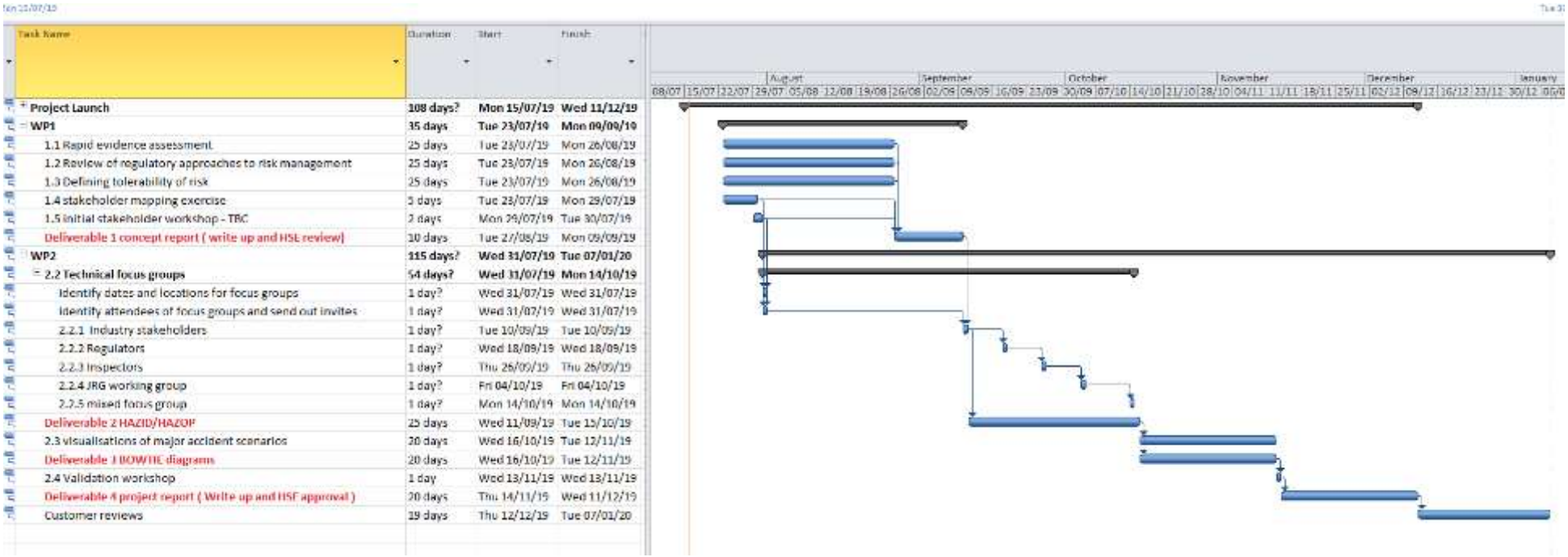
The expectations and output expected of the supplier including the pricing methods are in the table below:

	Activity	**Type of Support required from this tender supplier**	**Deliverable**
WP1	1.1 Rapid Evidence Assessment	A. Carry out full Literature review as per the proposal text. B. On request review info obtained and support input	A. Literature review report from a structural/civil engineering perspective B. Comment of final output if requested
	1.2 Review of regulatory approaches to risk management	On request review information obtained	Comments on HSE outputs
	1.3 Defining a major accident and establishing the Tolerability of Risk (ToR)	On request review information obtained	Comments on HSE outputs
	1.4 Stakeholder mapping exercise	On request review information obtained	Comments on HSE outputs
	1.5 Initial Stakeholder Workshop	Attend workshop (1 day in duration)	Input as required to ensure successful output from workshop
WP2	2.1 Technical Focus Groups		
	2.1a Industry	Attend Focus group (1 day duration)	provide Input to the group, support decision and ensure output is successful

	2.1b Regulators;	Attend Focus group (1 day duration)	provide Input to the group, support decision and ensure output is successful
	2.1c Approved Inspectors	Attend Focus group (1 day duration)	provide Input to the group, support decision and ensure output is successful
	2.1d JRG & Engineering Competence Group	Attend Focus group (1 day duration)	provide Input to the group, support decision and ensure output is successful
	2.1e A mixed group representing all stakeholders	Attend Focus group (1 day duration)	provide Input to the group, support decision and ensure output is successful
	2.2 Visualisation of major accident scenarios	On request review information obtained	Comments on HSE outputs
	2.3 Validation / challenge workshop	Attend Workshop (1 day duration)	provide Input to the group, support decision and ensure output is successful
Outputs	Deliverable 1 – Concept report	On request support information inputs and if requested review report outputs	Supply information or comment as requested
	Deliverable 2 – Hazard identification	On request support information inputs and if requested review report outputs	Supply information or comment as requested
	Deliverable 3 - Bowtie Diagrams	On request support information inputs and if requested review report outputs	Supply information or comment as requested
	Deliverable 4 – Project report	On request support information inputs and if requested review report outputs	Supply information or comment as requested

Timeline

It should be noted the project is underway with a contacted end point of January 2020. The initial timeframe for the activities outlined is shown in the Gantt chart below. The supplier must be able to support the activities and deliverables according to this plan or any iteration of it.



Task Name	Duration	Start	Finish
Project Launch	108 days?	Mon 15/07/19	Wed 11/12/19
WP1	35 days	Tue 23/07/19	Mon 09/09/19
1.1 Rapid evidence assessment	25 days	Tue 23/07/19	Mon 26/08/19
1.2 Review of regulatory approaches to risk management	25 days	Tue 23/07/19	Mon 26/08/19
1.3 Defining tolerability of risk	25 days	Tue 23/07/19	Mon 26/08/19
1.4 stakeholder mapping exercise	5 days	Tue 23/07/19	Mon 29/07/19
1.5 initial stakeholder workshop - TBC	2 days	Mon 29/07/19	Tue 30/07/19
Deliverable 1 concept report (write up and HSE review)	10 days	Tue 27/08/19	Mon 09/09/19
WP2	115 days?	Wed 31/07/19	Tue 07/01/20
2.2 Technical focus groups	54 days?	Wed 31/07/19	Mon 14/10/19
Identify dates and locations for focus groups	1 day?	Wed 31/07/19	Wed 31/07/19
Identify attendees of focus groups and send out invites	1 day?	Wed 31/07/19	Wed 31/07/19
2.2.1 Industry stakeholders	1 day?	Tue 10/09/19	Tue 10/09/19
2.2.2 Regulators	1 day?	Wed 18/09/19	Wed 18/09/19
2.2.3 Inspectors	1 day?	Thu 26/09/19	Thu 26/09/19
2.2.4 JRG working group	1 day?	Fri 04/10/19	Fri 04/10/19
2.2.5 mixed focus group	1 day?	Mon 14/10/19	Mon 14/10/19
Deliverable 2 HAZID/HAZOP	25 days	Wed 11/09/19	Tue 15/10/19
2.3 visualisations of major accident scenarios	20 days	Wed 16/10/19	Tue 12/11/19
Deliverable 3 BOWTIE diagrams	20 days	Wed 16/10/19	Tue 12/11/19
2.4 Validation workshop	1 day	Wed 13/11/19	Wed 13/11/19
Deliverable 4 project report (Write up and HSE approval)	20 days	Thu 14/11/19	Wed 11/12/19
Customer reviews	19 days	Thu 12/12/19	Tue 07/01/20

4 REQUIRED EXPERIENCE / QUALIFICATIONS

The minimum requirements for those wishing to submit a tender are:

- Project team to be made up of Chartered Engineers and membership of either Institution of Structural Engineers or Institution of Civil Engineers;
- Experience in the design of high rise building structures;
- Experience of integrating with other disciplines associated with building design, such as architects, M&E designers, fire safety specialists etc.;
- Experience of the full lifespan of buildings, from concept design, detailed design, refurbishment/maintenance, (ideally) through to demolition;
- Ability to demonstrate professional competence/experience and credability;
- Declaration of any conflict of interest with ongoing investigations;
- A single point of contact for all communications between HSE and themselves even though they may utilise several individuals to deliver the project.

5 GOVERNANCE AND PERFORMANCE MANAGEMENT ARRANGEMENTS

A monthy report of hours/persons booked against the project will be required. Ths will be checked off against the Invoices submitted.

Literature search report deliverable will need to be issued within 3 weeks of contract award

All requests for comments and review on reports or data should be turned around within two working days.

A single point of contact should be given with an appropriate deputy for the duration of the project.

6 ADDITIONAL INFORMATION AND CONSIDERATIONS

The contract will begin on the successful completion of this tender.

The project end date is currently 31 January 2020. This may be extended if the project scope increases.

Budget

Submissions for the support of this contact are expected to be IRO £50,000

Costs and fees

- The tender should indicate cost using schedule A and the assumptions used
- The assumptions used are for comparison purposes.
- The tender should give an estimate of T&S requied (please use government rules on T&S)

Invoicing is anticipated to be at the following points

- Upon completion of WP1
- Upon completion of WP2
- Upon delivery of the final report

Submitted Invoices will require timesheets of hours used and breakdown of other costs

STATEMENT OF SERVICE – PART 2

The contractor's submission as embedded in this Schedule below:-

HSE

Health and Safety Executive

Schedule B (Part A)

TENDER SUBMISSION FORM FOR TENDER REF HSE/T3463

REPRESENTATIVE MAJOR ACCIDENT SCENARIOS FOR HIGH RISE RESIDENTIAL BUILDINGS

Part 1: Potential Supplier Information

Please answer the following questions in full. Note that every organisation that is being relied on to meet the selection must complete and submit the Part 1.

	Question	Response
1.1 (a)	Full name of the potential supplier submitting the information	Ove Arup & Partners Limited
1.1 (b) – (i)	Registered office address (if applicable)	13 Fitzroy Street, London W1T 4BQ
1.1 (b) – (ii)	Registered website address (if applicable)	http://www.arup.com
1.1 (c)	Trading status a) public limited company b) limited company c) limited liability partnership d) other partnership e) sole trader f) third sector g) other (please specify your trading status)	b) limited company
1.1 (d)	Date of registration in country of origin	4 May 1977
1.1 (e)	Company registration number (if applicable)	1312453
1.1 (f)	Charity registration number (if applicable)	N/A
1.1 (g)	Head office DUNS number (if applicable)	22-776-0899
1.1 (h)	Registered VAT number	GB 524 4612 65
1.1 (i) – (i)	If applicable, is your organisation registered with the appropriate professional or trade register(s) in the member state where it is established?	Yes X No ☐ N/A ☐
1.1 (i) – (ii)	If you responded yes to 1.1(i) - (i), please provide the relevant details, including the registration number(s).	We are registered at Companies House. Registration Number: 1312453
1.1 (j) – (i)	Is it a legal requirement in the state where you are established for you to possess a particular authorisation, or be a member of a particular organisation in order to provide the	Yes ☐ No X

	services specified in this procurement?	
1.1 (j) – (ii)	If you responded yes to 1.1(j) - (i), please provide additional details of what is required and confirmation that you have complied with this.	
1.1 (k)	Trading name(s) that will be used if successful in this procurement	Arup Ove Arup & Partners Limited
1.1 (l)	Relevant classifications (state whether you fall within one of these, and if so which one) a) Voluntary Community Social Enterprise (VCSE) b) Sheltered Workshop c) Public service mutual	N/A
1.1 (m)	Are you a Small, Medium or Micro Enterprise (SME)[1]?	Yes ☐ No X
1.1 (n)	Details of Persons of Significant Control (PSC), where appropriate[2]: - Name; - Date of birth; - Nationality; - Country, state or part of the UK where the PSC usually lives; - Service address; - The date he or she became a PSC in relation to the company (for existing companies the 6 April 2016 should be used); - Which conditions for being a PSC are met; - Over 25% up to (and including) 50%, - More than 50% and less than 75%. - 75% or more.[3] (Please enter N/A if not applicable)	- Ove Arup & Partners International Limited - 18 April 1969 - United Kingdom - London, UK - 13 Fitzroy Street, London, W1T 4BQ, UK - 6 April 2016 - 75% or more *[In accordance with the Companies Act a company can be used for the Persons of Significant Control (PSC).]*
1.1 (o)	Details of immediate parent company: - Full name of the immediate parent company - Registered office address (if applicable) - Registration number (if applicable) - Head office DUNS number (if applicable) - Head office VAT number (if applicable) (Please enter N/A if not applicable)	- Ove Arup & Partners International Limited - 13 Fitzroy Street, London, W1T 4BQ - 952468 - 29-042-2336 - GB 524 4612 65

[1] See EU definition of SME: http://ec.europa.eu/enterprise/policies/sme/facts-figures-analysis/sme-definition/

[2] UK companies, Societates European (SEs) and limited liability partnerships (LLPs) will be required to identify and record the people who own or control their company. Companies, SEs and LLPs will need to keep a PSC register and must file the PSC information with the central public register at Companies House. See PSC guidance

[3] Central Government contracting authorities should use this information to have the PSC information to the preferred supplier checked before award

1.1 (p)	Details of ultimate parent company: - Full name of the ultimate parent company - Registered office address (if applicable) - Registration number (if applicable) - Head office DUNS number (if applicable) - Head office VAT number (if applicable) (Please enter N/A if not applicable)	- Arup Group Limited - 13 Fitzroy Street, London, W1T 4BQ - 1312454 - 22-715-0174 - GB 524 4612 65

Please note: A criminal record check for relevant convictions may be undertaken for the preferred suppliers and the persons of significant in control of them.

Please provide the following information about your approach to this procurement:

Section 1	Bidding model			
Question number	Question		Response	
1.2 (a) – (i)	Are you bidding as the lead contact for a group of economic operators?		Yes ☐ No X If yes, please provide details listed in questions 1.2(a) (ii), (a) (iii) and to 1.2(b) (i), (b) (ii), 1.3, Section 2 and 3. If no, and you are a supporting bidder please provide the name of your group at 1.2(a) (ii) for reference purposes, and complete 1.3, Section 2 and 3.	
1.2 (a) – (ii)	Name of group of economic operators (if applicable)		Not applicable	
1.2 (a) – (iii)	Proposed legal structure if the group of economic operators intends to form a named single legal entity prior to signing a contract, if awarded. If you do not propose to form a single legal entity, please explain the legal structure.		Not applicable	
1.2 (b) – (i)	Are you or, if applicable, the group of economic operators proposing to use sub-contractors?		Yes X No ☐	
1.2 (b) – (ii)	If you responded yes to 1.2(b)-(i) please provide additional details for each sub-contractor in the following table: we may ask them to complete this form as well.			
	Name	The Concrete Centre Limited		
	Registered address	Gillingham House, London SW1V 1HU		
	Trading status	Private company limited by guarantee without share capital		
	Company registration number	04667308		
	Head Office DUNS	733941012		

	number (if applicable)			
	Registered VAT number	Unreported		
	Type of organisation			
	SME (Yes/No)	No		
	The role each sub-contractor will take in providing the works and/or supplies e.g. key deliverables	Provision of specialist knowledge/support		
	The approximate % of contractual obligations assigned to each sub-contractor	5%		

Section 1	Exclusion grounds	
Question number	Question	Response
1.3 (a) – (i)	Do any of the mandatory grounds for exclusion, detailed in Part 2 Section 2 of the Standard Selection Questionnaire, apply in respect of your organisation or any other economic operator (including sub-contractors) involved in the delivery of this contract?	Yes ☐ No X
1.3 (a) – (ii)	If you responded Yes to Question 1.3 (a) – (i) above please provide full details.	
1.3 (a) – (iii)	Do any of the discretionary grounds for exclusion, detailed in Part 2 Section 3 of the Standard Selection Questionnaire, apply in respect of your organisation or any other economic operator (including sub-contractors) involved in the delivery of this contract ?	Yes ☐ No X
1.3 (a) – (iv)	If you responded Yes to Question 1.3 (a) – (iii) above please provide full details and explain what measures been taken to demonstrate the reliability of the organisation despite the existence of a relevant ground for exclusion? (Self-Cleaning).	

Contact details and declaration

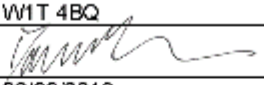
I declare that to the best of my knowledge the answers submitted and information contained in this document are correct and accurate.

I declare that, upon request and without delay I will provide the certificates or documentary evidence referred to in this document.

I understand that the information will be used in the selection process to assess my organisation's suitability to be invited to participate further in this procurement.

I understand that the authority may reject this submission in its entirety if there is a failure to answer all the relevant questions fully, or if false/misleading information or content is provided in any section.

I am aware of the consequences of serious misrepresentation.

Section 1	Contact details and declaration	
Question number	**Question**	**Response**
1.4 (a)	Contact name	David Cormie
1.4 (b)	Name of organisation	Ove Arup & Partners Limited
1.4 (c)	Role in organisation	Associate Director
1.4 (d)	Phone number	+44 20 7755 4463
1.4 (e)	E-mail address	david.cormie@arup.com
1.4 (f)	Postal address	13 Fitzroy Street, London W1T 4BQ
1.4 (g)	Signature (electronic is acceptable)	
1.4 (h)	Date	09/08/2019

Part 2: Procurement Specific Questions[4]

		Weighting
1.	Describe your expertise and experience of structural engineering and civil engineering in High Rise Buildings. Provide examples of when this has been applied. This response will be scored between 1 and 5 based on HSE's consideration of the level of expertise and experience, 1 = low 5 = high.	20%
2.	Describe your expertise and experience in the integration of all aspects of building M&E, Control systems, Elevators, Fire and Escape Architecture, Ventilation systems etc. Provide examples of when this has been applied. This response will be scored between 1 and 5 based on HSE's consideration of the level of expertise and experience, 1 = low 5 = high.	20%
3.	Describe your expertise and experience of in the full lifestyle of a building from new build, refurbishment, maintenance, (demolition if available). Provide examples of when this has been applied. This response will be scored between 1 and 5 based on HSE's consideration of the level of expertise and experience, 1 = low 5 = high.	15%
4.	Demonstrate, via person profiles, professional competence and experience of team members, including memberships of Institution of Structural Engineers or Institution of Civil Engineers. This response will be scored between 1 and 5 based on HSE's consideration of the level of competence and experience of the team members, 1 = low 5 = high.	25%
5.	Complete Schedule B (Part B) - Costs schedule, detailing your proposed charges and costs for providing the required support. The lowest priced bid will be awarded 20%. All other bids will be awarded a proportion of 20% depending on their comparative costs compared to the lowest priced bid.	20%

Please refer to separate document for our responses to the procurement-specific questions.

[4] See Action Note 8/16 Updated Standard Selection Questionnaire

HSE/T3463

RESPRESENTATIVE MAJOR ACCIDENT SCENARIOS FOR HIGH RISE RESIDENTIAL BUILDINGS

Part 2: Procurement Specific Questions

ARUP

Introduction

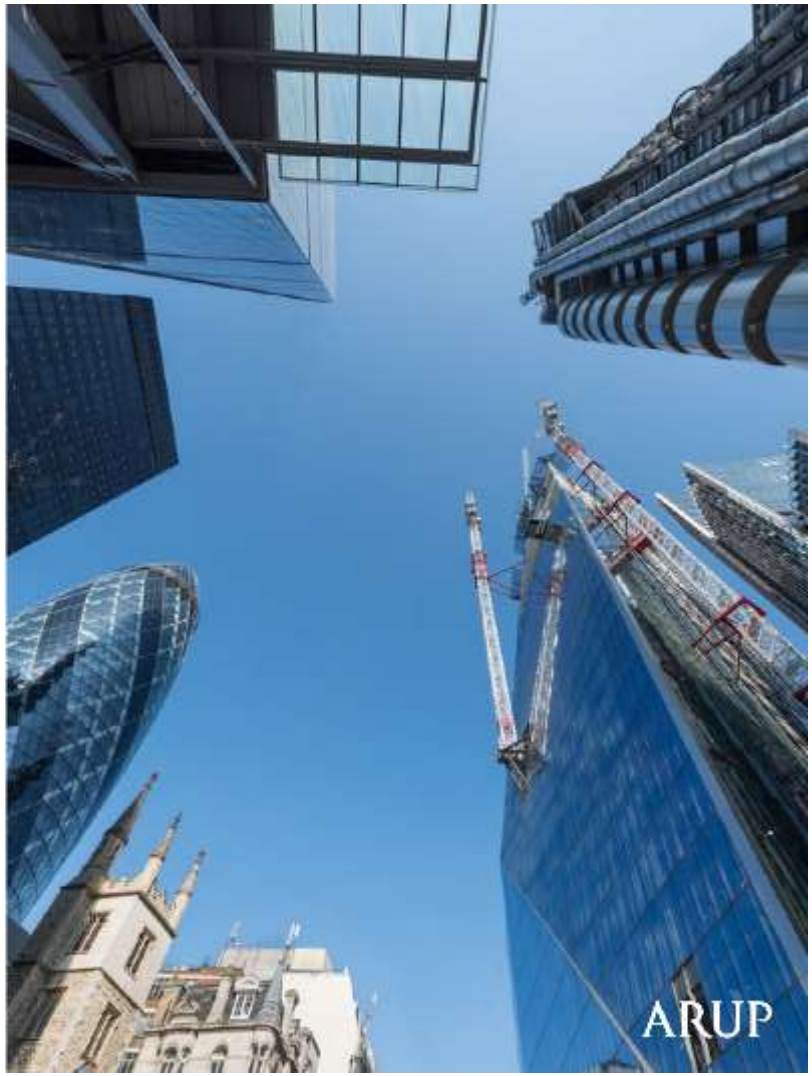
We are delighted to have the opportunity to tender for the specialist sub-consultant role to work alongside the Health and Safety Executive (HSE) supporting the development of the safety case approach to building safety.

The explosive urban population and limited land available in cities is continuously spurring the move towards building towers. With a growth in High Rise Residential Buildings (HRRBs), it's imperative that the risks are considered holistically and mitigation measures are in place - a person's home, is where they should feel the safest.

Dame Judith Hackitt's independent review of Building Regulations and Fire Safety, following the Grenfell Tower fire on 14 June 2017, made it clear that there needs to be a culture change in the industry. This needs to be underpinned by changing the way that HRRBs are designed, built, maintained and managed in the future.

Arup has been involved in shaping the built environment since 1946, from buildings through to major infrastructure; we've acted as a trusted advisor to clients globally. As a key player in the future of our built environment, we want to play a substantive part in ensuring building safety is at the forefront in future HRRB development and maintenance.

We appreciate that this is the start of a process to achieve a cultural change to create and maintain safe buildings. With the Government committed to bring forward legislation that delivers a step change, we very much welcome the opportunity to develop a strong and close working relationship that delivers HSE's objectives. We believe we are uniquely qualified to provide the expert support that HSE require to start this process.



Benefits of Arup to HSE

Background

Arup is an independent firm of designers, planners, engineers, architects, consultants and technical specialists, working across every aspect of today's built environment. Together we help our clients solve their most complex challenges turning exciting ideas into tangible reality as we strive to find a better way and shape a better world.

Today, Arup employs more than 14,000 people, in 33 countries in a culture underpinned by Sir Ove Arup's aims, namely quality of work, total design, a humane organisation, straight and honourable dealings, social usefulness and reasonable prosperity of our members. It is these aims that we bring to every aspect of the work that we do.

Arup has become a world leader in high rise building design and has a proven track record worldwide. In the last 30 years, Arup has been involved in the design of more than 650 high rise building projects in more than 45 countries.

Drawing upon our diverse skillset, Arup has helped define the skylines of our cities and the quality of urban living and working environments, uniting a global network of highly skilled building engineers and design specialists to deliver skyscrapers that work for both clients and occupiers.

Benefits of Arup to HSE

Why Arup for this commission?

As a firm we are motivated by our ambition of 'shaping a better world', our interest in supporting HSE align with our firm's philosophy and our preferred model of working (in a co-source arrangement) on high value activities where there is a mutual gain from achieving a shared objective. We truly believe in the importance of this project in shaping both the future of the built environment and the mental health of society every person living in a HRRB has a right and expectation to be safe and to feel safe in their home.

With members of the Institution of Structural Engineers, Institution of Civil Engineers, Institution of Fire Engineers and Society of Façade Engineering, our interests and experience align with the Hackitt Report, *"Building a Safer Future – Independent Review of Building Regulations and Fire Safety: Final Report"*. Arup has been a longstanding and vocal supporter of the Standing Committee on Structural Safety (SCOSS), with continuous representation on the membership of SCOSS for nearly 20 years and an active, significant contribution to the work of the committee.

As members of these bodies, it is in our interests to define high standards across the industry, and with world-leading design expertise we are intimately familiar with the shortfalls that occur and design risks that commonly arise. Change to the regulatory framework is well overdue and as a firm it is our intent to be involved in shaping this change.

As a fully independent firm owned in trust for the benefit of our employees, we have no shareholders or partners, and we are not motivated by profit. We strongly believe that work of quality and good design go hand in hand with our ambition to shape a better world.

Benefits of Arup to HSE

Why Arup for this commission?

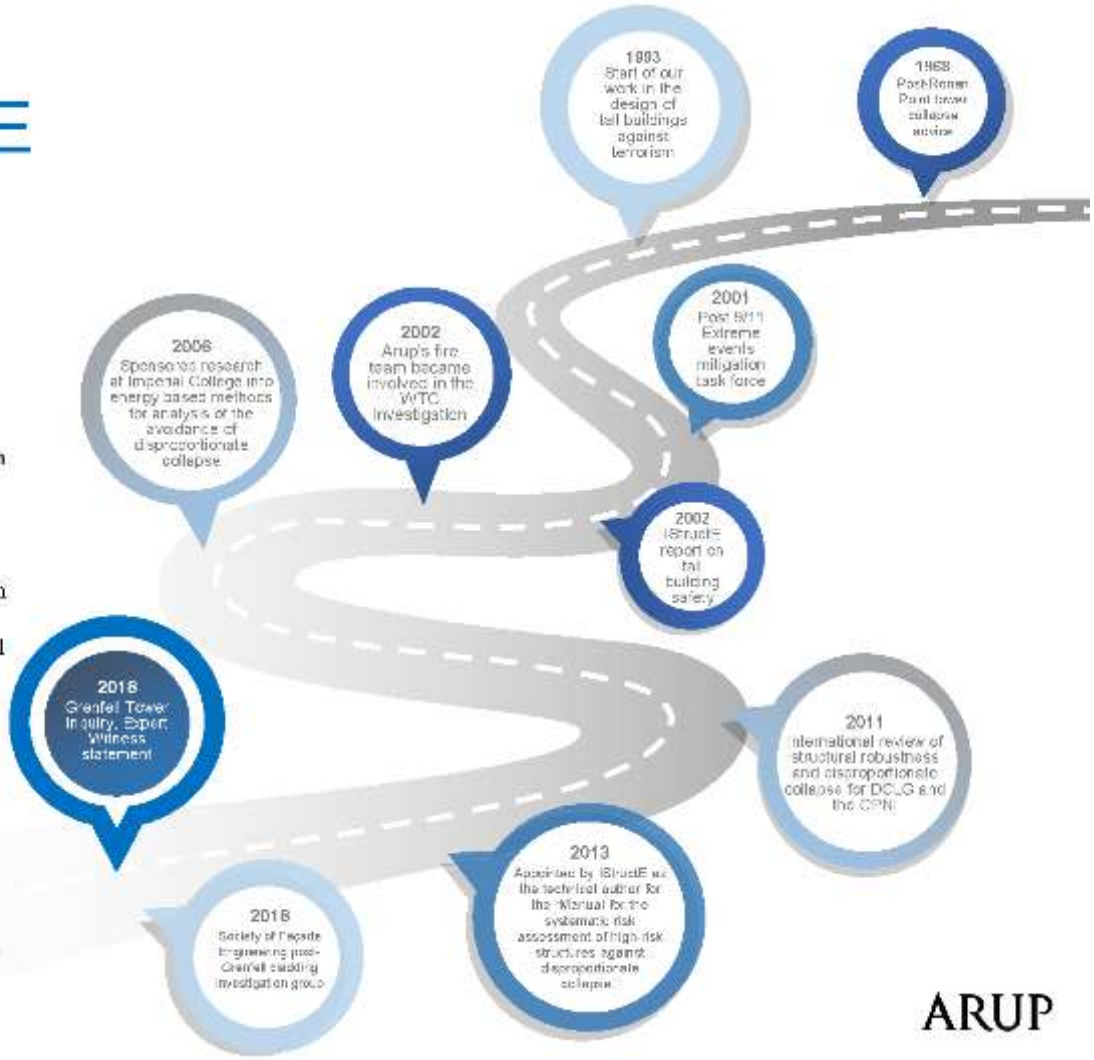
Our involvement in shaping good standards of design goes back at least 50 years, to the immediate aftermath of the Ronan Point collapse, when our then partner Peter Dunican was part of the IStructE Committee set up to examine design standards and the approach to robustness and design.

In the wake of increased terrorist activity, in 1993 Arup became involved in the design of tall buildings against terrorism: this was the start of the counter-terrorist design of tall buildings.

In response to 9/11, in 2001 we set up an Extreme Events Mitigation Task Force (EEMTF) and published a critical appraisal of building regulations in the design of tall buildings. The mission was to help us, our clients and our industry to understand the events of September 11th, 2001 in New York and Washington and their consequences for the building industry.

As the World Trade Centre (WTC) investigations began, our fire team became involved in the investigations and undertook independent analysis to understand the collapse mode of the towers and report findings to the inquiry.

With a need to delve deeper into how we can avoid disproportionate collapse, in 2006 we sponsored research at Imperial College London, to develop energy-based methods for analysis of the avoidance of disproportionate collapse. These are now in common use and are contained in the forthcoming ASCE Standard on design against disproportionate collapse.



ARUP

Benefits of Arup to HSE

Why Arup for this commission?

We were commissioned to undertake an international review of structural robustness and disproportionate collapse commission by the Department for Communities and Local Government (DCLG) and the Centre for the Protection of National Infrastructure (CPNI). We appraised the different building risk classification systems and regulatory frameworks in use for different purposes around the world, appraising the merits and disadvantages of each and making a series of distinct recommendations for improving the UK building regulations with regard to design against disproportionate collapse.

In 2013, flowing from the DCLG and CPNI report, Arup was appointed by IStructE as the technical author the *"Manual for the systematic risk assessment of high-risk structures against disproportionate collapse."* The risk-based approach presented, considers the full spectrum of natural, accidental and malicious hazards; while several case studies highlight lessons from failures, instances of poor design and examples of good design practice.

Arup has been involved in the Grenfell Tower Public Inquiry providing an Expert Witness statement as part of the first phase of the Inquiry with additional reports as part of Phase 2 of the Inquiry. Arup has been active in the debate about how we improve the entire regulatory regime around fire safety through our involvement with professional institutions in the UK and worldwide. We plan to expand that engagement.

Our history, along with our current initiatives show a commitment to safety in our industry. We appreciate the opportunity to tender for this project and look forward to continuing to shape standards of good design in our industry for the benefit of society as a whole.

1. Describe your expertise and experience of structural engineering and civil engineering in High Rise Buildings.

We are proficient in connecting a diverse range of disciplines within structural and civil engineering to optimise structural efficiency and achieve commercial and environmental sustainability. Whatever the scale or complexity of project, the firm's aim is always to design a structure which performs well and plays the roles appropriate to the building as a whole and the environment in which it is located. Special skills have been developed in the design of towers and masts, frames for high rise buildings, long span structures and lightweight structures.

At Arup we bring together structural and building services engineers skilled in leading multi-disciplinary teams with specialists in wind, geotechnical, materials, advanced analysis, timber, concrete, steel, composite and blast engineering, to provide our clients with safe, efficient and economic structural solutions to their briefs.

Through this approach Arup has become internationally recognised as a world leader in the design of tall buildings, delivering the multi-disciplinary engineering design of some of the UK's landmark buildings in London and beyond. In our design we deliver a structural design integrated with the services and vertical transportation, and adopt first-principles, risk-based approaches to ensure high levels of safety in design against fire, explosion, structural collapse and other major accident hazards, offering a better quality of life for communities, genuine value for property developers and a safe and sustainable future for society as a whole.

Our approach leads to holistic solutions for cost-effective, efficient and safe building designs whilst keeping the architect's design intent. We are at the cutting-edge of construction-led design. The use of Building Environment Modelling (BEM) is now commonplace and through 4D interfaces, enables virtual models of buildings to be constructed that facilitate evaluation of erection strategy, sequence and timings, reducing project risk and health & safety risk and at the same time leading to more efficient design.

David Cormie, our expert in blast engineering and structural robustness and our principal investigator for this project, is a world leader in his field and has advised both the UK and Singaporean government on disproportionate collapse of buildings. He authored Blast Effects on Buildings, a key textbook in the field, and has advised on the security design of several high profile buildings internationally. He authored a report reviewing international research on robustness and disproportionate collapse for Department of Communities and Local Government and the Centre for the Protection of National Infrastructure and was the technical author for the IStructE Manual for the systematic risk assessment of high-risk buildings against disproportionate collapse.

Development of Eurocodes

The Eurocodes refer to the set of standards that act as the national standards for the whole of Europe including the UK. It is based on the latest research and best practice with the aim of providing safer buildings through standardisation. As experts in their relative fields, members of the Arup team are currently assisting with the redraft of the next generation of Eurocodes in the following areas:

David Cormie	Nominated UK expert on robustness to TC250/WG6 Structural robustness
Tony Jones	Member of TC250/SC2 Eurocode 2 Design of concrete structures
Mike Banfi	Member of TC250/SC3 Eurocode 3 Design of steel structures
	Member of TC250/SC4 Eurocode 4 Design of composite structures
Andrew Lawrence	Member of TC250/SC5 Eurocode 5 Design of timber structures
Ishan Abeysekera	Member of TC250/SC5 WG3 Eurocode 5 Buckling and vibration of timber structures

Knowledge sharing between Arup offices around the world means the firm offers an international service at a local level, drawing on a skills base that includes experts from around the world.

ARUP

One Hyde Park, London

The apartments near Harrods in Knightsbridge are spread over four 'Pavilion' blocks, overlook Hyde Park and are serviced by the adjacent Mandarin Oriental Hotel. The buildings consist of 14 superstructure levels and 4 basement levels. Below ground the basement offers private gyms, swimming pools, cinema, squash, private parking and logistics/ servicing facilities. The main structural frame is constructed from reinforced concrete below ground level and a hybrid of precast concrete, steel and post tensioned concrete above ground. Arup services include Structural, Civil and Geotechnical Engineering, Building Physics, Wind and Security design.

Wood Wharf, Building E3/4

Arup was retained by Canary Wharf Management Ltd to develop the scheme design of this 52 storey residential tower design with KPF, for which planning consent has now been received.

Holland Green, London

This development included 57 luxury apartments. Arup provided Structural, mechanical and electrical, fire, acoustics, AV/IT, transportation and logistics services on this project. Arup's engineering and innovation skills enabled the architects' aspiration for cantilevering sections of the building.

Nicoll highway collapse

Arup's Mike Banfi acted as an expert for the investigation into this collapse triggered by failure of steel temporary work, which remains one of the seminal structural failures pointing to issues of competence in design, communication and clear lines of responsibility, design error and poor quality control on site.

ARUP

2. Describe your expertise and experience in the integration of all aspects of building M&E, control systems, elevators, fire and escape architecture, ventilation systems etc

M&E and Control Systems

At Arup we believe that inventive home building can bring about a better quality of life for communities, genuine value for property developers and sustainable approaches that benefit all. Our engineers would seek to maximise the potential of the development by paying particular attention to the following areas.

Apartment overheating through Internal Heat Networks

Market feedback on internal heat networks (e.g. heat networks within buildings serving individual residential apartments) in recent years has highlighted a common, significant failing, overheating of internal corridor spaces particularly in summer. Internal, poorly ventilated corridors can reach temperatures significantly in excess of the summer external ambient. Solutions we have used to mitigate the problem include:

- Reducing horizontal heat network distribution runs within the corridors (often difficult in practice)
- Enhanced ventilation within the corridors, using the smoke control system to reduce heat build up
- Provision of more ventilated risers (and less horizontal pipework runs)
- Use of pre-insulated pipework and robust attention to insulation detailing at values and equipment (reduces the heat emissions but doesn't eliminated it)
- Consider alternative technical solutions. Our preference on other recent projects has been to consider ambient temperature distribution network with water source heat pumps providing the space conditioning within the apartment
- Extension of the existing internal corridors to the façade

Location

The adjacent streets are a busy part of London with high traffic use and tube lines, and are an obvious source of noise and vibration. This issue is very common on London urban sites; current projects with similar constraints include our work at the Stratford and Television Centre. The vibration issues are usually addressed through the design of the structure and the residual airborne noise through the design of the façade & extended building services. There is a suite of mitigating actions all based on achieving minimum environmental health internal noise levels including:

- Sealed comfort cooled apartments suffer less from noise ingress, while these apartments which require natural ventilation, other measures may be required.
- Mechanical ventilation of spaces where fresh air supply cannot be provided through open windows due to excess noise levels in the space
- Treatment of the external façade so the required level of noise insulation is provided and maintained. This includes:
  - Reduced glazing and/or acoustic glazing systems
  - Use of balcony spaces and surface absorption to mitigate noise penetration into the space when the occupier does want to open the window
  - Appropriate acoustic mass & insulation in the façade treatment
  - Informed location of noise sensitive areas such as;
  - Circulation space, building cores and non-occupied spaces facing onto the noise sources
  - Bedrooms (in particular) and living spaces located away from the noise source
  - Apartments need to be assessed for requirements as mitigation measures can be costly. We need to understand how and where money is best spent to maximize the benefits to the project and increase saleability
  - Orientation of glazing (as it's the acoustic weak point in the façade) so that it's offset from the noise

Arup also continues to work alongside industry bodies to help solve the issue of residential overheating. Arup collaborated with CIBSE to develop TM59 a set of standardised overheating assessments for residential buildings which are likely to be adopted by the GLA and include assessment of potential climate change impacts. TM59 will improve standards in residential design in a cost-effective way, allowing buildings to be future proofed as much as possible for what is around the corner.

Fire engineering

Arup's advanced approach to fire engineering means that we rise to the challenges posed by all types of structures.

Whether providing code consultancy, strategic advice, fire prevention through specialised fire safety design, construction supervision, inspection and risk assessment, or post-fire recovery, our work is grounded in fire science.

We provide insight into risk and human behaviour, advanced techniques in simulation and analysis and international investment in research to stay at the forefront of fire engineering.

Our fire safety specialists regularly tackle, with extreme rigour and honesty, briefs that challenge standard fire safety design approaches.

ARUP

Holland Green, London

Arup provided the structural engineering, mechanical, electrical and public health engineering, fire engineering, fire protection, vertical transportation, façade engineering, acoustics and environmental consultancy services for three new residential apartment buildings on the site of the former Commonwealth Institute with a new landscape adjacent to Holland Park. Parts of the Commonwealth Institute, known as the Parabola building, are Grade II listed and the redevelopment required the support of its iconic 2500m² copper roof while an entirely new structure was inserted below.

Project Skylines, Isle of Dogs, Tower Hamlets, London

This new mixed-use development provides circa 900,000ft² of above ground space including 579 residential units, commercial office space, a new school for 475 pupils and creative retail frontages. Drawing on extensive experience with large mixed use developments, Arup developed a robust energy strategy providing a 30% reduction in CO_2 emissions over baseline values. Arup services include building services engineering, building physics, access consultancy, fire engineering, façade access consultancy, logistics and waste management.

Skyline Apartments, Leeds

Arup's Nick Troth was involved in undertaking a fire risk assessment to establish the risk presented by combustible ACP cladding feature panels on the building. This involved an on-site inspection and review of as built information and production of a report advising the client on how to reduce and mitigate the identified risks.

Grenfell Tower Inquiry, London

Arup Fire provided evidence and expert opinion to the inquiry following the Grenfell fire. For obvious reasons we are unable to discuss our evidence and expert opinion beyond the information in the public realm.

SA1 Residential, Swansea

Arup's Nick Troth provided fire safety technical expertise to the developer/owners legal team for 3 high rise residential blocks. Expert fire safety advice was provided on the extent of fire compartmentation and fire stopping defects and overall Building Regulation compliance. This involved on site assessments and evaluations of the as built construction and preparation of reports.

ARUP

3. Describe your expertise and experience of in the full lifestyle of a building from new build, refurbishment, maintenance, (demolition if available).

We are involved at all stages of building projects from early feasibility design through to completion of works. This spans new build, refurbishment and maintenance. As such our engineers have good knowledge of site logistics issues, construction methodology and can propose ways to mitigate environmental impact of works on the local population. As well as scheduling/programming works, we also look to actively manage construction risks and optimise opportunities. We present our work using latest graphical techniques including 4D construction animations (3D CAD geometry with fourth dimension of time) as well as in written reports and Gantt charts. These are updated as new ideas and actual progress evolves, often considering a number of options.

Our role goes beyond integrating engineering systems with architecture. We creatively solve a myriad of considerations that contribute to a building's overall success. Building design is at the heart of Arup. It is a privilege as well as a responsibility to work with clients who seek to positively influence our environment.

Arup has worked on more than 10,000 projects around the world to repair, reconstruct, refurbish, reconfigure, re-invigorate and restore value to buildings.

Today, we take a finely honed analytical approach, underpinned by keen appreciation of the real-world needs of building owners and occupants. Value has many dimensions. We consider financial, environmental and design performance alongside market risk and occupant wellbeing. Our analysis starts building owners and occupiers in the right direction by helping them choose the surest way to make their assets work harder.

When refurbishing an existing building we generally attempt to maximise our positive effect on the building by leveraging the current push towards to greener buildings to remove piped gas thereby making buildings more sustainable and eliminating/ reducing the risk of a gas explosion.

When undertaking refurbishment and new build projects in England we work within the Construction Design Management Regulations 2015 to first Eliminate all identified Hazards so far as is reasonably practicable, when it is not possible to eliminate hazards we take steps to reducing the risks arising from the remaining hazards. In the instances where residual risks still remain we inform the necessary stake holders of the risks. We generally achieve the above by carrying out a Class 3 risk assessment.

We are aware of the differences in regulations within the UK. The fact that the in England the designer is required to reduce risks as far as is reasonably practicable whilst in Scotland it is necessary to ensure that the refurbished building is compliant with current regulations is one we take into account in all our refurbishment projects.

We are also involved in the appraisal of existing buildings and the peer review designs of others. In this line of work our experts have in several instances found ways of improving the existing design or that the building being appraised was in need of retrofit.

ARUP

Large Panel System Concrete Buildings, UK

Arup is currently leading the structural assessment of four 1960s LPS residential estates in London (including the Ledbury Estate, 14 storeys, where gas was removed at short notice in August 2016). Following detailed assessment of disproportionate collapse risks and wind resistance (the 1968 white paper identified that most LPS had not been designed for adequate wind resistance), various options including strengthening, risk mitigation and demolition are being considered on the various estates.

Assurance review of multiple-occupancy buildings

Cadent Gas recently implemented an assurance programme to ensure that fire safety is adequately controlled during design and installation of gas systems to multiple occupancy buildings.
Arup's services were retained to conduct a review of the assurance questions to determining whether they adequately monitor the controls for identified risks, specifically around health and safety, fire safety and CDM Regulations.
Arup's contribution meant that Cadent was able to identify additional controls that needed to be monitored. Through the facilitation of a bow tie analysis workshop, we helped the client understand specific risks that could impact on the fire strategy of MOBs and how to monitor control of these by developing appropriate assurance questions, thus safeguarding the client and the occupants of such buildings for the future.

Confidential 1960s 29 storey landmark tower refurbishment, London, UK

Arup's Alice Blair carried out structural analysis on the existing core, pile cap and foundations, and specified and monitored staged intrusive structural investigations to support the refurbishment proposals for this building.

Confidential multi-storey residential timber frame, UK

Arup was responsible for survey and assessment of existing building for compliance with Building Regulations in terms of wind and disproportionate collapse. The building is planned to be demolished because the cost of strengthening is prohibitive.

ARUP

4. Demonstrate, via person profiles, professional competence and experience of team members, including memberships of Institution of Structural Engineers or Institution of Civil Engineers.

Skills and expertise

We have assembled a collaborative and cohesive professional project team experienced in the design of high rise building structures who are truly passionate about safety in this industry.

The project team will be led by David Cormie, who would be the principal expert and single point of contact for all communications with HSE. He will draw on a project team of specialists from our structural engineering, building services, blast and protective design, fire engineering, façade engineering, specialist technology & research and technical risk teams. Each of those proposed for our project team are among the leading international engineers in their respective fields to bring truly world-class expertise as demanded by this commission.

Conflicts of interest

Barbara Lane, who is the global leader of Arup's fire practice, is an expert witness to the Grenfell inquiry.

Our team regularly undertake expert witness work in a variety of areas. However we confirm that there are no expert witness or other commissions of which we are aware that would pose a conflict of interest in this work. Should such a conflict arise in the course of the commission we would advise you immediately and discuss an appropriate way forward.

> *"I am passionate about standards in structural safety and have spent my entire career striving for improved standards in design. I truly believe we have once-in-a-generation chance to make a positive difference. Society rightly expects that buildings will protect people: the UK led the world in structural robustness in the wake of Ronan Point and the tragedy of Grenfell has galvanised the industry to make changes for the better, giving us the opportunity to set world-leading standards in the design of high-rise buildings."*
>
> - David Cormie, Principal Expert

David Cormie

Principal expert and structural robustness expert

Ishan Abeysekara

Assistant researcher

Mark Rastrick

Expert in risk analysis of major accident scenarios

Nick Troth

Fire engineering expert

Darren Kent

Façade engineering expert

Mike Banfi

Steel design expert

Alice Blair

Refurbishment expert

Tony Jones

Reinforced concrete design expert

Andrew Lawrence

Timber design and large panel systems expert

David Gilpin

Building services expert

Dominic Munro

Tall building design expert

ARUP

David Cormie

Role: Principal expert & structural robustness expert Qualifications: MEng(Hons) Civil Engineering

Years of Experience: 19

Professional Associations: Chartered Engineer, Chartered Environmentalist, Fellow of the Institution of Structural Engineers, Fellow of the Institution of Civil Engineers, Principal of the Register of Security Engineers and Specialists (RSES), Member of the American Society of Civil Engineers

Why have we chosen David?

David leads Arup's blast and protective design team, responsible for the design of tall buildings, other structures and infrastructure against a range of malicious and accidental threats. He has been intimately involved in advising on standards of design in respect of tall building structures with a particular focus on structural robustness and design against disproportionate collapse for over a decade.

He started his career in the design and consequence analysis of structures in the nuclear, defence and offshore industries against explosion and seismic hazards in support of the operational safety case, and is well versed in first-principles analysis and ALARP principles of risk reduction underpinning safety case approaches. In 2009 he was engaged as the principal author for a state-of-the-art review of the UK building regulations in relation to structural robustness by DCLG and CPNI, and was the technical author of the IStructE Manual for the systematic risk assessment of high-risk buildings (including Class 3 buildings) against disproportionate collapse. More recently he has served as the nominated UK expert for robustness for evolution of the Eurocodes, and has provided expert advice on a number of commissions for local authorities to evaluate the risks to occupants of 1960s era large panel system structures in the wake of the Ronan Point disaster.

Selected Relevant Experience

HM Government – progressive & disproportionate collapse under terrorist action – international research review
DCLG and CPNI appointed Arup to undertake a comprehensive, detailed research review of international research in the field of structural robustness, and to advise on the adequacy of the UK Building Regulations for structural robustness and resistance against disproportionate collapse. The study reviewed the latest relevant international research to provide a thorough and detailed assessment of the state of knowledge in the subject and to identify the gaps in the research, drawing also on Arup's global knowledge and the input of a wide range of international external stakeholders. The study made twenty-eight recommendations on the Building Regulations and areas for further research.

Ministry of Home Affairs, Singapore – evaluation of design guidelines on progressive collapse
David acted as subject-matter expert and peer reviewer for this study on the development of Singaporean guidelines for design against progressive collapse arising from unconventional loads such as blast. The design impact of local and international design guidelines against progressive collapse of structures under blast and other unconventional loads were evaluated against example buildings selected for case study.

The London Clinic Cancer Centre, Marylebone, London, UK
Risk assessment of explosion of electrical transformers and escalating hazards such as fire, flooding, loss of electrical power and loss of building services, with particular focus on life safety building services, safety-critical healthcare services, and security of utilities supply.

Institution of Structural Engineers – design manual on structural robustness of high-risk buildings
David was the technical author for the IStructE manual on the systematic risk assessment for the robustness design of Class 3 and other high-risk buildings and their design against disproportionate collapse. The manual was commissioned by DCLG and was subjected to rigorous independent peer review by a panel of experts.

UK Expert to CEN TC 250 WG6 for EN 1991-1-7 on structural robustness
David is currently the UK Expert appointed to the CEN Eurocode Working Group on EN 1990 and EN 1991-1-7 for structural robustness. The Working Group is working to a mandate approved by the European Commission (EC) to develop a detailed standardisation work programme supporting the further evolution of the Eurocodes and leading to the publication of the second generation of the Eurocodes. The work programme will review and update the requirements and develop robustness rules for normal and accidental actions, including terrorist attack.

Hy4Heat, UK
Technical expert for the explosion consequence assessment for hydrogen and natural gas explosion risks in a domestic setting as part of a programme evaluating decarbonisation of the UK gas network by conversion to hydrogen fuel. The explosion consequence assessment, , involving dispersion, ignition, explosion, structural consequence and human injury modelling, formed an integral part of the quantitative risk assessment for the safety case in support of the initiative.

Unexploded Ordnance, Crossrail, London, UK
Technical peer reviewer for the preparation of a Quantitative Risk Assessment for Unexploded Ordnance (UXO) in support of the construction works for the Canary Wharf Crossrail station. The QRA was prepared to determine the likelihood of detonation of UXO due to construction works, and consequences due to ground shock, glazing injury and fragmentation ejects to structural integrity and life safety. This was the main tool to identify the risks introduced by/mitigated through the use of different probing techniques and to hence mitigate the risks so far as reasonably practicable, managing the client's risks and allowing the piling works and station construction to start on schedule.

Lloyds Register, London, UK
Assessment of the consequences of boiler explosions and escalating events such as fire, flooding and accidental gas release & deflagration to the building structure and fabric, and disruption to life safety systems.

Canadian High Commission, London
Project director for blast and ballistic engineering design for the upgrade and refurbishment of the Grade II* listed Canada House on Trafalgar Square in central London, which houses the High Commission of Canada in London. The project entailed a blast resilience review of the structure and fabric of the building, in response to which blast mitigation measures were developed for implementation in the building fabric and new blast-resistant entrance lobbies.

Large Panel System structures, Southwark, UK
Expert advice on the compliance of pre-Ronan Point era Large Panel System structures with the requirements for robustness defined in the Building Regulations, including strengthening requirements according to Circular 11/71 and associated Government guidance issued to local authorities following the Ronan Point collapse. The review was commissioned following the Grenfell disaster and David's involvement drew on his expertise in the area.

ARUP

Ishan Abeysekera

Role: Assistant researcher

Years of Experience: 5.5

Qualifications: BEng(Hons) Civil Engineering, MSc Earthquake Engineering, Diploma of Imperial College

Professional Associations: Chartered Engineer, Member of the Institution of Mechanical Engineers

Why have we chosen Ishan?

Ishan works in Arup's Specialist Technology and Research Group.

Ishan is one of Arup's experts in timber engineering and is a member of the working groups rewriting the sections timber vibration and buckling for the next version of Timber Eurocode. He has also authored several internal publications within Arup on how to design with timber especially in areas where timber products are not currently codified. Ishan has lectured at University College London and Imperial College London on timber engineering.

Ishan also has a strong background in the existing building appraisal and retrofit. He carried out the assessment of several pre Ronan Point Large Panel System (LPS) tower blocks.

Ishan is an engineer with a strong skillset in structural analysis. He works from first principles to find innovative solutions to engineering problems not covered by current codes of practice.

Selected Relevant Experience

Ledbury Estate, Southwark
As project manager on this job Ishan has been involved in the intrusive investigations and appraisal of four Large Panel System (LPS) concrete tower blocks built prior to the Ronan Point collapse. He is currently involved in designing a retrofit scheme to make these buildings robust.

Since no structural plans existed for this building, the only way to ascertain connection reinforcement details was by intrusive investigations into the structure. Ishan planned and executed a safe intrusive investigative procedure to obtain the necessary information about the structures.

Hartopp and Lannoy Points
As project manager on this job Ishan was involved in the intrusive investigation and appraisal of two 14 storey LPS system tower blocks to check whether they met current regulations for resistance against disproportionate collapse. The client has since made the decision to demolish the blocks.

Lethbridge Estate, Lewisham
Ishan was involved in the intrusive investigations and appraisal of several 6 storey LPS blocks in this estate to check whether they were met current regulations for resistance against disproportionate collapse.

Response to ground movement assessment - confidential project
Ishan carried out the assessment of the effects on a 4 storey masonry building of ground movements due to tunnelling beneath the building.

Modular timber housing tower - Confidential project
Ishan was involved in the concept design of a modular tower using cross laminated timber. Ishan carried out all the structural analysis checks from first principles as CLT has not yet been codified.

Haut, Amsterdam
Timber adviser for the tallest cross-laminated timber (CLT) building in the world at 19 storeys. The 73m high, 21-storey building will include 55 apartments and will be the tallest timber structure in the Netherlands. The wood used in the building of Haut will store more three million kilograms of CO_2, providing part of the answer to the City of Amsterdam's quest for CO_2 neutrality. Furthermore, 1,250m² of photovoltaic panels will help the building produce renewable energy, while waste water is purified through a wetland constructed on the roof.

Peer review – Confidential modular timber housing project
Ishan carried out the peer review of the design of factory made modular timber houses. Since much of the design was not codified especially the transport and lifting cases Ishan worked from first principles to ascertain whether the modules could be damaged during transport and lifting as well as a check of the building for ULS loading insitu.

Smile LDF 2016
This was a temporary pavilion designed for the London Design festival 2016. This is the most ambitious structure ever to be built out of cross-laminated timber (CLT). Since several of the technical challenges on the project had not been dealt with previously in CLT first principles analysis was used to propose a safe and cost effective design. The pavilion has two 12m long double cantilevers that can take the 60 people at either end. In addition to working on the engineering design of this pavilion Ishan was also the project manager.

Member of CEN/TC250 SC5 Working Group 3
Ishan is a member of the committee responsible for redrafting the sections of the Timber Eurocode on vibration of timber floors and buckling of timber elements and structures.

> *"As I am passionate about safe design I would enjoy working to help improve the safety of the built environment."*

ARUP

Mark Rastrick

Role: Risk analysis of major accident scenario expert

Qualifications: HND Chemistry, NEBOSH Diploma Parts I & II, NEBOSH Certificate in Environmental Management, ISO 45001 Lead Auditor, IAM Certificate in Asset Management

Years of Experience: 21

Professional Associations: Member of the Institution of Occupational Safety and Health

Why have we chosen Mark?

Mark is an experienced Health, Safety and Risk Management professional with a proven track record of both managing health and safety and of providing consultancy services in process safety, risk and asset management and the development of High Reliability Organisations.

Mark has worked closely on several occasions with the ex-Deputy Director of the HSE's Hazardous Installations Directorate, Ian Travers. Together, Ian and Mark adapted a methodology that HSE inspectors use to identify major hazard scenarios and the necessary controls they would expect to see in place prior to carrying out an inspection of a hazardous installation, by linking it with bow tie analysis to give a clearer picture of the major hazard scenarios, the potential failure modes that could lead to them and the controls and mitigations necessary to prevent them.

Mark has worked with our clients using this technique to consider various scenarios, including fire safety risks throughout the lifecycle of a building to ensure they had the right controls in place to prevent and mitigate against incidents and their consequences.

Selected Relevant Experience

Flogas, Process Flow Review and KPI Development, UK
Facilitated workshops to identify failure modes in systems and associated control barriers in order to assess the criticality and vulnerability of the barriers and the measures needed to monitor those that were highly critical and highly vulnerable. Developing leading Key Performance Indicators, this allowed the Client to focus their resources in the areas that were most critical to maintaining control of their systems.

Imtech, Fire Life Safety System Installation process review, UK
This involved a review of the Client's processes for design, installation and handover of fire life safety system projects to determine where improvements could be made. This was achieved through the facilitation of workshops involving their in-house subject matter experts and a multidisciplinary Arup team.

Cadent Gas, Governance Process Review
Undertook a review of Cadent's governance processes for installation of gas systems into multiple occupancy buildings. This involved reviewing their risk assessments and the control measures necessary to mitigate the risks to determine the checks that were needed to understand if controls were being implemented and remained effective.

Transpower, Corporate Risk Workshops, New Zealand
Worked closely with the Client's different departments to identify the potential failure modes within the key business deliverables for each department and the appropriate control barriers that need to be in place to effectively reduce the risks from the failure modes. Determining which controls are highly critical and also highly vulnerable to failure so that these can be measured and monitored to ensure consistent performance.

Transpower, Technical Risk Workshops, New Zealand
Facilitated bow tie analysis workshops to identify potential weaknesses in their entire distribution network and determine the control barriers required to ensure risks were managed. This allowed the client to undertake semi-quantitative risk assessment in order to develop asset management strategies based on criticality and effectiveness of the controls.

Dong Energy, Competency Assessment Standard Development Workshops, Denmark
Worked closely with the Client to develop a methodology for the creation of competency standards for safety specific tasks and specific roles within the organisation. The client had training policies and procedures in place but needed to be able to evaluate competency in order to ensure that training was adding value to their business.

Centrica Energy, HRO Development Workshops, UK
Assisted the client in developing key strategies and projects to work towards their goal of becoming a High Reliability Organisation including leadership and communications, technical risk management, management of change, asset management and competency. This was a new concept to the client and involved close liaison with them in working these strategies through to completion.

Atomic Weapons Establishment (AWE), Technical Risk Management Reviews, UK
Worked with engineering teams to understand weaknesses in high risk systems and associated multiple layers of protection in order to ensure leading key performance indicators could be developed to monitor and maintain control.

Contact Energy, Project Development Workshops, New Zealand
Mentored the Client's Project Managers and their project teams to develop terms of reference and project plans for specific projects within their overall safety improvement programme. This included leadership, communications, maintenance management, technical risk management and staff competence. This process involved using mind mapping software to clearly display the objectives, deliverables and milestones and ensure these were in the best order before exporting to Microsoft Project for the project managers to use going forward.

GSK WREF Health and Safety Management System Review
Undertook a review of the GSK Health and Safety Management System as it applied to the Worldwide Real Estates and Facilities (WREF) Team. The review was carried out in two phases. Phase 1 was a desktop review against the OHSAS 18001 series as recognised best practice. Phase 2 consisted of a series of audits of 3rd party service partners to assess how well they implemented the requirements of the management system. We were able to add value by prioritising the improvements required and supporting the implementation of these where necessary.

Equinix
Undertaking site health and safety inspections and audits of implementation of the Principal Contractor's (PC) Health and Safety Management System. Providing support in the review of risk assessments and method statements (RAMS). Development of Pre-construction information on behalf of the client to enable the PC to develop a construction phase plan.

> *"It is an exciting opportunity to support the HSE in aligning the approach used for hazardous installations to managing risks in other high hazard sectors such as construction and fire."*

ARUP

Nick Troth

Role: Fire engineering expert

Years of Experience: 31

Qualifications: BSc (Hons) Fire Safety in Buildings, Diploma in Fire Engineering, Diploma in Building Control & Building Surveying, Certificate in Public Studies.

Professional Associations: Chartered Engineer, Member of the Institution of Fire Engineers, Fellow of the Chartered Association of Building Engineers

Why have we chosen Nick?

Nick is Arup's technical director for the UK fire engineering team. He sits on the Institution of Fire Engineers' Chartered Engineer Registration Committee. He has authored a number of publications including the recent 'fire safety legislation chapter of CIBSE Guide E on Fire Engineering, the British Automatic Sprinkler Association guides; 'sprinklers for safer living' and 'the benefits and use of sprinklers in buildings'. He was technical advisor to the Welsh Government responsible for redrafting Approved Document B incorporating residential sprinklers in all new homes.

He has extensive experience in designing robust fire safety strategies for high rise residential buildings. He focusses heavily on cross discipline working with emphasis on technical reviews to ensure that MEP and Fire are aligned. I have also undertaken a number of 3rd party reviews of fire safety strategies developed by others to assist in determination of compliance.

During construction stages he has undertaken audits to advise clients if the fire strategy is being implemented correctly by contractors. He also led fire safety system cause and effect testing at the completion stages as part of the handover process.

He has significant experience in inspection of existing buildings to assess them for technical compliance. This includes high rise residential buildings. He has advised clients on immediate actions and remedial work required to enable continued occupation and their legal duties under current legislation.

Selected Relevant Experience

Confidential Project – Northern England
Nick is responsible for overseeing the technical reviews and on-site remediation works on two large healthcare buildings. This involves assessing the as built design information for fire safety compliance with the Project Contract and Statutory requirements. Nick is responsible for a team of 8 on site inspectors.

New Lawrence House, Hulme, Manchester
Nick provided fire safety technical expertise to the major tenant /owner's legal team in respect of fire safety defects in this multi storey residential development. Expert fire safety advice was provided on the extent of fire compartmentation and Building Regulation compliance following on site assessments and evaluations of the as built construction. This culminated with Nick attending court as a material witness on the legal claim in 2018.

Skyline Apartments, Leeds
Nick was involved in undertaking a fire risk assessment to establish the risk presented by combustible ACP cladding feature panels on the building. This involved an on-site inspection and review of as built information and production of a report advising the client on how to reduce and mitigate the identified risks.

University of Hull, Hull, East Yorkshire
Nick was involved in assessing 6 student residential buildings at the University campus. The focus of the services were the assessment of the as built facades, for compliance with Building Regulations and advice on the evacuation strategy for the residential blocks.

Skanska UK Nick provided a fire safety technical advisor role to Skanska UK, which involved undertaking 3rd Party fire safety reviews of modular residential buildings. This also involved advising Skanska on overall fire safety compliance of both the design and as constructed aspects of the modules/completed buildings.

Expert Advisor to Confidential Client, Construction defect claim
Nick provided inspection services overseeing a team of 12 on site inspectors assessing the extent of fire safety defects associated with 12 residential blocks and a commercial building on a single site. This involved the production of detailed defect reports of each building for litigation purposes.

SA1 Swansea Residential, Swansea, Wales
Nick provided fire safety technical expertise to the developer/owners legal team for 3 high rise residential blocks. Expert fire safety advice was provided on the extent of fire compartmentation, fire stopping defects and overall Building Regulation compliance. This involved on site assessments and evaluations of the as built construction and preparation of reports.

> *"As a competent fire engineer I have been continually advocating the need for ensuring that residential buildings have a robust fire safety strategy and that the fire safety requirements of these are correctly implemented and ultimately, maintained and managed within the built environment. This project presents an opportunity for me to formally enable all I have been advocating for a number of years in creating safer buildings."*

ARUP

Darren Kent

Role: Façade engineering expert

Years of Experience: 22

Qualifications: BEng (Hons) Civil Engineering, PGDip Façade Engineering

Professional Associations: Member of the Society of Façade Engineers. Affiliate Member of the CIPSE

Why have we chosen Darren?

Darren is an Associate Director in Arup's façade engineering team, responsible for the façade design on a range of different building typologies, including tall residential buildings.

Darren has 23 years of experience in the industry and has worked for both façade contractors and façade consultants. He is the Arup Project Director for major projects in London and Manchester where several residential towers are being re-clad in response to fire performance and regulatory non-compliances.

Darren has an active role within the Fire group of the Society of Façade Engineering and is a member of the BSI technical committee that have recently reviewed the BS8414-1 and BS8414-2 standards.

Selected Relevant Experience

City of London Headquarters, (Confidential Project)
Façade Project Manager for Arup leading the technical design. A one million sqft headquarters in the City of London for a major international corporation. A new build with wide format unitised curtain walling systems. Notable requirements include blast resilience, intruder resistance and flood resistant facades. The blast engineering programme required a methodical co-operation between three Arup groups; façade engineering, risk/security/resilience and advanced technology & research.
Architect: KPF

Holland Green housing development, London, UK Façade Project Manager for Arup during the construction phase, leading the technical aspects related to the Contractor supervision role. New stone facades and punched windows. Located on Kensington High Street, it consists of three new residential buildings with a common basement area and surrounding garden landscaping.
Architect: OMA/Allies & Morrison

Design Museum, London, UK
Façade Project Manager for Arup during the construction phase, leading the technical aspects related to the Contractor supervision role. Refurbishment of the former Commonwealth Institute. Located on Kensington High Street. Elements of the former Commonwealth Institute are Grade II* listed and the building will be leased to the Design Museum.
Architect: John Pawson/Allies & Morrison

Audley Square House, London, UK
Façade Project Manager for Arup during the concept design stage. A "super prime" residential development in Mayfair. A new build with traditional façades of Portland stone and timber windows. Project Manager for the facade during the outline proposal and planning stages.
Architect: Robert Stern

Wellcome Trust Kitchen Garden Enclosure, Cambridge, UK
Façade Project Manager for Arup during the design development stage for a new glazed roof which encloses an existing walled courtyard. The roof includes a mix of opaque, translucent and transparent glazing in response to the environmental performance requirements. The glazing panels are warped out of plane in response to the irregular geometrical boundary requirements of the existing structures. Architect: Abell Nepp

Ciftci Towers, Istanbul, Turkey
Façade Project Manager for Arup during the façade tender documentation and technical design stage for two 180m tall residential towers and helipad. The unitised facades include a granite rainscreen and large format glazing, the penthouse includes a swimming pool with an operable roof light above.
Architect: John McAslan

1 Oxford Street, London, UK
Façade Project Manager for Arup during the design development stage, a mixed use retail, office and residential scheme. The façades are a key feature of the building, the geometry of the external envelope includes sinuous waves on plan and incorporates curved and feature fritted glass with a radius of only 600mm. Architect: AHMM

Grain Silo, Cape Town, South Africa
Façade Project Manager for Arup through the Scheme Design stage. Development of custom façade system proposals for a highly unique scheme which comprises a full refurbishment of a derelict grain silo located at the centre of a substantial waterfront re-development. The grain silo has historical importance in the region; the refurbishment of the external envelope of the silo is extensive with a mix of retained existing facades and new-build technology.
Architect: Heatherwick Studio

UCL, London, UK
Façade Project Manager for Arup during the design phase and throughout construction. Representing the interests of the D&B contractor with respect to the detailing and performance of the translucent facades which are formed from glass U channel profiles.
Client: Kier Construction

"I believe that buildings need to be understood as a complex systems by all those who contribute to their design, construction and maintenance. So it follows that multidisciplinary collaboration and cross-industry cooperation are critical ingredients for success."

ARUP

Mike Banfi

Role: Steel design expert

Years of Experience: 40

Qualifications: MA (Cantab) Engineering, Rosecc Prize, University of Cambridge

Professional Associations: Chartered Engineer, Fellow of the Institution of Structural Engineers, Fellow of the Institution of Civil Engineers

Why have we chosen Mike?

Mike Banfi is an Associate Director in Arup's Specialist Technology & Research group. Mike advises on analysis and design of structures designed by Arup and by others. His particular interest is steel and steel composite structures but he has experience in concrete and timber. He contributes to codes of practice at a UK and European level. He was appointed chairman of BS2S4 in 2008 and was chairman of the IStructE Research panel from 2006 to 2012.

He has an interest in software development and is involved in the development of software for steel and composite design.

He is active in training and has organised courses on steelwork and composite design including Eurocodes. He has also been involved with courses on Stability and Vibration.

Prior to joining Specialist Technology & Research, Mike was a project engineer in one of the Arup building groups.

Selected Relevant Experience Specialist Technology & Research

Mike has provided expert advice during the design of numerous Arup projects. His input ranges from answering adhoc technical questions to longer term studies and reviews. Examples of projects are:

- Stratford FC stadium
- 1915 Canakkale Bridge – design verification
- Camp Adventure observation tower
- Brunel Building, North Wharf Road
- Basalt Stadium
- V&A Dundee
- 52 Lime Street (The Scalpel)
- Sydney Airport terminal refurbishment
- New Perth Stadium
- Abu Dhabi International Airport.
- The Forth Replacement Crossing.
- The Pinnacle,
- The Leadenhall building,
- The London Aquatics Centre
- Renovation of various steel bridges in the Netherlands.
- Terminal 5 Heathrow
- Qcade

Car Park Refurbishment
Project Director for the assessment and refurbishment of a precast concrete car-park.

Development of the 2nd generation of EN Eurocodes
Project team leader for drafting amendments to the three parts of Eurocode 4 based on industry requirements and project team member for the drafting of a revised version of Eurocode 4 part 1-1

Generic Design Assessment
Assistance to the Office of Nuclear Regulation as part of the Generic Design Assessment of Nuclear power plants.

Expert witness role
Acted as an expert in the following:

- Position of cantilever roof trusses
- Connections to external steel bracing
- Refurbishment of retail space below residential accommodation
- Cladding fixings

Manual for the design of steelwork buildings to Eurocode 3
Drafting of manual on EC3 for the IStructE

Roof to archaeological remains
Responsible for a review of a steel roof structure following collapse of part of the roof. This included an evaluation of the initial design and identification of possible causes.

Nicoll Highway Investigation
Expert witness for Investigation of the collapse at Nicoll Highway, Singapore triggered by the failure of steel temporary works.

Eurocode 4
As UK National Technical Contact and delegate to SC4 responsible for reviewing and commenting on drafts of the Eurocode for composite construction.

Existing Tunnels Kings Cross
Responsible for advanced non-linear analysis of brickwork tunnels and soil, to demonstrate their stability during the redevelopment of the underground station.

Hong Kong Steel Code
Part of the drafting team for the new Hong Kong steel code.

Buildings London

Merrill Lynch New London Headquarters
Project Engineer for the seismic design of superstructure steelwork.

Robert Gordon University
Project Engineer for the new concrete framed building for the Faculty of management.

Rad-und Schwimmsportshalle
Project Engineer for the design of steel roofs for the velodrome and swimming pool.

Renault Technocentre
Project Engineer for the design of a roof structure of timber hat arches to courtyards of a research centre.

Centre Culturel Jean Marie Tjibaou
Project Engineer for the tender design for timber structures of exhibition halls in a cultural centre in New Caledonia.

Steel roofs in France
Project Engineer for the steel roof to a factory for L'Oreal near Paris and assistance to the design teams for the roofs to the TGV stations at Lille and Roissy.

Peterborough Court
Project Engineer for the design of the steel superstructure to 12 storey office building.

Moorgate Hall
Project Engineer for the design of a 6 storey office building.

Waldstadion Frankfurt
Project engineer for the design of a 70m span trussed barrel vault to a sports hall.

> *"Those involved in building design should have an obligation in designing safely. I hope to use my skills and experience in steel design to help inform HSE's objective in creating and maintaining safer buildings, now and into the future."*

ARUP

Alice Blair

Role: Refurbishment expert

Years of Experience: 17

Qualifications: MA (Cantab), Meng (Hons) Engineering

Professional Associations: Chartered Engineer, Member of the Institution of Structural Engineers, Member of the Institution of Civil Engineers

Why have we chosen Alice?

Alice has developed extensive structural engineering experience during her 17 years at Arup. Working with Architects, Building Services engineers and specialists she has delivered designs for a wide range of building typologies, and takes pride in the collaborative relationships with contractors that have enabled successful construction of some of London's most high profile projects.

Alice is most passionate about working with existing buildings. This demands an understanding and exploration of how buildings have been built, their history during their life to date and what opportunities and risks are present when considering how they can be refurbished, modified or demolished in the future. She is also motivated to work on projects that positively contribute to social value, where structural engineering, projects and buildings can directly influence daily life and wellbeing for our communities.

Putting this into practice, recently Alice has taken on a role carrying out rapid safety assessments and designing remedial works for a suite of buildings in the EU which are less than 10 years old. She is acutely conscious of the realities of design and construction, and the urgent need to ensure that our built environment meets or exceeds societal expectations and safety standards.

Selected Relevant Experience

Claridge's Basement, London
Claridge's, a world-famous five star hotel in central London, has commissioned contractor McGee to construct a five storey basement beneath the hotel without disrupting hotel operations. Working with McGee, the solution has involved mining underneath the existing foundation, hand-digging adits and 62 vertical shafts each containing a new five-storey column and foundation, then constructing the basement top down. Alice led the structural design and delivery of the structural and reinforcement design, whilst monitoring site activities including jacking the existing building and confined space working.

Ledbury Estate, London
Structural intrusive investigations and assessments and strengthening design for four 14 storey high residential Large Panel System buildings constructed in the late 1960s concurrent with the Ronan Point collapse (which was constructed with the same structural systems).

Victoria & Albert Museum, London
The V&A's most significant architectural intervention at their South Kensington campus is currently under construction: a new courtyard and entrance, column-free underground gallery and back of house areas for the V&A Museum designed in collaboration with Amanda Levete Architects (AL_A). The project consists of a new 15m deep basement with complex geotechnical challenges and museum interfaces requiring in depth 3d coordination and use of BIM techniques together with practical problem solving of site constraints. Alice is lead structural engineer for the basement design, existing building alterations and assessment of the effects of ground movements on existing buildings, resident engineer during structural construction and demolition works, and has managed the wider Arup team during the tender and construction phases. The sustainability rating for the building is BREEAM Excellent.

Confidential 1960s 29 storey landmark tower refurbishment, London
Alice carried out structural analysis on the existing core, pile cap and foundations, and specified and monitored staged intrusive structural investigations to support the refurbishment proposals for this building.

Alice also designed and delivered the construction of a small project for LandSec to carve out part of the Cardinal Place basement to enable an entrance into the recently opened new ticket hall at Victoria Station.

Cardinal Nib, London
Site supervision and structural design of a space for a new entrance stair into Victoria Station, carved out from the existing basement of Cardinal Place, part of Land Securities estate. The project required specialist hydrodemolition in very close proximity to the District and Circle Line tunnels.

Crossrail, London
Structural engineer within the C122 Bored Tunnels design team, undertaking building damage assessment and mitigation design for the complex interlinked collection of buildings (including the Listed Smithfield Market) and London Underground assets affected by ground and subsurface settlement caused by tunnelling and Farringdon station construction works. The team utilised award-winning GIS tools to manage the vast quantity of information associated with damage assessment of over four thousand properties that required assessment for possible effects of ground movements during excavation works.

News London, Wapping, London
Major refurbishment of existing print works and 19th century grade II listed brick vaulted warehouse into a state of the art media campus. Structural lead engineer for refurbishment design for a new gym within the listed warehouse.

London Aquatics Centre, London
Arup Security Consulting resilience analysis of the London Aquatic Centre roof and temporary stands, with development of appropriate mitigating measures through structural hardening, design modification or enhancement for consideration against other mitigation or risk management options.

Globe Academy, London
Lead structural engineer for the refurbishment of two existing Grade II listed buildings and design of two new buildings to create a school for over 1000 pupils aged 3 to 18. The refurbished listed 1950s pentagonal assembly hall has a very thin hyperbolic paraboloid sprayed concrete roof. The project had significant phasing challenges as throughout construction the school remained in use. The project achieved BREEAM Very good.

King Solomon Academy, London
Refurbishment and new building design within the education sector, with Ian Ritchie Architects. Structural engineer for refurbishment design of 1950s grade II listed assembly hall, including construction of new internal stability walls on principles following demolition of adjacent structures.

Chiswick Park, London
Construction of a five storey office building and foundations for a second office building, with Rogers Stirk Harbour & Partners. Resident engineer based on site, overseeing piling, groundworks, concrete post-tensioned flat slab construction and external steelwork erection.

Kings Cross Underground Station Redevelopment, London)
Structural surveys of Grade II listed Kings Cross Mainline station, operational and disused tunnels, and part of Kings Cross Underground station. Assisted on surveys, including liaison with Network Rail, London Underground and other parties, co-ordinating and participating in survey teams, and preparation of survey reports.

> *"I would relish the opportunity to support the HSE in developing this vital piece of guidance to help building owners manage their safety risks in a rigorous and considered manner."*

ARUP

Tony Jones, MPA The Concrete Centre

Role: Reinforced concrete design expert

Years of Experience: 20

Qualifications: BEng(Hons) Civil Engineering

Professional Associations: Chartered Engineer, Fellow of the Institution of Civil Engineers, Fellow of the Institution of Structural Engineers

Why have we chosen Tony?

Tony is a Structural Engineer with MPA The Concrete Centre, with over 25 years of experience in design, research and investigation of Concrete Structures. He is currently convenor of the Task Group developing the robustness rules for the next revision of the Structural Concrete Eurocode, and also sits on the cross-material robustness Working Group for the Eurocodes. He is the UK Head of Delegation for the concrete Eurocode.

In his previous role with Arup he provided advice to project teams on the design of concrete structures including structural and fire aspects of tall and very tall buildings. He was also involved in the assessment of structurally and fire damaged concrete buildings and provided advice to the emergency services in the immediate aftermath of the Grenfell Fire. In addition to this specialist advisory work, Tony has led projects that included the design of a substantial residential development including a number of towers, and the multidisciplinary design of a sub-surface railway station where five impacted every discipline and co-ordination was key.

He is a past member of the Standing Committee on Structural Safety and currently sits on the Confidential Reporting of Structural Safety panel that assesses reports of structural safety concerns. Tony has contributed to various publications on Structural Safety including behaviour during extreme events.

Selected Relevant Experience

MPA The Concrete Centre
Tony is responsible for all matters related to fire in concrete buildings. A large part of this is understanding the impact of the Grenfell Tower fire and the associated investigation on construction industry and encouraging change where necessary. To this end he has contributed to various government consultations and call's for evidence. He also sit on the BSI committee "Fire Safety & Built Environment Task Group" which was set up to manage BSI's response to the Grenfell Tower fire.

He is involved in developments in structural concrete design sitting on various concrete code committees, including being the UK head of delegation to the European Committee responsible for the European code of practice for structural concrete design. I am also the convenor of the task group formulating the robustness rules for the next revision of the Concrete Eurocode and sit on the cross material Working Group that is co-ordinating robustness requirements between materials.

Liverpool Street Crossrail Station
Tony led Arup's site-based design team during the main fit out stage. Arup are lead designer for the contractor and was responsible for design across all disciplines, this included leading the Architectural team as well as Arup's multi-disciplinary engineering team. With the project on site coordination between disciplines and the contractor was key, as was working with the CRL assurance process.

Earls Court Residential Development
He was the Project Director for the design team on this circa £1 billion residential project. Arup provided structural, civil, geotechnical, contamination, acoustic, access and landscape engineering services. The site has major interfaces with existing infrastructure requiring innovative design solutions including the use of isolation bearings and significant transfer structures over rail. The project included a number of tall residential towers.

The project also included demolition of the existing Exhibition Centre over six live underground tunnels. He investigated various methods of demolition, the chosen and successful method used the then largest land-based crane in the world.

General Project Advice, Arup Global
In his expert role Tony provided expert advice during the design of numerous Arup projects across the globe, including high profile jobs such as the CCTV in Beijing, Swiss-Re in the City, the Singapore Sports Hub and City of Manchester Stadium. My input into Arup's projects ranged from high level advice, through delivering major sections of design, to longer term research led studies.

Generic Design Assessment of European Pressurised Reactor, UK
He worked for the UK Health and Safety Executive providing support in the generic design assessment of the European Pressurised Reactor. He was responsible for reviewing the structural concrete design and documentation, put forward for compliance, with the requirements of the Office of the Nuclear Regulator. My role included accompanying the ONR Officer to numerous meetings to advise on the validity of the arguments put forward. During this project he became familiar with the ONR approach to developing Safety Cases.

Structural Assessments
Tony investigated the causes and consequences of various perceived defects in a number of different structures including a concrete clinical building, several residential buildings, a power station sea water tank, a seawater intake tunnel, and several car parks. He also led a project investigating the implications of non-conforming cement on 15 different projects. Roles have included producing expert technical reports and in one case appearance in an adjudication.

> *"I have had an interest in structural robustness and how to minimise the risks posed by unforeseen events for most of my career. This interest spans from avoiding unexpected problems due to inaccuracies in analysis or small deviations in constructed structures to consideration of extreme events. In both cases the aim is to ensure that damage and associated risks are minimised to an acceptable level. In other words the consequence is proportionate to the event. By exploring the various accident scenarios I hope to be able to start to form a consensus on what is proportionate for representative events."*

ARUP

Andrew Lawrence

Role: Timber design & large panel systems expert

Qualifications: MA (Cantab) Engineering, PgCert in Design Manufacture and Management, Conservation Accredited Engineer (CARE)

Years of Experience: 26

Professional Associations: Chartered Engineer. Member of the Institution of Civil Engineers, Member of the Institution of Structural Engineers

Why have we chosen Andrew?

Andrew Lawrence is the leading Timber specialist at Arup, a member of the European Timber Design Code Committee and a judge for the UK Wood Awards. He is currently chairing the working group for new European standard on Execution of Timber Structures. His team is also involved in writing many parts of the new timber Eurocode including floor vibration, buckling, fire and timber concrete composites.

He lectures worldwide on the structural timber, working with the timber industry across the world towards making timber a mainstream construction material, while meeting safe durable structures. He is joint author updating 'Appraisal & Repair of Timber Structures' published by Thomas Telford, the definitive work on the assessment of existing timber buildings. His projects include the highly acclaimed Metz Pompidou, Canary Wharf Crossrail Station roof and The Smile, the world's first hardwood CLT structure.

In addition to timber, he is a Conservation Accredited Engineer and a specialist in inspection, assessment and repair of existing and historic structures. He works from first principles to deal with the complexities of existing buildings which are not covered in codes of practice. He has lead the assessment and retrofit work Arup has carried out on 4 precast concrete large panel system blocks built in the 1960s.

Selected Relevant Experience

Timber construction

Haut, Amsterdam
Timber adviser for tallest CLT building in the world at 19 storeys.

Clubhouse building, UK
Acted as technical expert in adjudication regarding defective timber roof, walls and foundations.

Visitor Centre, UK
Technical expert in litigation regarding decay of plywood floor cassettes due to condensation.

BBC
Inspection & repair of timber auditorium ceiling, following collapse.

Multi-storey lightweight timber frame (student halls)
Investigation and assessment of structural defects.

Canary Wharf Crossrail Station timber roof
Concept design & client adviser for longest timber roof in the UK. Partial exposure to the weather provided an added challenge.

Macallan Distillery
Timber adviser for unique glulam shell roof with Richard Rogers.

Metz Pompidou, France
Timber adviser for unique iconic woven roof with Shigeru Ban.

King's Cross Station, London
Survey and repair of Baltic pine roof trusses damaged by rot.

Believe in Better Building, Sky
Timber adviser for fast track multi-storey educational building with glulam frame and CLT slabs.

London Olympic Velodrome
Advice on design of internal and external timber cladding.

Coral Reef Swimming Pool, Bracknell, UK
Appraisal and emergency repair of 1980s softwood roof trusses.

Nene Valley Sports Centre, Kettering, UK
Expert advice and remedial proposals for timber pool roof, following excessive deflections.

Metropol Parasol Seville, Spain
Advice on structural design of 30m high parasol structures carved from a grillage of timber, believed to be largest timber structure in the world.

Existing buildings appraisal, repair and retrofit/ LPS blocks

Dhaka, Bangladesh
Andrew assessed immediate safety of 20 RC factory buildings following the collapse of a garment factory.

Ledbury Estate, Southwark
Leading team undertaking structural survey, assessment and strengthening design of 1960s precast concrete tower blocks for robustness.

Hartopp & Lannoy Points, Hammersmith and Fulham
Leading team undertaking structural survey and assessment of 1960s precast concrete tower blocks.

Lethbridge Estate, Hammersmith and Fulham
Leading team undertaking structural survey and assessment of 1960s precast concrete tower blocks.

Plantation Place, City of London
Responsible for inspection, damage prediction & monitoring of DLR and Circle Line tunnels due to deep basement excavation.

> *"I would like to work on this project as I am committed to public safety. I have addressed several residents' meetings post Grenfell regarding the structural safety of LPS blocks and I am aware of the impact of both real and perceived safety risks can have on residents."*

ARUP

David Gilpin

Role: Building services expert

Years of Experience: 23

Qualifications: MA (Cantab) Engineering, MEng (Hons) Mechanical Engineering, Mastering Technology Enterprise IMD, AMIP

Professional Associations: Chartered Engineer, Member of the Institution of Mechanical Engineers

Why have we chosen David?

David is a project director and design leader who leads a multidisciplinary team of building engineers based in London. David also leads the residential business sector for Arup's Building Engineering team in London.

David is particularly interested in multi-disciplinary design, and in developing an integrated approach to problem solving on complex projects. He enjoys forming close working relationships with clients and co-designers, and utilising Arup's extensive network to deliver world-class, award-winning projects that maximise value for clients.

Selected Relevant Experience

Canada Water, London, UK
David has led the development of an innovative masterplan energy strategy for this 21-hectare mixed-use masterplan including residential of various tenures, office, retail and leisure.

Project Skylines, London, UK
David was project director for Arup's multidisciplinary team on this mixed use scheme. The project provides circa 900,000ft² of above ground space including 579 residential units in three residential towers, commercial office space, a new school for 475 pupils and creative retail frontages.

90 Long Acre, London, UK
Arup was initially appointed to conduct a feasibility study for redeveloping a 1970's original Arup designed office building in Covent Garden in the Borough of Westminster. Arup presented redevelopment options to the client for the building, before also being appointed to carry out the design work. This sensitive 250,000ft² site in the heart of the West End is being redeveloped to create a lively mixed-use hub. The new development comprises of two connected buildings containing affordable & private residential, commercial space and retail frontages at ground plus high quality rehearsal facilities for the Royal Opera House. David is leading the design to provide private and affordable 12-storey residential, 8-storey office and retail uses on a constrained site.

East Village, Stratford, UK
David leads Arup's work at East Village in Stratford, a major residential development. The first completed phase is Plot N08, providing 480 private rental (PRS) apartments in two towers. Arup helped the contractor to develop innovative prefabricated construction techniques.

Lodge Road / 60 St John's Wood Road, London
David is MEP director for the redevelopment of an Over 55s residence for C&C, a charity. This will be constructed to meet C&C's specified requirements and will contain a total of circa 250 units of accommodation. The Northern end of the Site, fronting St John's Wood Road, will be developed for high end private residential sale. The project will deliver 164 units plus facilities for residents, plus a luxury residential building.

Central St Giles, London, UK
David led Arup's multidisciplinary design team for this award-winning mixed-use redevelopment in the West End for Legal & General. Mixed use redevelopment to create 36,000m² of offices over eleven floors and a total of 100 private and affordable apartments in two 14-storey towers, all set around a new public square with cafes, restaurants and some small retail units at ground level. A basement containing plant, parking, cycle storage and back of house functions covers the entire site.

Holland Green (Parabola), London
The rejuvenated Commonwealth Institute will become the new home of London's Design Museum and an adjacent mixed use development and two residential buildings with a shared basement will feature apartments with 1 to 5 bedrooms. David oversaw the mechanical design of this luxury residential development in London's West End, containing 57 apartments. Part of this redevelopment is the creation of a new public plaza to the front of the development, known as the High Street Plaza, and the creation of a new public space between the High Street Plaza and the Exhibition Building.

"Design done well and safely can bring beneficial solutions to society and the environment. I wish to contribute my skills to successfully help bring about the right outcomes within the building sector at this critical period of change. Safety has always formed an integral part of my thinking when it comes to building services design. I am keen to part of the change in creating and maintaining safer buildings."

ARUP

Dominic Munro

Role: Tall building design expert

Years of Experience: 31

Qualifications: MA (Cantab) Engineering

Professional Associations: Chartered Engineer, Member of the Institution of Structural Engineers

Why have we chosen Dominic?

Dominic is part of Arup's specialist technology and research team. He splits his time between project work and the development of Arup's structural engineering skills in steel design. This is backed up by over 30 years of experience in building design, principally in high-rise commercial buildings and long-span roofs.

His experience of leading structural design teams for high rise buildings includes London landmarks 30 St Mary Axe ("The Gherkin") and The Heron (Salesforce) Tower, and office and residential towers in Canary Wharf, Moscow, Sydney and Seoul. These buildings have been delivered through multi-disciplinary teams with the structure integrated with the services and vertical transportation. The 30 St Mary Axe building has an all-steel core around the lifts and the floor structure is coordinated with heavily serviced ceilings. More recent developments such as Wood Wharf at Canary Wharf have concrete cores and fully integrated ceiling zones with cellular beams.

Dominic has been involved in small and large refurbishment projects, either to extend existing buildings or to enable change of use.

He has also worked with Arup Fire for two years carrying out risk assessments and developing integrated fire strategies for buildings.

Selected Relevant Experience

High rise projects

1 and 10 Bank Street, Canary Wharf, UK
Leading structural team for two office buildings of 180m and 145m height, with a combined floor area of over 200,000m². Composite steel framed construction, including trading floors. Post-tensioned transfer beams used over deep basement. Architect: KPF. Currently under construction.

Wood Wharf, Building F3/4
52 storey residential tower scheme design with KPF. Currently has outline planning permission.

Heron Tower, London, UK
Led substructure design for 45 storey city centre tower with 12m basement and piled raft constructed top-down in parallel with superstructure and incorporating under-reamed piles. Tallest building in UK on completion in March 2011. Architect: KPF. BCO Best Commercial Workplace, 2012. BREEAM Excellent.

Parc 1, Seoul, South Korea
Review and analysis of interaction of twin towers (334m and 272m tall) with integrated 7-storey, 36m deep basement in seismic region. Coordination of retail and leisure elements of large mixed-use site covering 2ha in city centre. Architect: RSHP. Currently under construction.

Moscow City Plot 9, 'City of Capitals', Russia
Led development of concept and full scheme design and Pricelt submission for Capital Group including 264,000m² of residential, office and retail space to international standards, including two towers (76 and 63 storeys) and a common deep basement. Frink van Egeraat / NBBJ. At 301m the tallest building in Europe on completion in 2010.

Swiss Re London HQ (30 St Mary Axe), UK
Structural team leader for iconic 40 storey, 180m tower in the City of London, of varying circular floor plan and vertically sprawling atria and using a steel diagrid perimeter grid-shell structure for vertical and lateral loads. Architect: Foster + Partners. Winner Stirling Prize, 2004. FCCS Steel Design Award, 2005. CTBUH 10 Year Award, 2013.

Adviser on various fit-out and refurbishment works to tenant spaces including additional accommodation stairs and mezzanine floors.

40 Bank Street, Canary Wharf, UK
34 storey office building. Completed 2003.

Major infrastructure projects

Abu Dhabi International Airport, Midfield Terminal, Abu Dhabi
Technical Reviewer for the erection stage of the Central Processor Roof: 16,500t of geometrically complex long-span steelwork. Architect: KPF. Currently under construction.

Skolkovo Technopark, Moscow, Russia
Led structural design for laboratory buildings near Moscow, using post-tensioned concrete floors to deliver high vibration performance, optimised for minimum material and environmental impact. GIA 157,000m2. Completed 2016. Awarded FIABCI World Gold 2019.

Kuwait International Airport Terminal II, Kuwait
Innovative structural design for the 330,000m² roof of this terminal building, which is supported at just 90 locations using a combination of cable-stayed post-tensioned concrete and a novel form of composite pre-cast shell panels. Architect: Foster + Partners. Currently under construction.

Refurbishment and extension projects

The Elements, Livingston
Major extension to Land Securities retail, catering and leisure development including covered street and winter garden enclosed with an undulating ETFE clad steel roof. On its completion in 2009 it was the first UK retail centre to be awarded BREEAM Excellent.

Canada Square, Canary Wharf, UK
Design of below ground retail and parking with landscaped Plaza, completed in 2000. Subsequent developments including steel and timber framed Pavilions on top of the Plaza, and numerous other interventions including additional mezzanines and strengthening works for change of use.

Lead Structural Engineer, Ove Arup & Partners (Australia)
Structural lead for new build and refurbishment projects in Sydney including the Lyric Theatre and King George tower extension.

Fire Engineer, Arup Fire
Provided fire strategy advice and risk assessments, especially related to structural response to fire. Projects included Dublin Airport and University of Lincoln.

"I welcome this opportunity to help create a more effective framework for delivering and operating buildings. This should be one which enables all those who hold responsibilities for the safety of the residents to ask appropriate questions about the performance of the building systems and their interfaces in a way that allows clear and transparent decisions to be made. I have seen the benefits of this approach in my work with Arup which has developed over successive major building projects."

ARUP

5. Complete Schedule P (Part B) – Costs schedule, detailing your proposed charges and costs for providing the required support.

Please refer to Schedule B (Part B) – Cost schedule - T3463.xlsx

ARUP

Resource and tasking allocation / cost build up

TABLE 1

	Name	Role	Rate/hour
Resource A	David Cormie	principal expert	£215
Resource B	Ishan Abeysekera	assistant researcher	£85
Resource C	Mark Bostock	risk analysis/hazards SME	£133
Resource D	Nick Troth	fire engineering SME	£233
Resource E	Darren Kent	façade engineering SME	£179
Resource F	Mike Banfi	steel design SME	£179
Resource G	Tony Jones	reinforced concrete design SME	£179
Resource H	Andrew Lawrence	timber design and CLT SME	£179
Resource I	Aline Rivi	existing structures SME	£133
Resource J	David Gilpin	building services SME	£233
Resource K	Dominic Munro	high rise design lead SME	£179
Resource L	Simon McKinlay	high rise design lead SME	£233
Resource M			
Resource N			
Resource O			

Instructions for use :
1. Enter data in the yellow shaded areas only. Delete examples show in table 1, 2 and 4
2. Table 1 - Enter names of those intending to work on the project, their roles and their charging rate per hour.
3. Table 2 - Using the provided assumptions given against each task allocate the number of hours to each resource. Ensure the total hours matches the assumption used.
4. Table 4 - enter associated cost of the tasking for Travel, Hotels, Meals and other costs. Where other costs are used please indicate what these are

Table 2

Task ref	Assumptions for pricing (may be different for actual project)	hours	Identify hours each role will use in task														
			Resource A	Resource B	Resource C	Resource D	Resource E	Resource F	Resource G	Resource H	Resource I	Resource J	Resource K	Resource L	Resource M	Resource N	Resource O
1.1	literature review will take total of 80hrs, Support 4hrs	84	40	40		1	1			1	1						
1.2	Support will be circa 20 hrs	20	14	2	4												
1.3	Support will be circa 10 hrs	10	5	2		3											
1.4	Support will be circa 1 hrs	1	1														
1.5	workshop will be 8 hours, 1 person, includes travel time	8	8														
2.1a	focus group will be 8 hours, 1 person, includes travel time	8	8														
2.1b	focus group will be 8 hours, 1 person, includes travel time	8	8														
2.1c	focus group will be 8 hours, 1 person, includes travel time	8	8														
2.1d	focus group will be 8 hours, 1 person, includes travel time	8	8														
2.1e	focus group will be 8 hours, 1 person, includes travel time	8	8														
2.2	Support will be circa 20 hrs	20	6	4	10												
2.3	workshop will be 3 hours, 1 person, includes travel time	3	3														
Deliverable 1	Support will be circa 20 hrs	20	7	6	1	1	1	0.5	0.5	0.5	0.5	0.5	1	0.5			
Deliverable 2	Support will be circa 20 hrs	20	8	4		1	1	1	1	1	1	1	1				
Deliverable 3	Support will be circa 20 hrs	20	8	4	8												
Deliverable 4	Support will be circa 20 hrs	20	4	5		2	2	1	1	1	2	1	1	2			
		271	149	65	23	8	5	2.5	2.5	3.5	4.5	2.5	3	2.5			

Table 3

Task ref	Assumptions for pricing (may be different for actual project)	total cost	Resource A	Resource B	Resource C	Resource D	Resource E	Resource F	Resource G	Resource H	Resource I	Resource J	Resource K	Resource L	Resource M	Resource N	Resource O
			£219	£85	£133	£233	£179	£179	£179	£179	£133	£133	£179	£233			
1.1	literature review will take total of 80hrs. Support 4hrs	£12,884	£8,765	£3,384		£233	£179			£179	£133						
1.2	Support will be circa 20 hrs	£5,769	£5,068	£170	£531												
1.3	Support will be circa 10 hrs	£1,965	£1,095	£170		£700											
1.4	Support will be circa 1 hrs	£219	£219														
1.5	workshop will be 8 hours , 1 person, includes travel time	£1,753	£1,753														
2.1a	focus group will be 8 hours , 1 person, includes travel time	£1,753	£1,753														
2.1b	focus group will be 8 hours , 1 person, includes travel time	£1,753	£1,753														
2.1c	focus group will be 8 hours , 1 person, includes travel time	£1,753	£1,753														
2.1d	focus group will be 8 hours , 1 person, includes travel time	£1,753	£1,753														
2.1e	focus group will be 8 hours , 1 person, includes travel time	£1,753	£1,753														
2.2	Support will be circa 20 hrs	£2,902	£1,315	£309	£1,308												
2.3	workshop will be 8 hours , 1 person, includes travel time	£1,753	£1,753														
Deliverable 1	Support will be circa 20 hrs	£6,283	£1,534	£509	£133	£233	£179	£90	£90	£90	£66	£66	£179	£117			
Deliverable 2	Support will be circa 20 hrs	£3,407	£1,753	£309		£233	£179	£179	£179	£179	£133	£133	£179				
Deliverable 3	Support will be circa 20 hrs	£3,153	£1,753	£309	£1,092												
Deliverable 4	Support will be circa 20 hrs	£3,537	£877	£255		£465	£358	£179	£179	£179	£266	£133	£179	£465			
		£47,555	£30,650	£5,516	£3,054	£1,866	£896	£448	£448	£627	£598	£332	£537	£583			

Table 4
Assumed T&S and other expenses (£)

task ref	task	description of other costs	hotel	travel	meals	other	total cost
1.1	lit review & Support	licences for papers				£145	£145
1.2	Support						
1.3	Support						
1.4	Support						
1.5	workshop						
2.1a	focus group	travel and accommodation to Bootle	£100	£175	£25		£300
2.1b	focus group	travel and accommodation to Bootle	£100	£175	£25		£300
2.1c	focus group	travel and accommodation to Bootle	£100	£175	£25		£300
2.1d	focus group	travel and accommodation to Bootle	£100	£175	£25		£300
2.1e	focus group	travel and accommodation to Bootle	£100	£175	£25		£300
2.2	Support	licences for papers				£145	£145
2.3	workshop	travel and accommodation to Bootle	£100	£175	£25		£300
Deliverable 1	Support						
Deliverable 2	Support						
Deliverable 3	Support						
Deliverable 4	Support						
			£600	£1,050	£150	£290	£2,090

Table 5
Price build up summary

Resource costs	£47,555
T&S	£1,800
Other costs	£290
	£49,645

Schedule B

THE HEALTH AND SAFETY EXECUTIVE (HSE)
TERMS AND CONDITIONS OF CONTRACT FOR THE PROVISION OF SERVICES
TABLE OF CONTENTS

A GENERAL PROVISIONS

A1 Definitions

A1.1 In these Terms and Conditions of Contract the following definitions shall apply:

"Condition" means a condition of this contract;

"Confidential Information" means any information, which has been designated as confidential by either Party in writing or that ought reasonably to be considered as confidential however it is conveyed or on what media it is stored, including information that relates to the business, affairs, developments, trade secrets, know-how, personnel, and suppliers of the Contractor, including Intellectual Property Rights, together with all information derived from the above, and any other information clearly designated as being confidential (whether or not it is marked as "confidential") or which ought reasonably to be considered to be confidential;

"Contract" means the agreement between HSE and the Contractor consisting of the Specification, the HSE Form of Agreement or Purchase Order, these Conditions and any other documents or parts of documents relating to the Contract;

"Contract Manager" means the person for the time being appointed by HSE as being authorised to administer the Contract on behalf of HSE or such person as may be nominated by the Contract Manager to act on its behalf.

"Contractor" means the person, firm or company to whom the Contract is issued;

"Environmental Information Regulations" means the Environmental Information Regulations 2004 and any guidance and/or codes of practice issued by the Information Commissioner or relevant government department in relation to such legislation;

"Equipment" means the Contractor's equipment, plant, materials and such other items supplied and used by the Contractor in the performance of its obligations under the Contract.

"FOIA" means the Freedom of Information Act 2000 and any subordinate legislation made under this Act from time to time together with any guidance and/or codes of practice issued by the Information Commissioner in relation to such legislation;

"HSE" means the Health and Safety Executive acting as part of the Crown;

"Information" has the meaning given under section 84 of the FOIA;

"Parties" means HSE and the Contractor;

"Requests for Information" shall have the meaning set out in FOIA or any apparent request for information under the FOIA, the Environmental Information Regulations as relevant (where the meaning set out for the term "request" shall apply);

"Schedule" means a schedule attached to, and forming part of, the Contract.

"Services" means the services to be provided as specified in the specification and shall include any materials, articles and/or goods necessary to provide the Services;

"Specification" means the description of the Services to be supplied under the Contract as set out in Schedule A.

"Staff" means all persons employed by the Contractor to perform the Contract together with the Contractor's servants, agents and sub-contractors used in the performance of the Contract.

"GDPR Clause Definitions":

Data Protection Legislation: (i) the GDPR, the LED and any applicable national implementing Laws as amended from time to time (ii) the DPA 2018 to the extent that it relates to processing of personal data and privacy; (iii) all applicable Law about the processing of personal data and privacy.

Data Protection Impact Assessment: an assessment by the Controller of the impact of the envisaged processing on the protection of Personal Data.

Controller, Processor, Data Subject, Personal Data, Personal Data Breach, Data Protection Officer take the meaning given in the GDPR.

Data Loss Event: any event that results, or may result, in unauthorised access to Personal Data held by the Contractor under this Agreement, and/or destruction of Personal Data in breach of this Agreement, including any Personal Data Breach.

Data Subject Request: a request made by, or on behalf of, a Data Subject in accordance with rights granted pursuant to the Data Protection Legislation to access their Personal Data.

DPA 2018: Data Protection Act 2018.

GDPR: the General Data Protection Regulation (Regulation (EU) 2016/679).

Joint Controllers: where two or more Controllers jointly determine the purposes and means of processing.

LED: Law Enforcement Directive (Directive (EU) 2016/680).

Protective Measures: appropriate technical and organisational measures which may include: pseudonymising and encrypting Personal Data, ensuring confidentiality, integrity, availability and resilience of systems and services, ensuring that availability of and access to Personal Data can be restored in a timely manner after an incident, and regularly assessing and evaluating the effectiveness of the such measures adopted by it.

Sub-processor: any third Party appointed to process Personal Data on behalf of that Processor related to this Agreement.

A2 Interpretation

A2.1 The interpretation and construction of this Contract shall be subject to the following provisions:

The terms and expressions set out in A1.1 shall have the meanings ascribed therein;

Words importing the singular meaning include where the context so admits the plural meaning and vice versa;

Words importing the masculine include the feminine and the neuter;

Reference to a Condition is a reference to the whole of that Condition unless stated otherwise;

Reference to a Condition is a reference to a paragraph within a Condition unless stated otherwise;

Reference to any statute, enactment, order, regulation or other similar instrument shall be construed as a reference to the statute, enactment, order, regulation or instrument as amended by any subsequent enactment, modification, order, regulation or instrument as subsequently amended or re-enacted;

Reference to any person shall include natural persons and partnerships, firms and other incorporated bodies and all other legal persons of whatever kind and however constituted and their successors and permitted assigns or transferees;

The words “include”, “includes” and “including” are to be construed as if they were immediately followed by the words “without limitation”; and

Headings are included in this Contract for ease of reference only and shall not affect the interpretation or construction of this Contract.

A3 Contract Period

A3.1 The Services shall finish on a date agreed between HSE and the Contractor.

A3.2 If completion of the Services is delayed by reason of any act or default of HSE or any other circumstance which is beyond the control of the Contractor, the time for completion shall be extended by such period as may be reasonable, provided that:

(a) on being aware of the nature and extent of the delay the Contractor shall forthwith notify HSE of such nature and extent;

(b) the delay was unforeseeable when the Contract commenced; the Contractor takes all reasonable steps to minimise the delay.

A3.3 The Contractor shall not be entitled to an extension of time where such delay is attributable to any negligence, default, acts or omissions on his part.

A4 Contractor's Status

A4.1 At all times during the contract period the Contractor shall be an independent contractor. Nothing in this Contract shall be construed as creating a partnership, a contract of employment or a relationship of principal and agent between HSE and the Contractor. Neither Party shall be authorised to act in the name of, or on behalf of, or otherwise bind the other Party save as expressly permitted by the terms of the Contract.

A5 Entire Agreement

A5.1 This Contract constitutes the entire agreement between the Parties relating to the subject matter of the Contract. The Contract supersedes all prior negotiations, representations, understandings and undertakings, whether written or oral, except that this Condition shall not exclude liability in respect of any fraudulent misrepresentation.

A5.2 In the event of, and only to the extent of, any conflict between the clauses of the Contract, any document referred to in those clauses and the Schedules, the conflict shall be resolved in accordance with the following order of precedence:

(a) the clauses of the Contract;

(b) The Schedules; and

(c) any other document referred to in the clauses of the Contract.

A6 Notices

A6.1 Any notice given in connection with the Contract may be sent by hand or by post or by registered post or by the recorded delivery service or facsimile transmission, or other agreed telecommunication or electronic means. When it is sent or transmitted to the address of the party shown in the Contract, or to any other address agreed between the parties, it shall be deemed to have been received:

(a) if delivered by hand, on the day of delivery if it is the recipient's business day and otherwise on the first business day of the recipient immediately following the day of delivery;

(b) if sent by first class prepaid post (or airmail if appropriate) on the third business day (or on the tenth business day in the case of airmail) after the day of posting;

(c) if sent by facsimile or other agreed telecommunication or electronic means:

(d) if transmitted between 09.00 and 17.00 on a business day (recipient's time) on completion of receipt by the sender of verification of the transmission from the receiving instrument;

(e) if transmitted at any other time, at 09.00 on the first business day (recipient's time) following the completion of receipt by the sender of verification of the transmission from the receiving instrument.

A7 Conflicts of Interest

A7.1 The Contractor shall take appropriate steps to ensure that neither the Contractor nor any Staff is placed in a position where, in the reasonable opinion of the HSE, there is or may be an actual conflict, or a potential conflict, between the pecuniary or personal interests of the Contractor and the duties owed to the HSE under the provisions of the Contract. The Contractor will disclose to the HSE full particulars of any such conflict of interest which may arise.

A7.2 The HSE reserves the right to terminate the Contract immediately by notice in writing and/or to take such other steps it deems necessary where, in the reasonable opinion of the HSE, there is or may be an actual conflict, or a potential conflict, between the pecuniary or personal interests of the Contractor and the duties owed to the HSE under the provisions of the Contract. The actions of the HSE

pursuant to this clause shall not prejudice or affect any right of action or remedy which shall have accrued or shall thereafter accrue to the HSE.

A8 Fraud

A8.1 The Contractor shall safeguard HSE's funding of the Contract against fraud generally and, in particular, fraud on the part of the staff, or the Contractor's directors and suppliers. The Contractor shall notify HSE immediately if it has any reason to suspect that any fraud has occurred or is occurring or is likely to occur.

A8.2 If the Contractor or its Staff commits Fraud in relation to this or any other contract with the Crown (including the HSE) the HSE may:

(a) terminate the Contract and recover from the Contractor the amount of any loss suffered by the HSE resulting from the termination, including the cost reasonably incurred by the HSE of making other arrangements for the supply of the Services and any additional expenditure incurred by the HSE throughout the remainder of the Contract Period; or

(b) recover in full from the Contractor any other loss sustained by the HSE in consequence of any breach of this clause.

B PROVISION OF THE SERVICES

B1 The Services

B1.1 The Services shall be in accordance with the Contract specification and shall be performed with reasonable skill, care and diligence and in accordance with standard industry practices. During the course of the Contract HSE or its authorised representative shall have the power to inspect and examine any work being performed under the Contract at any reasonable time. The Contractor shall give all such facilities as HSE or its authorised representative may reasonably require for such inspection and examination.

B1.2 Where the Services are to be carried out on HSE premises, on completion of the Services the Contractor shall remove his plant, equipment, unused materials and waste and leave the premises in the condition as found.

B2 Contractor's Personnel

B2.1 If the Contract relates to the engagement of personnel provided by an agency, the Contractor should provide the relevant details as described in Clauses B2.4.

B2.2 The Contractor shall provide and maintain an organisation having the necessary facilities and employees of appropriate qualifications and experience to undertake the tasks identified in the specification.

B2.3 All persons employed on work relating to the Contract must have appropriate qualifications and competencies and be acceptable to HSE in all respects. Where requested full particulars of all personnel to be used shall be forwarded by the Contractor in advance to HSE for confirmation of their acceptability.

B2.4 Where requested the Contractor shall provide HSE with a list of names and official addresses of all persons who are or may be at any time concerned with the Services or any part of them, specifying the capacities in which they are to be employed and giving such other particulars and evidence of identity and any other supporting information which HSE may reasonably require.

B2.5 The Contractor shall take all reasonable steps to avoid changes of original personnel assigned to and accepted for the work under the Contract except where changes are unavoidable or of a temporary nature caused by sickness, holidays or any other reasonable absence. The Contractor shall give at least one month's notice to HSE of proposals to change key personnel and Conditions B2.2 to B2.3 and E11.1 shall apply to the replacement personnel.

B2.6 The Contractor shall take the steps reasonably required by HSE to prevent unauthorised persons being admitted to HSE premises. Where HSE gives the Contractor notice that any person is not to be admitted to or is to be removed

from HSE premises or is not to become involved in or is to be removed from involvement in the performance of the Contract, the Contractor shall take all reasonable steps to comply with such notice and if requested by HSE the Contractor shall replace any person removed under this Condition with another suitably qualified person and ensure that any pass issued to the person removed is surrendered.

B2.7 The decision of HSE as to whether any person is to be admitted to or is to be removed from HSE premises or is not to become involved in or is to be removed from involvement in the performance of the Contract and as to whether the Contractor has furnished the information or taken the steps required in Conditions B2.3 to B2.6 shall be final and conclusive.

B2.8 The Contractor shall bear the cost of any notice, instruction or decision of HSE under Conditions B2.3 to B2.7 and E11.1.

B3 Legitimacy of the Workforce

B3.1 The Contractor shall take all reasonable steps to ensure that any servants, employees or agents of the Contractor and any sub-contractors, their servants or agents, employed in the execution of the Contract are entitled to obtain employment in the United Kingdom and are not claiming Unemployment Benefit or any other benefit payable to persons registered as unemployed.

B4 Inspection of Premises and Nature of Services

B4.1 Where Services are to be carried out on HSE premises the Contractor is deemed to have inspected the premises before tendering so as to have understood the precise nature and extent of the Services to be carried out and satisfied himself in relation to all matters connected with the Services and premises. HSE shall grant such access as may be reasonable for this purpose.

B5 HSE Property

B5.1 Where the Contract requires HSE to issue materials free of charge to the Contractor such materials shall be and shall remain the property of HSE. The Contractor shall maintain all such materials in good order and condition and shall use such materials solely in connection with the Contract. The Contractor shall notify HSE of any surplus materials remaining after completion of the Services and shall dispose of them as HSE may direct. Waste of such materials arising from bad workmanship or negligence of the Contractor or any of his servants, agents or sub-contractors shall be made good at the Contractor's expense. Without prejudice to any other rights and remedies of HSE the Contractor shall deliver up such materials to HSE on demand, whether processed or not.

B6 Purchasing on behalf of HSE

B6.1 In the event that the Contractor procures Goods or Services including equipment from third parties on behalf of HSE then they shall at all times do so in accordance with the provisions of the Public Contracts Regulations 2015 as though the Contractor were a Contracting Authority within the meaning of the said Regulations.

B7 Equipment

B7.1 [Not required]

C PAYMENT AND CONTRACT PRICE

C1 Contract Price

C1.1 The price of the Services and Equipment shall be as stated in the Contract and shall be exclusive of VAT.

C2 Invoicing and Payment

C2.1 Invoices for the provision of Services shall be submitted at agreed intervals during the Contract period in a format agreed between the parties.

C2.2 Payment shall be made within 30 days of receipt and agreement of invoices for Services provided to the satisfaction of HSE. HSE's usual method of payment is through the Banks Automated Clearing System (BACS). All payments made by HSE to the Contractor shall be through BACS unless the Contractor provides advance written notice to HSE that this method of payment is not possible or shall cause undue inconvenience.

C2.3 Any complaints which may arise concerning late payment of invoices should be addressed in the first instance to the Contract Manager. The Contractor shall not suspend the supply of the Services unless the Contractor is entitled to terminate the Contract in accordance with Clause H2.6 (Termination on Default) for failure to pay undisputed sums of money. Interest shall be payable by HSE on the late payment of any undisputed sums of money properly invoiced in accordance with the Late Payment of Commercial Debts (Interest) Act 1998.

C3 Value Added Tax (VAT)

C3.1 Where applicable the prevailing rate and total of Value Added Tax (VAT) shall be shown separately on all invoices.

C4 Tax Status

C4.1 Where the Contractor, or its staff, is liable to be taxed in the UK in respect of consideration received under this contract, it shall at all times comply with the Income Tax (Earnings and Pensions) Act 2003 (ITEPA) and all other statutes and regulations relating to income tax in respect of that consideration.

C4.2. Where the Contractor, or its staff, is liable to National Insurance Contributions (NICs) in respect of consideration received under this contract, it shall at all times comply with the Social Security Contributions and Benefits Act 1992 (SSCBA) and all other statutes and regulations relating to NICs in respect of that consideration.

C4.3 HSE may, at any time, request that the Contractor provides information which demonstrates how it, or its staff, has complied with Clauses C4.1 and C4.2 above or why those Clauses do not apply to it.

C4.4 A request under Clause C4.3 above may specify the information which the Contractor, or its staff, must provide and the period within which that information must be provided.

C4.5 HSE may terminate this contract if-

(a) in the case of a request mentioned in Clause C4.3 above-

(i) The Contractor, or its staff, fails to provide information in response to the request within a reasonable time, or

(ii) The Contractor, or its staff, provides information which is inadequate to demonstrate either how it complies with Clauses C4.1 and C4.2 above or why those Clauses do not apply to it;

(b) in the case of a request mentioned in Clause C4.4 above, The Contractor, or its staff, fails to provide the specified information within the specified period, or

(c) it receives information which demonstrates that, at any time when Clauses C4.1 and C4.2 apply the Contractor, or its staff, is not complying with those Clauses.

C4.6 HSE may supply any information which it receives under Clause C4.3 to the Commissioners of Her Majesty's Revenue and Customs for the purpose of the collection and management of revenue for which they are responsible.

C5 Prompt Payment to Sub-Contractors

C5.1 Where the Contractor enters into a sub-contract with a supplier or contractor for the purpose of performing its obligations under the Contract, it shall ensure that a provision is included in such sub-contract which requires payment to be made of all sums due

by the Contractor to the sub-contractor within a specified period not exceeding 30 days from receipt of a valid invoice.

C6 Recovery of Sums Due

C6.1 Whenever under the Contract any sum of money is recoverable from or payable by the Contractor (including any sum which the Contractor is liable to pay to HSE in respect of any breach of this Contract) HSE may unilaterally deduct that sum from any sum then due or which at any later time becomes due to the Contractor under this Contract.

C6.2 Any overpayment by either Party, whether of the Contract Price or of VAT or otherwise, shall be a sum of money recoverable by the Party who made the overpayment from the Party in receipt of the overpayment.

C6.3 The Contractor shall make all payments due to HSE without any deduction whether by way of set-off, counterclaim, discount, abatement or otherwise unless the Contractor has a valid court order requiring an amount equal to such deduction to be paid by HSE to the Contractor.

C6.4 All payments due shall be made within a reasonable time unless otherwise specified in the Contract, in cleared funds, to such bank or building society account as the recipient Party may from time to time direct.

D STATUTORY OBLIGATIONS AND REGULATIONS

D1 Prevention of Corruption

D1.1 The Contractor shall not offer or give, or agree to give, to any employee, agent, servant or representative of HSE any gift or consideration of any kind as an inducement or reward for doing, refraining from doing, or for having done or refrained from doing, any act in relation to the obtaining or execution of this Contract or any other contract with HSE, or for showing or refraining from showing favour or disfavour to any person in relation to this Contract or any such contract. The attention of the Contractor is drawn to the criminal offences under The Bribery Act 2010.

D1.2 The Contractor shall not enter into this Contract if in connection with it commission has been paid or is agreed to be paid to any employee or representative of HSE by the Contractor or on the Contractor's behalf, unless before this Contract is made particulars of any such commission and of the terms and conditions of any agreement for the payment thereof have been disclosed in writing to HSE.

D1.3 Where the Contractor or Contractor's employees, servants, sub-contractors, suppliers or agents or anyone acting on the Contractor's behalf, engages in conduct prohibited by Conditions D1.1 or D1.2 in relation to this or any other contract with HSE, HSE has the right to:

(a) terminate the Contract and recover from the Contractor the amount of any loss suffered by HSE resulting from the termination; or

(b) recover in full from the Contractor any other loss sustained by HSE in consequence of any breach of this Condition, whether or not the Contract has been terminated.

D1.4 In exercising its rights or remedies under this Condition, HSE shall:

(a) act in a reasonable and proportionate manner having regard to such matters as the gravity of, and the identity of the person performing, the prohibited act;

(b) give all due consideration, where appropriate, to action other than termination of the Contract.

D2 Equality and Diversity

D2.1 The Supplier shall:

(a) perform its obligations under this Framework Agreement (including those in relation to the provision of the Goods and/or Services) in accordance with:

(i) all applicable equality Law (whether in relation to race, sex, gender re assignment, religion or belief, disability, sexual orientation, pregnancy, maternity, age or otherwise); and

(ii) any other requirements and instructions which the Authority reasonably imposes in connection with any equality obligations imposed on the Au thority at any time under applicable equality Law;

(b) take all necessary steps, and inform the Authority of the steps taken, to prevent unlawful discrimination designated as such by any court or tribunal, or the Equality and Human Rights Commission or (any successor organisation).

D3 The Contracts (Rights of Third Parties) Act 1999

D3.1 No person who is not a Party to the Contract (including without limitation any employee, officer, agent, representative, or sub-contractor of either HSE or the Contractor) shall have any right to enforce any term of the Contract, which expressly or by implication, confers a benefit on him without the prior agreement in writing of both HSE and the Contractor. This Condition does not affect any right or remedy of any person which exists or is available otherwise than pursuant to the Contracts (Rights of Third Parties) Act 1999 and does not apply to the Crown.

D3.2 The Contractor shall not make any disposition of its rights that would prevent compliance with the conditions of this Contract, nor shall it accept any financial contribution from any third party for any part of the Work without the prior agreement in writing of HSE.

D4 Environmental Requirements

D4.1 The Contractor shall perform the Services in accordance with the government's environmental policy, which is to conserve energy, water, wood, paper and other resources, reduce waste and phase out the use of ozone depleting substances and minimise the release of greenhouse gases, Volatile Organic Compounds and other substances damaging to health and the environment.

D4.2 Throughout the term of the Contract the Contractor shall provide information on new or improved environmentally preferable products when they become available and, where reasonably required, promote their use. Samples of such products shall be provided to the Contract Manager for evaluation and for written agreement before wider use within HSE.

D4.3 The Contractor shall co-operate with HSE, without charge, in Supplier Environmental Audits or Product Audits which the Contractor or his representative may undertake, such audits to be restricted to claims made by the Contractor for products made by the Contractor, for products supplied by the Contractor, or by the Contractor's environmental policy.

D4.4 The Contractor shall maintain, and provide proof, at reasonable notice by HSE, of carrying out an environmental management system conforming to ISO 14001 or any subsequent or equivalent standards.

D5 Health and Safety

D5.1 The Contractor shall promptly notify HSE of any health and safety hazards which may arise in connection with the performance of the Contract.

D5.2 HSE shall promptly notify the Contractor of any health and safety hazards which may exist or arise at HSE's premises and which may affect the Contractor in the performance of the Contract.

D5.3 Where the Services are to be performed on HSE premises the Contractor and the HSE Contract Manager shall undertake a joint risk assessment and take action to minimise the risk, and such actions shall be recorded in the premises' Health and Safety Manual.

D5.4 While on HSE premises, the Contractor shall comply with any health and safety measures implemented by HSE in respect of personnel and other persons working on those premises.

D5.5 The Contractor shall notify HSE immediately in the event of any incident or "near miss" occurring in the performance of the Contract on HSE premises where that incident or "near miss" causes, or may cause, any personal injury or damage to property which could give rise to personal injury.

D5.6 The Contractor shall take all necessary measures to comply with the requirements of the Health and Safety at Work etc Act 1974 and any other Acts, orders, regulations and Codes of Practice relating to Health and Safety which may apply to staff in the performance of the Contract.

D5.7 The Contractor shall ensure that his health and safety policy statement and health and safety management arrangements (as required by the Health and Safety at Work etc Act 1974) are kept up to date and made available to HSE on request.

D6 TUPE

D6.1 Both HSE and the Contractor recognise that the Transfer of Undertakings (Protection of Employment) Regulations 2006 (TUPE) may apply in respect of the award of the Contract, and that for the purposes of those Regulations, the undertaking concerned (or any relevant part of the undertaking) shall transfer to the Contractor on the commencement of the Contract.

D6.2 During the period of six months preceding the expiry of the Contract or after HSE has given notice to terminate the Contract or the Contractor stops trading, and within 20 working days of being so requested by HSE, the Contractor shall fully and accurately disclose to HSE for the purposes of TUPE all information relating to its employees engaged in providing the Services under the Contract, in particular, but not necessarily restricted to, the following:

(a) the total number of staff whose employment with the Contractor is liable to be terminated at the expiry of this Contract but for any operation of law; and

(b) for each person, age and gender, details of their salary, and pay settlements covering that person which relate to future dates but which have already been agreed and their redundancy entitlements (the names of individual members of employed staff do not have to be given); and

(c) full information about the other terms and conditions on which the affected staff are employed (including but not limited to their working arrangements), or about where that information can be found; and

(d) details of pension entitlements, if any; and

(e) job titles of the members of staff affected and the qualifications required for each position.

D6.3 The Contractor shall permit HSE to use the information for the purposes of TUPE and re-tendering. The Contractor shall co-operate with the re-tendering of the Contract by allowing the transferee to communicate with and meet the affected employees and/or their representatives.

D6.4 The Contractor agrees to indemnify HSE fully and hold it harmless at all times from and against all actions, proceedings, claims, expenses, awards, costs and all other liabilities whatsoever in any way connected with or arising from or relating to the provision of information under Condition D6.2.

D6.5 The Contractor agrees to indemnify HSE from and against all actions, proceedings, claims, expenses, awards, costs and all other liabilities (including legal fees) in connection with or as a result of any claim or demand by any employee or person claiming to be an employee on any date upon which the Contract is terminated and/or transferred to any third party ("Relevant Transfer Date") arising out

of their employment or its termination whether such claim or claims arise before or after the Relevant Transfer Date.

D6.6 In the event that such information provided by the Contractor in accordance with Condition 6.2 above becomes inaccurate, whether due to changes to the employment and personnel details of the affected employees made subsequent to the original provision of such information or by reason of the Contractor becoming aware that the information originally given was inaccurate, the Contractor shall notify HSE of the inaccuracies and provide the amended information.

D6.7 The provisions of this Condition shall apply during the continuance of this Contract and indefinitely after its termination.

D7 Welsh Language Scheme

D7.1 Where the Services are to be provided to Wales, the service provider shall adhere to HSE's Welsh Language Scheme and the Welsh and English Languages shall be treated on a basis of equality in accordance with the Welsh Language Act 1993.

E PROTECTION OF INFORMATION

E1 Data Protection Act

E1.1 For the purposes of this Clause E1, the terms "Data Controller", "Data Processor", "Data Subject", "Personal Data", "Process" and "Processing shall have the meaning prescribed under the DPA.

E1.2 The Contractor shall (and shall ensure that all of its Staff) comply with any notification requirements under the DPA and both Parties will duly observe all their obligations under the DPA which arise in connection with the Contract.

E1.3 Notwithstanding the general obligation in Clause E1.2, where the Contractor is processing Personal Data (as defined by the DPA) as a Data Processor for HSE the Contractor shall:

(a) process the Personnel Data only in accordance with instructions from HSE (which may be specific instructions or instructions of a general nature) as set out in this Contract or as otherwise notified by HSE;

(b) comply with all applicable laws;

(c) process the Personal Data only to the extent; and in such manner as is necessary for the provision of the Provider's obligations under this Contract or as is required by Law or any Regulatory Body;

(d) implement appropriate technical and organisational measures to protect the Personal Data against unauthorised or unlawful Processing and against accidental loss, destruction, damage, alteration or disclosure. These measures shall be appropriate to the harm which might result from any unauthorised or unlawful Processing, accidental loss, destruction, damage, alteration or disclosure to the Personal Data and having regard to the nature of the Personal Data which is to be protected;

(e) take reasonable steps to ensure the reliability of its staff and agents who may have access to the Personal Data;

(f) obtain prior written consent from HSE in order to transfer the Personal Data to any third party for the provision of the Services;

(g) not cause or permit the Personal Data to be transferred outside of the European Economic Area without the prior consent of HSE;

(h) ensure that all staff and agents required to access the Personal Data are informed of the confidential nature of the Personal Data and comply with the obligations set out in this Clause E1;

(i) ensure that none of the staff and agents publish disclose or divulge any of the Personal Data to any third parties unless directed in writing to do so by HSE.

not disclose Personnel Data to any third parties in any circumstances other than with the written consent of HSE or in compliance with a legal obligation imposed upon HSE.

E1.4 The Contractor shall notify HSE (within five Working Days) if it receives:

(a) a request from a Data Subject to have access to that person's Personal Data; or

(b) a complaint or request relating to HSE's obligations under the DPA.

E1.5 The provision of this Clause E1 shall apply during the continuance of this Contract and indefinitely after its expiry or termination.

E2 Official Secrets Acts 1911, 1989, Section 182 of the Finance Act 1989

E2.1 The Contractor undertakes to abide by, and ensure that its Staff abide by the provisions of:

(a) the Official Secrets Acts 1911 to 1989; and

(b) Section 182 of the Finance Act 1989.

E2.2 In the event that the Contractor and its Staff fail to comply with this Condition, HSE reserves the right to terminate the Contract by giving notice in writing to the Contractor.

E2.3 The provisions of Condition E2.1 shall apply during the continuance of the Contract and indefinitely after its expiry or termination.

E3 Confidentiality

E3.1 Except to the extent set out in this clause or where disclosure is expressly permitted elsewhere in this Contract, each Party:

(a) shall treat all Confidential Information belonging to the other Party as confidential and safeguard it accordingly; and

(b) shall not disclose any Confidential Information belonging to the other Party to any other person without the prior written consent of the other Party, except to such persons and to such extent as may be necessary for the performance of the Contract.

E3.2 Notwithstanding the provisions of clause E3.1 above, HSE may disclose the Confidential Information of the Contractor:

(g) on a confidential basis to any Central Government Body for any proper purpose of HSE or of the relevant Central Government Body;

(h) to Parliament and Parliamentary Committees or if required by any Parliamentary reporting requirement;

(i) to the extent that HSE (acting reasonably) deems disclosure necessary or appropriate in the course of carrying out its public functions;

(j) on a confidential basis to a professional adviser, consultant, supplier or other person engaged by any of the entities described in Clause E 3.2(a) (including any benchmarking organisation) for any purpose relating to or connected with this Agreement;

(k) on a confidential basis for the purpose of the exercise of its rights under this Agreement; or

(l) on a confidential basis to a proposed Successor Body in connection with any assignment, novation or disposal of any of its rights, obligations or liabilities under this Agreement,

and for the purposes of the foregoing, references to disclosure on a confidential basis shall mean disclosure subject to a confidentiality agreement or arrangement containing terms no less stringent than those placed on HSE under this Clause E3.

E3.3 The Contractor shall take all necessary precautions to ensure that all Confidential Information obtained from HSE under or in connection with the Contract:

(a) is given only to such of the Staff and professional advisors or consultants engaged to advise it in connection with the Contract as is strictly necessary for the performance of the Contract and only to the extent necessary for the performance of the Contract;

(b) is treated as confidential and not disclosed (without prior Approval) or used by any Staff or such professional advisors or consultants' otherwise than for the purposes of the Contract.

E3.4 Where it is considered necessary in the opinion of HSE, the Contractor shall ensure that Staff or such professional advisors or consultants sign a confidentiality undertaking before commencing work in connection with the Contract.

E3.5 The Contractor shall not use any Confidential Information received otherwise than for the purposes of the Contract.

E3.6 The provisions of Conditions E3.1 to E3.5 shall not apply to any Confidential Information received by one Party from the other:

(a) which is or becomes public knowledge (otherwise than by breach of this Condition);

(b) which was in the possession of the receiving Party, without restriction as to its disclosure, before receiving it from the disclosing Party;

(c) which is received from a third party who lawfully acquired it and who is under no obligation restricting its disclosure;

(d) is independently developed without access to the Confidential Information; or

(e) which must be disclosed pursuant to a statutory, legal or parliamentary obligation placed upon the Party making the disclosure, including any requirements for disclosure under the FOIA, or the Environmental Information Regulations pursuant to Clause E5 (Freedom of Information).

E3.7 Nothing in this Condition shall prevent HSE:

(a) disclosing any Confidential Information for the purpose of:

(i) the examination and certification of HSE's accounts; or

(ii) any examination pursuant to Section 6(1) of the National Audit Act 1983 of the economy, efficiency and effectiveness with which HSE has used its resources; or

(b) disclosing any Confidential Information obtained from the Contractor:

(i) to any other department, office or agency of the Crown; or

(ii) to any person engaged in providing any services to HSE for any purpose relating to or ancillary to the Contract;

provided that in disclosing information under Condition E3.7 HSE discloses only the information which is necessary for the purpose concerned and requires that the information is treated in confidence and that a confidentiality undertaking is given where appropriate.

E3.8 Nothing in this Condition shall prevent either Party from using any techniques, ideas or know-how gained during the performance of the Contract in the course of its normal business, to the extent that this does not result in a disclosure of Confidential Information or an infringement of Intellectual Property Rights.

E3.9 In the event that the Contractor fails to comply with this Condition E3, HSE reserves the right to terminate the Contract by notice in writing with immediate effect.

E3.10 The provisions under this Condition E3 are without prejudice to the application of the Official Secrets Acts 1911 to 1989 to any Confidential Information.

E4 Publication of the Contract

E4.1 The parties acknowledge that, except for any information which is exempt from disclosure in accordance with the provisions of the FOIA, the content of this Contract is not Confidential Information. HSE shall be responsible for determining in its absolute discretion whether any of the content of the Contract is exempt from disclosure in accordance with the provisions of the FOIA.

E4.2 Notwithstanding any other term of this Contract, the Contractor hereby gives his consent for HSE to publish the Contract in its entirety, including from time to time agreed changes to the Contract, to the general public.

E4.3 HSE may consult with the Contractor to inform its decision regarding any redactions but HSE shall have the final decision in its absolute discretion.

E4.4 The Contractor shall assist and co-operate with HSE to enable HSE to publish this Contract.

E5 Freedom of Information

E5.1 The Contractor acknowledges that HSE is subject to the requirements of the FOIA and the Environmental Information Regulations and shall facilitate HSE's compliance with its Information disclosure requirements pursuant to the same in the manner provided for in Clauses E5.2-6 (inclusive) below.

E5.2 Where HSE receives a Request for Information in relation to Information that the Contractor is holding on its behalf and which the HSE does not hold itself HSE shall refer such Request for Information to the Contractor as soon as practicable and in any event within 5 Working Days of receiving a Request for Information and the Contractor shall:

(a) provide HSE with a copy of all such Information in the form that HSE requires as soon as practicable and in any event within 10 Working Days (or such other period as HSE acting reasonably may specify) of HSE's request; and

(b) provide all necessary assistance as reasonably requested by HSE in connection with any such Information, to enable HSE to respond to a Request for Information within the time for compliance set out in Section 10 of the FOIA or Regulation 5 of the Environmental Information.

E5.3 Following notification under Clause E5.2, and up until such time as the Contractor has provided HSE with all the Information specified in Clause E5.2(a), the Contractor may make representations to HSE as to whether or not or on what basis Information requested should be disclosed, and whether further information should reasonably be provided in order to identify and locate the information requested, provided always that HSE shall be responsible for determining at its absolute discretion:

(a) whether Information is exempt from disclosure under the FOIA and the Environmental Information Regulations; and

(b) whether Information is to be disclosed in response to a Request for Information, and

in no event shall the Contractor respond directly, or allow its sub-contractors to respond directly, to a Request for Information unless expressly authorised to do so by HSE.

E5.4 In the event of a request from HSE pursuant to Clause E5.2, the Contractor shall as soon as practicable, and in any event within 5 Working Days of receipt of such request, inform HSE of the Contractor's estimated costs of complying with the request to the extent these would be recoverable if incurred by HSE under Section 12(1) of the FOIA and the Fees Regulations. Where such costs (either on their own or in conjunction with HSE's own such costs in respect of such Request for Information) will exceed the appropriate limit referred to in Section 12(1) of the FOIA and as set out in the Fees Regulations (the "Appropriate Limit") HSE shall inform the Contractor in writing whether or not it still requires the Contractor to comply with the request and where it does require the Contractor to comply with the request the 10 Working Days

period for compliance shall be extended by such number of additional days for compliance as HSE is entitled to under Section 10 of the FOIA. In such case, HSE shall notify the Contractor of such additional days as soon as practicable after becoming aware of them and shall reimburse the Contractor for such costs as the Contractor incurs in complying with the request to the extent it is itself entitled to reimbursement of such costs in accordance with its own FOIA policy from time to time.

E5.5 The Contractor shall ensure that all Information held on behalf of HSE is retained for disclosure for at least six years (from the date it is acquired) and shall permit HSE to inspect such Information as requested from time to time.

E5.6 The Contractor shall transfer to HSE any Request for Information received by the Contractor as soon as practicable and in any event within 2 Working Days of receiving it.

E5.7 The Contractor acknowledges that (notwithstanding the provisions of Clause E4) HSE may, acting in accordance with the Department of Constitutional Affairs' Code of Practice on the Discharge of Functions of Public Authorities under Part I of the FOIA (the "Code"), be obliged under the FOIA or the Environmental Information Regulations to disclose Information concerning the Contractor or the Contract:

(a) in certain circumstances without consulting the Contractor, or

(b) following consultation with the Contractor and having taken its views into account,

provided always that where E5.7(a) above applies HSE shall, in accordance with the recommendations of the Code, draw this to the attention of the Contractor prior to any disclosure.

E5.8 The Contractor acknowledges that any lists provided by him listing or outlining Confidential Information, are of indicative value only and that HSE may nevertheless be obliged to disclose Confidential Information in accordance with the requirements of the FOIA and the Environmental Information Regulations.

E6 Publicity, Media and Official Enquiries

E6.1 The Contractor shall not make any press announcements or publicise the Contract or any part thereof in any way, except with the written consent of HSE.

E6.2 The Contractor shall take all reasonable steps to ensure the observance of the provisions of Condition E6.1 by all its servants, employees, agents, professional advisors and consultants. The Contractor shall take all reasonable steps to ensure the observance of the provisions of Condition E6.1by its sub-contractors.

E6.3 HSE reserves the right to publish the results of the Services carried out under the Contract with appropriate acknowledgement of the work contributed by the staff of the Contractor.

E6.4 The provisions of this Condition shall apply during the continuance of this Contract and indefinitely after its expiry or termination.

E7 Security

E7.1 Where the services are to be carried out on HSE premises the Contractor shall comply with the security requirements of HSE and the premises manager, and shall ensure that all of its employees, agents, servants and sub-contractors shall likewise comply with such requirements.

E8 Intellectual Property Rights

E8.1 All Intellectual Property Rights in any guidance, specifications, instructions, toolkits, plans, data, drawings, databases, patents, patterns, models, designs or other material (the "**IP Materials**"):

(a) furnished to or made available to the Contractor by or on behalf of the HSE shall remain the property of the HSE; and

(b) prepared by or for the Contractor on behalf of the HSE for use, or intended use, in relation to the performance by the Contractor of its obligations under the Contract shall belong to the HSE;

and the Contractor shall not, and shall ensure that the Staff shall not, (except when necessary for the performance of the Contract) without prior Approval, use or disclose any Intellectual Property Rights in the IP Materials.

E8.2 The Contractor hereby assigns to the HSE, with full title guarantee, all Intellectual Property Rights which may subsist in the IP Materials prepared in accordance with clause E8.1(b). This assignment shall take effect on the date of the Contract or as a present assignment of future rights that will take effect immediately on the coming into existence of the Intellectual Property Rights produced by the Contractor. The Contractor shall execute all documentation necessary to execute this assignment.

E8.3 The Contractor shall waive or procure a waiver of any moral rights subsisting in copyright produced by the Contract or the performance of the Contract.

E8.4 The Contractor shall ensure that the third party owner of any Intellectual Property Rights that are or which may be used to perform the Contract grants to the HSE a non-exclusive licence or, if itself a licensee of those rights, shall grant to the HSE an authorised sub-licence, to use, reproduce, modify, develop and maintain the Intellectual Property Rights in the same. Such licence or sub-licence shall be non-exclusive, perpetual, royalty free and irrevocable and shall include the right for the HSE to sub-license, transfer, novate or assign to other Contracting Authorities, the Replacement Contractor or to any other third party supplying services to the HSE.

E8.5 The Contractor shall not infringe any Intellectual Property Rights of any third party in supplying the Services and the Contractor shall, during and after the Contract Period, indemnify and keep indemnified and hold the HSE and the Crown harmless from and against all actions, suits, claims, demands, losses, charges, damages, costs and expenses and other liabilities which the HSE or the Crown may suffer or incur as a result of or in connection with any breach of this clause, except where any such claim arises from:

(a) items or materials based upon designs supplied by the HSE; or

(b) the use of data supplied by the HSE which is not required to be verified by the Contractor under any provision of the Contract.

E8.6 The HSE shall notify the Contractor in writing of any claim or demand brought against the HSE for infringement or alleged infringement of any Intellectual Property Right in materials supplied or licensed by the Contractor.

E8.7 The Contractor shall at its own expense conduct all negotiations and any litigation arising in connection with any claim for breach of Intellectual Property Rights in materials supplied or licensed by the Contractor, provided always that the Contractor:

(a) shall consult the HSE on all substantive issues which arise during the conduct of such litigation and negotiations;

(b) shall take due and proper account of the interests of the HSE; and

(c) shall not settle or compromise any claim without the HSE's prior written consent (not to be unreasonably withheld or delayed).

E8.8 The HSE shall at the request of the Contractor afford to the Contractor all reasonable assistance for the purpose of contesting any claim or demand made or action brought against the HSE or the Contractor by a third party for infringement or alleged infringement of any third party Intellectual Property Rights in connection with the performance of the Contractor's obligations under the Contract and the Contractor shall indemnify the HSE for all costs and expenses (including, but not limited to, legal costs and disbursements) incurred in doing so. The Contractor shall not, however, be required to indemnify the HSE in relation to any costs and expenses incurred in relation

to or arising out of a claim, demand or action which relates to the matters in clause E8.5(a) or E8.5(b).

E8.9 The HSE shall not make any admissions which may be prejudicial to the defence or settlement of any claim, demand or action for infringement or alleged infringement of any Intellectual Property Right by the HSE or the Contractor in connection with the performance of its obligations under the Contract.

E8.10 If a claim, demand or action for infringement or alleged infringement of any Intellectual Property Right is made in connection with the Contract or in the reasonable opinion of the Contractor is likely to be made, the Contractor shall notify the HSE and, at its own expense and subject to the consent of the HSE (not to be unreasonably withheld or delayed), use its best endeavours to:

(a) modify any or all of the Services without reducing the performance or functionality of the same, or substitute alternative Services of equivalent performance and functionality, so as to avoid the infringement or the alleged infringement, provided that the provisions herein shall apply mutates mutandis to such modified Services or to the substitute Services; or

(b) procure a licence to use and supply the Services, which are the subject of the alleged infringement, on terms which are acceptable to the HSE,

and in the event that the Contractor is unable to comply with clauses E8.7(a) or E8.7(b) within [20] Working Days of receipt of the Contractor's notification the HSE may terminate the Contract with immediate effect by notice in writing.

E8.11 The Contractor grants to the HSE a royalty-free, irrevocable and non-exclusive licence (with a right to sub-licence) to use any Intellectual Property Rights that the Contractor owned or developed prior to the Commencement Date and which the HSE reasonably requires in order exercise its rights and take the benefit of this Contract including the Services provided.

E9 Retention of Documentation and Right of Audit

E9.1 The Contractor shall keep secure and maintain until six years after the final payment of all sums due under the Contract, or such shorter period as may be agreed between HSE and the Contractor, full and accurate records of the Services, all expenditure reimbursed by the Contractor and all payments made by HSE.

E9.2 The Contractor shall:

(a) produce such records retained pursuant to Condition E9.1 as HSE may reasonably require;

(b) afford such facilities as HSE may reasonably require for its representatives to inspect the records retained pursuant to Condition E9.2 (a) Provided that the Contractor takes all reasonable steps to prevent this exception from applying, the right granted by this Condition E9.2 (b) shall not apply to the extent that the confidentiality of information relating to the Contractor's other clients would be jeopardised by such inspection; and

(c) provide such explanations of records produced pursuant to Condition E9.2 (a) or inspected pursuant to Condition E9.2 (b) as HSE may reasonably require.

E9.3 For the purpose of:

(a) the examination and certification of HSE's accounts; or

(b) any examination pursuant to Section 6(1) of the National Audit Act 1983 of the economy, efficiency and effectiveness with which HSE has used its resources,

the Comptroller and Auditor General may examine such records as he may reasonably require which are owned, held or otherwise within the control of the Contractor and may require the Contractor to provide such oral and/or written explanations as he considers necessary. This Condition does not constitute a

requirement or agreement for the examination, certification or inspection of the accounts of the Contractor under Section 6(3)(d) and (5) of the National Audit Act 1983.

E10 Security of Confidential Information

E10.1 In order to ensure that no unauthorised person gains access to any Confidential Information or any data obtained in the performance of the Contract, the Contractor undertakes to maintain security systems and procedures approved by HSE.

E10.2 The Contractor will immediately notify HSE of any breach of security in relation to Confidential Information and all data obtained in the performance of the Contract and will keep a record of such breaches. The Contractor will use its best endeavours to recover such Confidential Information or data however it may be recorded. This obligation is in addition to the Contractor's obligations under Condition E10.3. The Contractor will co-operate with HSE in any investigation that HSE considers necessary to undertake as a result of any breach of security in relation to Confidential Information or data.

E10.3 HSE may require the Contractor to alter any security systems and procedures at any time during the Contract Period at the Contractor's expense.

E11 Baseline Personnel Security Standard

E11.1 It shall be the Contractor's responsibility to ensure that all personnel engaged in the performance of this Contract shall have undergone pre-employment checks covering identity, the last three years employment history, nationality and immigration status and criminal record for unspent convictions. Such checks shall meet the requirements of HMG Baseline Personnel Security Standard.

E11.2 HSE reserves the right, at its sole discretion, to carry out audits and spot checks at any time during the Contract Period to satisfy itself that the checks have been carried out.

E12 GDPR Data Protection

E12.1 The Parties acknowledge that for the purposes of the Data Protection Legislation, the Customer is the Controller and the Contractor is the Processor unless otherwise specified in Schedule C. The only processing that the Processor is authorised to do is listed in Schedule A by the Controller and may not be determined by the Processor.

E12.2 The Processor shall notify the Controller immediately if it considers that any of the Controller's instructions infringe the Data Protection Legislation.

E12.3 The Processor shall provide all reasonable assistance to the Controller in the preparation of any Data Protection Impact Assessment prior to commencing any processing. Such assistance may, at the discretion of the Controller, include:

a) a systematic description of the envisaged processing operations and the purpose of the processing;

b) an assessment of the necessity and proportionality of the processing operations in relation to the Services;

c) an assessment of the risks to the rights and freedoms of Data Subjects; and

d) the measures envisaged to address the risks, including safeguards, security measures and mechanisms to ensure the protection of Personal Data.

E12.4 The Processor shall, in relation to any Personal Data processed in connection with its obligations under this Agreement:

a) process that Personal Data only in accordance with Schedule A, unless the Processor is required to do otherwise by Law. If it is so required the Processor

shall promptly notify the Controller before processing the Personal Data unless prohibited by Law;

b) ensure that it has in place Protective Measures, which are appropriate to protect against a Data Loss Event, which the Controller may reasonably reject (but failure to reject shall not amount to approval by the Controller of the adequacy of the Protective Measures), having taken account of the:

(i) nature of the data to be protected;
(ii) harm that might result from Data Loss Event;
(iii) state of technological development; and
(iv) cost of implementing any measures;

c) ensure that :

(i) the Processor Personnel do not process Personal Data except in accordance with this Agreement (and in particular Schedule A);
(ii) it takes all reasonable steps to ensure the reliability and integrity of any Processor Personnel who have access to the Personal Data and ensure that they:

(A) are aware of and comply with the Processor's duties under this clause;

(B) are subject to appropriate confidentiality undertakings with the Processor or any Sub-processor;

(C) are informed of the confidential nature of the Personal Data and do not publish, disclose or divulge any of the Personal Data to any third Party unless directed in writing to do so by the Controller or as otherwise permitted by this Agreement; and

(D) have undergone adequate training in the use, care, protection and handling of Personal Data; and

d) not transfer Personal Data outside of the EU unless the prior written consent of the Controller has been obtained and the following conditions are fulfilled:

(i) the Controller or the Processor has provided appropriate safeguards in relation to the transfer (whether in accordance with GDPR Article 46 or LED Article 37) as determined by the Controller;

(ii) the Data Subject has enforceable rights and effective legal remedies;

(iii) the Processor complies with its obligations under the Data Protection Legislation by providing an adequate level of protection to any Personal Data that is transferred (or, if it is not so bound, uses its best endeavours to assist the Controller in meeting its obligations); and

(iv) the Processor complies with any reasonable instructions notified to it in advance by the Controller with respect to the processing of the Personal Data;

e) at the written direction of the Controller, delete or return Personal Data (and any copies of it) to the Controller on termination of the Agreement unless the Processor is required by Law to retain the Personal Data.

E12.5 Subject to clause E12.6, the Processor shall notify the Controller immediately if it:

a) receives a Data Subject Access Request (or purported Data Subject Access Request);

b) receives a request to rectify, block or erase any Personal Data;

c) receives any other request, complaint or communication relating to either Party's obligations under the Data Protection Legislation;

d) receives any communication from the Information Commissioner or any other regulatory authority in connection with Personal Data processed under this Agreement;

e) receives a request from any third Party for disclosure or Personal Data where compliance with such request is required or purported to be required by Law; or

f) becomes aware of a Data Loss Event.

E12.6 The Processor's obligation to notify under clause E12.5 shall include the provision of further information to the Controller in phases, as details become available.

E12.7 Taking into account the nature of the processing, the Processor shall provide the Controller with full assistance in relation to either Party's obligations under Data Protection Legislation and any complaint, communication or request made under clause E12.5 (and insofar as possible within the timescales reasonably required by the Controller) including by promptly providing:

a) the Controller with full details and copies of the complaint, communication or request;

b) such assistance as is reasonably requested by the Controller to enable the Controller to comply with a Data Subject Access Request within the relevant timescales set out in the Data Protection Legislation;

c) the Controller, at its request with any Personal Data it holds in relation to a Data Subject;

d) assistance as requested by the Controller following any Data Loss Event;

e) assistance as requested by the Controller with respect to any request from the Information Commissioner's Office, or any consultation by the Controller with the Information Commissioner's Office.

E12.8 The Processor shall maintain complete and accurate records and information to demonstrate its compliance with this clause. This requirement does not apply where the Processor employs fewer than 250 staff, unless:

a) the Controller determines that the processing is not occasional;

b) the Controller determines the processing includes special categories of data as referred to in Article 9(1) of the GDPR or Personal Data relating to criminal convictions and offences referred to in Article 10 of the GDPR; and

c) the Controller determines that the processing is likely to result in a risk to the rights and freedoms of Data Subjects.

E12.9 The Processor shall allow for audits of its Data Processing activity by the Controller or the Controller's designated auditor.

E12.10 Each Party shall designate its own data protection office if required by the Data Protection Legislation.

E12.11 Before allowing any Sub-processor to process any Personal Data related to this Agreement, the Processor must:

a) notify the Controller in writing of the intended Sub-processor and processing;

b) obtain the written consent of the Controller;

c) enter into a written agreement with the Sub-processor which gives effect to the terms set out in this clause E12 such that they apply to the Sub-processor; and

d) provide the Controller with such information regarding the Sub-processor as the Controller may reasonable require.

E12.12 The Processor shall remain fully liable for all acts or omissions of any Sub- processor.

E12.13 The Controller may, at any time on not less than 30 Working Days' notice, revise this clause by replacing it with any applicable controller to processor standard clauses or similar terms forming part of an applicable certification scheme (which shall apply when incorporated by attachment to this Agreement).

E12.14 The Parties agree to take account of any guidance issued by the Information Commissioner's Office. The Controller may on not less than 30 Working Days' notice to the Processor amend this agreement to ensure that it complies with any guidance issued by the Information Commissioner's Office.

E12.15 Where the Parties include two or more Joint Controllers as identified in Schedule C in accordance with GDPR Article 26, those Parties shall enter into a Joint Controller Agreement based on the terms outlined in Schedule B in replacement of Clauses 1.1-1.14 for the Personal Data under Joint Control.

F CONTROL OF THE CONTRACT

F1 Assignment and Sub-contracting

F1.1 Except where F1.4 and 5 applies, the Contractor shall not assign, sub-contract or in any other way dispose of the Contract or any part of it without prior Approval. Sub-contracting any part of the Contract shall not relieve the Contractor of any of its obligations or duties under the Contract.

F1.2 The Contractor shall be responsible for the acts and omissions of its sub-contractors as though they are its own.

F1.3 Where HSE has consented to the placing of sub-contracts, copies of each sub-contract shall, at the request of HSE, be sent by the Contractor to HSE as soon as reasonably practicable.

F1.4 Notwithstanding Clause F1.1, the Contractor may assign to a third party ("**the Assignee**") the right to receive payment of the Contract Price or any part thereof due to the Contractor under this Contract (including any interest which HSE incurs under Clause C2.3). Any assignment under this clause F1.4 shall be subject to:

(a) reduction of any sums in respect of which HSE exercises its right of recovery under Clause C6 (Recovery of Sums Due);

(b) all related rights of HSE under the contact in relation to the recovery of sums due but unpaid; and

(c) HSE receiving notification under both Clauses F1.5 and F1.6.

F1.5 In the event that the Contractor assigns the right to receive the Contract price under Clause F1.4, the Contractor or the Assignee shall notify HSE in writing of the assignment and the date upon which the assignment becomes effective.

F1.6 The Contractor shall ensure that the Assignee notifies HSE of the Assignee's contact information and bank account details to which HSE shall make payment.

F1.7 The provisions of Clauses C2 and 3 (Invoicing and Payment and VAT) shall continue to apply in all other respects after the assignment and shall not be amended without the Approval of HSE.

F1.8 Subject to Clause F1.10, HSE may assign, novate or otherwise dispose of its rights and obligations under the Contract or any part thereof to:

(a) any Contracting Authority; or

(b) any other body established by the Crown or under statute in order substantially to perform any of the functions that had previously been performed by HSE; or

(c) any private sector body which substantially performs the functions of HSE,

provided that any such assignment, novation or other disposal shall not increase the burden of the Contractor's obligations under the Contract.

F1.9 Any change in the legal status of HSE such that it ceases to be a Contracting Authority shall not, subject to Clause F1.8, affect the validity of the Contract. In such circumstances, the Contract shall bind and inure to the benefit of any successor body to HSE.

F1.10 If the rights and obligations under the Contract are assigned, novated or otherwise disposed of pursuant to Clause F1.8 to a body which is not a Contracting Authority or if there is a change in the legal status of HSE such that it ceases to be a Contracting Authority (in the remainder of this clause both such bodies being referred to as the **"Transferee"**):

(a) the rights of termination of HSE in Clauses H1 (Termination on change of control and insolvency) and H2 (Termination on Default) shall be available to the Contractor in the event of respectively, the bankruptcy or insolvency, or Default of the Transferee; and

(b) the Transferee shall only be able to assign, novate or otherwise dispose of its rights and obligations under the Contract or any part thereof with the prior consent in writing of the Contractor.

F1.11 HSE may disclose to any Transferee any Confidential Information of the Contractor which relates to the performance of the Contractor's obligations under the Contract. In such circumstances HSE shall authorise the Transferee to use such Confidential Information only for purposes relating to the performance of the Contractor's obligations under the Contract and for no other purpose and shall take all reasonable steps to ensure that the Transferee gives a confidentiality undertaking in relation to such Confidential Information.

F1.12 Each Party shall at its own cost and expense carry out, or use all reasonable endeavours to ensure the carrying out of, whatever further actions (including the execution of further documents) the other Party reasonably requires from time to time for the purpose of giving that other party the full benefit of the provisions of the Contract.

F2 Waiver

F2.1 The failure of either party to enforce any provision of the Contract at any time shall not affect any future right to require complete performance by the other party, nor shall the waiver of any individual breach of any provision be taken or held to be a waiver of any subsequent breach of that or any other provision.

F3 Variation by HSE

F3.1 HSE reserves the right to alter the requirements of the Contract, as detailed in the specification, should this at any time become necessary. In any alteration of the contractual requirement, payment under the Contract shall be subject to fair and reasonable adjustment to be agreed between HSE and the Contractor in writing. Failing agreement the matter shall be determined by dispute resolution in accordance with Condition I.1 or by arbitration in accordance with the provisions of Condition I.2.

F4 Variation by the Contractor

F4.1 The Contractor may request to alter the requirements of the contract, as detailed in the specification, provided that reasonable prior written notice is given and, should an adjustment be required, it is accompanied by detailed proposals.

F4.2 Should there be a variation in the Contractor's services payment the Contract shall be subject to fair and reasonable adjustment to be agreed between HSE and the Contractor in writing. Failing agreement the matter shall be determined by dispute resolution in accordance with Condition I.1 or by arbitration in accordance with the provisions of Condition I.2

F5 Severability

F5.1 If any provision of the Contract is held invalid, illegal or unenforceable for any reason by any court of competent jurisdiction, such provision shall be severed and the remainder of the provisions of the Contract shall continue in full force and effect as if the Contract had been executed with the invalid, illegal or unenforceable provision eliminated.

F5.2 In the event of a holding of invalidity so fundamental as to prevent the accomplishment of the purpose of the Contract, the Parties shall immediately commence negotiations in good faith to remedy the invalidity.

F6 Remedies Cumulative

F6.1 Except as otherwise expressly provided by the Contract, all remedies available to either Party for breach of this Contract are cumulative and may be exercised concurrently or separately, and the exercise of any one remedy shall not be deemed an election of such remedy to the exclusion of other remedies.

G <u>LIABILITIES</u>

G1 Indemnity and Insurance

G1.1 Neither Party excludes or limits liability to the other Party for:

(a) death or personal injury caused by its negligence; or

(b) fraud; or

(c) fraudulent misrepresentation; or

(d) any breach of any obligations implied by Section 2 of the Supply of Goods and Services Act 1982.

(e) any breach of its obligations under the General Data Protection Regulation (Regulation (EU) 2016/679) (GDPR) and the Data Protection Act (DPA) 2018.

G1.2 Subject to Clause G1.3, the Contractor shall indemnify HSE against all legally enforceable claims, proceedings, and actions, or reasonable and mitigated damages, costs, expenses and any other liabilities which may arise out of, or in consequence of, the supply, or the late or purported supply, of the Services or the negligent performance or non-performance by the Contractor of its obligations under the Contract, including loss of or damage to property, financial loss arising from any advice given or omitted to be given by the Contractor, or any other loss which is caused directly by any

negligent act or omission of the Contractor, provided that such loss are reasonably foreseeable and mitigated. Notwithstanding any other term of this Contract the total liability of the Contractor to all parties under or in connection with this Contract whether in contract (including by way of indemnity), tort (including negligence), for breach of statutory duty or otherwise shall be limited to £1,000,000. Within this limit an aggregate limit of £250,000 shall apply in relation to claims arising out of or in connection with the presence of asbestos.

G1.3 The Contractor shall not be responsible for any injury, loss, damage, cost or expense if and to the extent that it is caused by the negligence or wilful misconduct of HSE or by breach by HSE of its obligations under the Contract.

G1.4 The Contractor shall not exclude liability for additional operational, administrative costs and/or expenses or wasted expenditure resulting from the direct Default of the Contractor.

G1.5 The Contractor shall effect and maintain with a reputable insurance company a policy or policies of insurance providing an adequate level of cover in respect of all risks which may be incurred by the Contractor, arising out of the Contractor's performance of its obligations under the Contract, including death or personal injury, loss of or damage to property or any other loss. Such policies shall include cover in respect of any financial loss arising from any advice given or omitted to be given by the Contractor. Such insurance shall be maintained for the duration of the Contract Period and for a minimum of 6 (six) years following the expiration or earlier termination of the Contract.

G1.6 The Contractor shall hold employer's liability insurance in respect of Staff in accordance with any legal requirement from time to time in force.

G1.7 The Contractor shall give HSE, on request, copies of all insurance policies referred to in this clause or a broker's verification of insurance to demonstrate that the appropriate cover is in place.

G1.8 If, for whatever reason, the Contractor fails to give effect to and maintain the insurances required by the provisions of the Contract HSE may make alternative arrangements to protect its interests and may recover the costs of such arrangements from the Contractor.

G1.9 The provisions of any insurance or the amount of cover shall not relieve the Contractor of any liabilities under the Contract. It shall be the responsibility of the Contractor to determine the amount of insurance cover that will be adequate to enable the Contractor to satisfy any liability referred to in Clause G1.2.

G2 Professional Indemnity

G2.1 The Contractor shall hold and maintain professional indemnity insurance cover and shall ensure that all professional consultants involved in the provision of the Services hold and maintain appropriate cover. Such Insurance to be held by the Contractor or by any agent, sub-contractor or consultant involved in the provision of Services with an aggregated limit of indemnity of not less than £1,000,000. Such insurance shall be maintained for a minimum of 6 (six) years following the expiration or earlier termination of this Contract.

G3 Warranties and Representations

G3.1 The Contractor warrants and represents that:

(a) it has the full capacity and authority and all necessary consents (including, but not limited to, where its procedures so require, the consent of its parent company) to enter into and perform this Contract and that this Contract is executed by a duly authorised representative of the Contractor;

(b) it shall discharge its obligations hereunder with all due skill, care and diligence including but not limited to good industry practice and (without limiting the

generality of this Condition) in accordance with its own established internal procedures;

(c) all of its obligations pursuant to the Contract shall be performed and rendered by appropriately experienced, qualified and trained Staff with all due skill, care and diligence;

(d) in entering the Contract it has not committed any Fraud;

(e) as at the Commencement Date, all information contained in the Tender remains true, accurate and not misleading, save as may have been specifically disclosed in writing to the HSE prior to execution of the Contract;

(f) no claim is being asserted and no litigation, arbitration or administrative proceeding is presently in progress or, to the best of its knowledge and belief, pending or threatened against it or any of its assets which will or might have a material adverse effect on its ability to perform its obligations under the Contract;

(g) it is not subject to any contractual obligation, compliance with which is likely to have a material adverse effect on its ability to perform its obligations under the Contract;

(h) no proceedings or other steps have been taken and not discharged (nor, to the best of its knowledge, are threatened) for the winding up of the Contractor or for its dissolution or for the appointment of a receiver, administrative receiver, liquidator, manager, administrator or similar officer in relation to any of the Contractor's assets or revenue;

(i) it owns, has obtained or is able to obtain, valid licences for all Intellectual Property Rights that are necessary for the performance of its obligations under the Contract;

(j) in the three 3 years prior to the date of the Contract:

(i) it has conducted all financial accounting and reporting activities in compliance in all material respects with the generally accepted accounting principles that apply to it in any country where it files accounts;

(ii) it has been in full compliance with all applicable securities and tax laws and regulations in the jurisdiction in which it is established; and

(iii) it has not done or omitted to do anything which could have a material adverse effect on its assets, financial condition or position as an ongoing business concern or its ability to fulfil its obligations under the Contract.

H DEFAULT, DISRUPTION AND TERMINATION

H1 Termination on Insolvency and Change of Control

H1.1 The HSE may terminate the Contract with immediate effect by notice in writing where the Contractor is a company and in respect of the Contractor:

(a) a proposal is made for a voluntary arrangement within Part I of the Insolvency Act 1986 or of any other composition scheme or arrangement with, or assignment for the benefit of, its creditors; or

(b) a shareholders' meeting is convened for the purpose of considering a resolution that it be wound up or a resolution for its winding-up is passed (other than as part of, and exclusively for the purpose of, a bona fide reconstruction or amalgamation); or

(c) a petition is presented for its winding up (which is not dismissed within 14 days of its service) or an application is made for the appointment of a provisional liquidator or a creditors' meeting is convened pursuant to section 98 of the Insolvency Act 1986; or

(d) a receiver, administrative receiver or similar officer is appointed over the whole or any part of its business or assets; or

(e) an application order is made either for the appointment of an administrator or for an administration order, an administrator is appointed, or notice of intention to appoint an administrator is given; or

(f) it is or becomes insolvent within the meaning of section 123 of the Insolvency Act 1986; or

(g) being a "small company" within the meaning of section 247(3) of the Companies Act 1985, a moratorium comes into force pursuant to Schedule A1 of the Insolvency Act 1986; or

(h) any event similar to those listed in H1.1(a)-(g) occurs under the law of any other jurisdiction.

H1.2 The HSE may terminate the Contract with immediate effect by notice in writing where the Contractor is an individual and:

(a) an application for an interim order is made pursuant to sections 252-253 of the Insolvency Act 1986 or a proposal is made for any composition scheme or arrangement with, or assignment for the benefit of, the Contractor's creditors; or

(b) a petition is presented and not dismissed within 14 days or order made for the Contractor's bankruptcy; or

(c) a receiver, or similar officer is appointed over the whole or any part of the Contractor's assets or a person becomes entitled to appoint a receiver, or similar officer over the whole or any part of his assets; or

(d) the Contractor is unable to pay his debts or has no reasonable prospect of doing so, in either case within the meaning of section 268 of the Insolvency Act 1986; or

(e) a creditor or encumbrancer attaches or takes possession of, or a distress, execution, sequestration or other such process is levied or enforced on or sued against, the whole or any part of the Contractor's assets and such attachment or process is not discharged within 14 days; or

(f) he dies or is adjudged incapable of managing his affairs within the meaning of Part VII of the Mental Capacity Act 2005; or

(g) he suspends or ceases, or threatens to suspend or cease, to carry on all or a substantial part of his business.

H1.3 The Contractor shall notify the HSE immediately if the Contractor undergoes a change of control within the meaning of section 416 of the Income and Corporation Taxes Act 1988 (**"change of control"**). The HSE may terminate the Contract by notice in writing with immediate effect within six months of:

(a) being notified that a change of control has occurred; or

(b) where no notification has been made, the date that the HSE becomes aware of the change of control, but shall not be permitted to terminate where an Approval was granted prior to the change of control.

H2 Termination on Default

H2.1 Where the Services, or any portion of the Services, are not carried out within the time or times specified within the Contract, HSE shall have the option, without prejudice to any of its other rights or remedies, to terminate the Contract by written notice having immediate effect.

H2.2 Where the Services, or any portion of the Services, are not, in HSE's reasonable opinion, carried out in accordance with standard industry practices, HSE shall have the option, without prejudice to any of its other rights or remedies, to;

(a) require the Contractor, at his own expense, to re-perform the services to HSE's reasonable satisfaction;

(b) arrange for the Services to be performed by alternative means;

(c) terminate the Contract by written notice having immediate effect;

(d) require the Contractor, notwithstanding such termination, to co-operate in the transfer of the Services to which the termination relates to any alternative organisation under Condition H2.2 (b) of these Conditions in accordance with arrangements notified to the Contractor by HSE.

H2.3 Where HSE obtains all or any of the Services by alternative means they shall be able to recover from the Contractor the amount by which the aggregate of the cost of obtaining Services in this way exceeds the amount which would have been payable to the Contractor in respect of all the Services replaced if they had been carried out in accordance with the Contract.

H2.4 Where the Contract is terminated under clause H2 (Termination on Default), no further payments shall be payable by the HSE to the Contractor (for Services supplied by the Contractor prior to termination and in accordance with the Contract but where the payment has yet to be made by the HSE), until the HSE has established the final cost of making the other arrangements envisaged under this clause.

H2.5 In the event that through any Default of the Contractor, data transmitted or processed in connection with the Contract is either lost or sufficiently degraded as to be unusable, the Contractor shall be liable for the cost of reconstitution of that data and shall reimburse HSE in respect of any charge levied for its transmission and any other costs charged in connection with such Default.

H2.6 If HSE fails to pay the Contractor undisputed sums of money when due, the Contractor shall notify HSE in writing of such failure to pay. If HSE fails to pay such undisputed sums within 90 Working Days of the date of such written notice, the Contractor may terminate the Contract in writing with immediate effect, save that such right of termination shall not apply where the failure to pay is due to HSE exercising its rights under Clauses C6 (Recovery of Sums Due).

H3 Break

H3.1 In addition to its rights of termination under Condition H1, HSE shall be entitled to terminate the Contract by giving to the Contractor not less than thirty days notice in writing to that effect. Upon expiry of the notice the Contract shall be terminated without prejudice to the rights of the parties accrued to the date of termination.

H3.2 Upon such termination the Contractor shall have the right to claim from HSE reimbursement of all reasonable costs necessarily and properly incurred by him in relation to the orderly cessation of the Services, including any commitments, liabilities or expenditure which are reasonably incurred, and would represent an unavoidable loss by the Contractor by reason of the termination of the Contract. Such costs shall be agreed in writing between HSE and the Contractor prior to any commitment by HSE to reimburse the Contractor. For the avoidance of doubt HSE shall not indemnify the Contractor against loss of profit or any indirect or consequential loss. HSE shall not in any case be liable to pay under the provisions of this Condition any sum which, when taken together with any sums paid or due or becoming due to the Contractor under the Contract, shall exceed the total contract price.

H3.3 Where the Contract is terminated under Condition H3.1 HSE may, during the notice period:

(a) require the Contractor, where the Services have not been commenced, to refrain from commencing such Services or where the Services have been commenced, to cease work immediately;

(b) require the Contractor to complete in accordance with the Contract all or any of the Services, or any part or component thereof, which shall be paid at the

agreed contract price or, where no agreement exists, at a fair and reasonable price.

H4 Recovery upon Termination

H4.1 On the termination of the Contract for any reason, the Contractor shall:

(a) immediately return to the HSE all Confidential Information, Personal Data and IP Materials in its possession or in the possession or under the control of any permitted suppliers or sub-contractors, which was obtained or produced in the course of providing the Services;

(b) immediately deliver to the HSE all Property (including materials, documents, information and access keys) provided to the Contractor under clause B5. Such property shall be handed back in good working order (allowance shall be made for reasonable wear and tear);

(c) assist and co-operate with the HSE to ensure an orderly transition of the provision of the Services to the Replacement Contractor and/or the completion of any work in progress. The transfer shall be arranged so as to reduce to a minimum any interruption in the Services.

(d) promptly provide all information concerning the provision of the Services which may reasonably be requested by the HSE for the purposes of adequately understanding the manner in which the Services have been provided or for the purpose of allowing the HSE or the Replacement Contractor to conduct due diligence.

H4.2 If the Contractor fails to comply with clause H4.1 (a) and (b), the HSE may recover possession thereof and the Contractor grants a licence to the HSE or its appointed agents to enter (for the purposes of such recovery) any premises of the Contractor or its permitted suppliers or sub-contractors where any such items may be held.

H4.3 Where the end of the Contract Period arises due to the Contractor's Default, the Contractor shall provide all assistance under clause H4(c) and (d) free of charge. Otherwise, the HSE shall pay the Contractor's reasonable costs of providing the assistance and the Contractor shall take all reasonable steps to mitigate such costs.

H5 Force Majeure

H5.1 Neither HSE nor the Contractor shall be liable to the other by reason of any failure or delay in performing its obligation under the Contract which is due to Force Majeure, where there is no practical means available to the party concerned to avoid such failure or delay.

H5.2 If either HSE or the Contractor becomes aware of any circumstances of Force Majeure which give rise to any such failure or delay, or which appear likely to do so, that party shall promptly give notice of those circumstances as soon as practicable after becoming aware of them and shall inform the other party of the period for which it estimates that the failure or delay shall continue.

H5.3 For the purposes of this Condition, "Force Majeure" means any event or occurrence which is outside the control of the party concerned and which is not attributable to any act or failure to take preventative action by the party concerned, but shall not include any industrial action occurring within the Contractor's organisation or within any sub-contractor's organisation.

H5.4 Any failure or delay by the Contractor in performing its obligations under the Contract which results from any failure or delay by an agent, sub-contractor or supplier shall be regarded as Force Majeure only if that agent, sub-contractor or supplier is itself impeded in complying with its obligations to the Contractor by Force Majeure.

H5.5 Where Force Majeure occurs, the party concerned shall take all reasonable steps to minimise the failure or delay.

I DISPUTES AND RESOLUTION

I1 Dispute Resolution

II.1 The Parties shall attempt in good faith to negotiate a settlement of any dispute between them arising out of or in connection with the Contract.

II.2 If the dispute cannot be resolved by the Parties pursuant to Condition I1.1 the dispute may, by agreement between the Parties, be referred to mediation.

II.3 The performance of the services shall not be suspended, cease or be delayed by the reference of a dispute to mediation or adjudication and the Contractor shall fully comply with the requirements of the Contract at all times.

I1.4 The Parties shall endeavour to choose by agreement a neutral advisor or mediator ("the Mediator") or if they are unable to agree upon a Mediator within 14 days after a request by one party to the other, or if the Mediator is unable or unwilling to act, either party shall within 14 days from the date of the proposal to appoint a Mediator or within 14 days of notice to either party that the Mediator is unable or unwilling to act, apply to the Centre for Effective Dispute Resolution ("CEDR") to appoint a Mediator.

I1.5 The Parties shall meet the Mediator within 14 days of their appointment to agree procedures concerning the mediation negotiations and exchange of relevant information.

I1.6 Unless otherwise agreed, all negotiations connected with the dispute and any settlement shall be conducted in confidence and without prejudice to the rights of the parties in any future proceedings.

I1.7 If the parties reach agreement on the resolution of the dispute, the agreement shall be reduced in writing and be binding on the parties once it is signed by their duly authorised representatives.

I1.8 If the parties fail to reach agreement on the resolution of the dispute, either party may request the Mediator to provide a non-binding but informative opinion in writing. Such opinion shall be provided on a without prejudice basis and shall not be used in evidence in any proceedings relating to the Contract without the prior written consent of both parties.

I1.9 If the parties fail to reach agreement within 60 days of the Mediator being appointed, or such longer period as may be agreed by the parties, then any dispute or difference may be referred to the courts.

I2 Arbitration

I2.1 Any dispute as to the interpretation or application of the Contract other than a matter as to which the decision of HSE shall be final and conclusive and except as may be otherwise provided in the Contract shall be referred to the arbitration of two persons, one to be appointed by HSE and one by the Contractor, or their Umpire, in accordance with the provisions of the Arbitration Act 1950, 1975, 1979 and 1996 or any statutory modification or re-enactment thereof.

I2.2 Any costs incurred as a result of enforcing Condition I2.1 above shall be decided at the sole discretion of the agreed arbitrator. Such costs shall be in full and final settlement of all disputes, howsoever arising, whether current or in the future, between HSE and the Contractor.

I2.3 Where it is considered appropriate, subject to the agreement of both parties, alternative methods of dispute resolution shall be considered including adjudication and mediation.

I3 Governing Law

I3.1 This Contract shall be governed by and interpreted in accordance with English law and the Parties submit to the exclusive jurisdiction of the courts of England and Wales.

Annex 1

CONTACT LIST

HSE Contacts	Contractor Contacts
Contractual Queries	
Colin Butler Health & Safety Executive Procurement Unit Building 2.3 Redgrave Court Merton Road Bootle Merseyside L20 7HS Tel : 0203 028 3654 e-mail : colin.butler@hse.gov.uk	
Contract Managers / Technical Queries	
Gary Dobbin HSE Science and Research Centre Harpur Hill Buxton Derbyshire SK17 9JN Tel : 0203 028 1961 e-mail : gary.dobbin@hse.gov.uk	David Cormie Ove Arup & Partners Ltd 13 Fitzroy Street London W1T 4BQ Tel : 0207 755 4463 e-mail : david.cormie@arup.com

Annex 2

HSE UK TRAVEL AND SUBSISTENCE RATES

Car Mileage Rates (for using your own vehicle) – All engine types and sizes	
Up to 10,000 mile per financial year	45p per mile
Over 10,000 miles per financial year	25p per mile
NB: Your vehicle must be insured for Business Use	

Public Transport Fares

Second Class Rail travel, Air fares (within UK only), Bus fares etc will be payable at cost on production of receipts, provided that the most economical means of transport has been used.

SUBSISTENCE RATES

All receipts **must** be retained to support your claim.

Day Subsistence	
More than 5 hours and up to 10 hours	Actual costs up to £6.00
More than 10 hours and up to 12 hours	Actual costs up to £10.00
More than 12 hours	Actual costs up to £16.00

Night Subsistence

Booked via HSE Accommodation Booking Agency :

The 24 hour overnight subsistence allowance consists of 2 components :

Meal One	Actual costs up to £6.00
Meal Two	Actual costs up to £15.00

This is payable as a “24 hour” rate and amounts incurred over any individual component will not be reimbursed by HSE. The rates are agreed with HMRC to obtain dispensation from tax liability.

Booked making your own Commercial Arrangements

Actual cost of bed and breakfast up to a maximum of:	£93.00 per night in London or £70.00 per night elsewhere

Rev 01/08/2015