PHILIPS SURVEYORS

BUILDING SURVEYORS, DESIGNERS & CONSULTANTS

Ref: 2230/18/ REV 2021

Surveyor: Philip Wiltshire
MRICS MaPS

Issued: November 2021

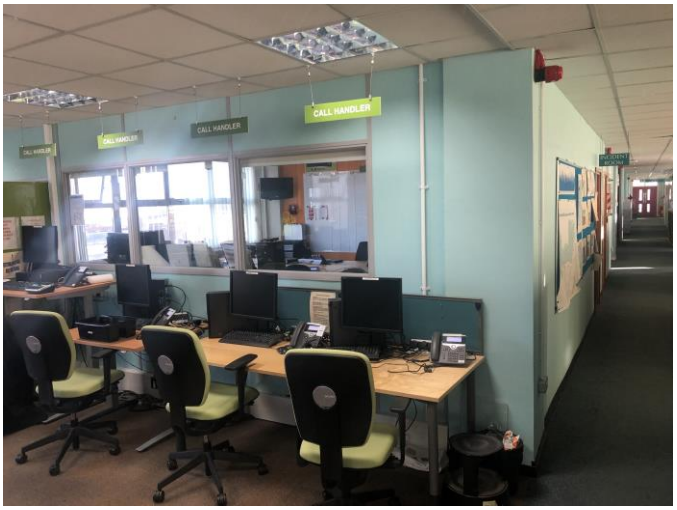
Rev: Tender Issue

SPECIFICATION FOR

5th FLOOR INCIDENT ROOM ALTERATIONS

AT

EA GUILDBOURNE HOUSE, CHATSWORTH ROAD, WORTHING BN11 1LD



On behalf of

Environment Agency

Guildbourne Centre

Chatsworth road

Worthing BN11 1LD

PHILIPS SURVEYORS LLP
THE OLD COACH HOUSE
78 LOWER STREET
PULBOROUGH
WEST SUSSEX RH20 2AA
TEL 01798 873222
EMAIL info@philips-surveyors.co.uk

RICS

Constructionline
A UK GOVERNMENT CERTIFICATION SERVICE

CHAS

INTRODUCTION

Project:	5th Floor – Alterations to incident room
Location:	EA Guildbourne House, Chatsworth road, Worthing, BN11 1LD
Access:	Strictly To be arranged in advance via the client David Bonner (Crises and Disaster management) with 48hrs notice. 07702 666765 David.bonner @environment-agency.gov.uk All tender queries to be referred to the lead consultant
Lead Consultant:	Philips Surveyors LLP c/o Philip Wiltshire MRICS MaPS The Old Coach House, 78 Lower Street, Pulborough, West Sussex RH20 2AZ
Telephone:	(01798) 873222
Mobile:	07889 922862
Contract:	JCT Minor Works with Contractor Design 2016

Contract Dates:	Tender Return	TBC
	Pre-Contract Meeting	TBC
	Commencement on Site	TBC
	Completion of Works	TBC
	Contract Period	4 weeks

Note:

1. A competent, qualified working full-time site foreman must be employed on site to oversee each sub-contractor.
2. The Contractor must employ the necessary labour, specialists, materials, plant and equipment to carry out the work to complete the work on time and be fully clear from site by the prescribed completion date.
3. All works to be undertaken out of normal hours, i.e. Monday-Friday 5.00pm to 7.00am or at weekends.

CONTENTS

SECTION A

General Preliminaries

A10 PROJECT PARTICULARS

110 THE PROJECT

- Name: 5th floor incident room and 3rd floor archive room
- Nature: Internal alterations
- Location: EA Guildbourne House, Chatsworth road, Worthing, BN11 1LD
- Contract Dates:

Tender Return	TBC
Pre Contract Meeting	TBA
Commencement on Site	TBA
Completion of Works	TBA
Contract Period	4 weeks

120 EMPLOYER (CLIENT)

- Name: Environment agency
- Address: Guildbourne House, Chatsworth Road, Worthing BN11 1LD
- Contact: - Vicky Evans ,07786821852 vicky.evans@environment-agency.gov.uk

130 PRINCIPAL CONTRACTOR

- Name: TBC
- Address:
- Tel:

140 DESIGNER/CONTRACT ADMINISTRATOR

- Title: Philips Surveyors LLP
- Name: Philip Wiltshire MRICS, IMaPS
- Address: The Old Coach House, 78 Lower Street, Pulborough, West Sussex, RH20 2AZ.
- Tel: 01798 873222
- Email: philw@philips-surveyors.co.uk

150 PRINCIPAL DESIGNER

- Title: Capita Binnies
- Name: Michael Nimmo
- Address: 60 High Street, Redhill, RH1 1SH
- Tel: 01737 856474
- Email: nimmom@binnies.com

200 ELECTRICAL ENGINEER

- Title: Philips Surveyors LLP
- Name: Graham Andrews
- Address: Old Crawley Rd, Faygate, Horsham RH12 4RU
- Telephone: 01293 851490
- Email: grahamandrews@mcaltd.co.uk

A11 TENDER AND CONTRACT DOCUMENTS

110 TENDER DRAWINGS

- The tender drawings are as listed within the appendices on the introduction page.

120 CONTRACT DRAWINGS

- Format: Developed tender drawings enhanced with Contractor Design Proposals and further design details.

160 PRECONSTRUCTION INFORMATION

- Format: Preconstruction information is described in these preliminaries in Section A34. It refers to information given elsewhere in the preliminaries and other tender documents.

A12 THE SITE/ EXISTING BUILDINGS

110 THE SITE
- Description: The site is on the 5th floor of a six storey office block occupied by the EA. The block forms part of the main Guildbourne centre which also has residential flats and mixed use retail units.

140 EXISTING MAINS AND SERVICES
- As existing on site. The Contractor must ascertain the presence and location of existing site services prior to undertaking any works that may disrupt hidden or enclosed services.

170 SITE INVESTIGATION
- Report: Based on previous works undertaken in the area, we are aware there is no asbestos within the areas to be worked upon. A copy of the asbestos register is included.

200 ACCESS TO THE SITE
- Description: Via Chatsworth road

210 PARKING
- Restrictions on parking of the Contractor's: To be agreed at the pre-contract meeting however for the purpose of tendering assume space is provided on site within the main car park area.

220 USE OF THE SITE
- General: Do not use the site for any purpose other than carrying out the Works.

230 SURROUNDING LAND/ BUILDING USES
- General: Residential

240 HEALTH AND SAFETY HAZARDS
- General: Build up of dust and debris, removal of walls and maintaining unsupported edges of plasterboard ceilings. Movement of waste material out of the building. . Disconnect and working with live services. See also PCIP for details

250 SITE VISIT
- Before tendering: Ascertain the nature of the site, access thereto and all local conditions and restrictions likely to affect the execution of the Works.

A13 DESCRIPTION OF THE WORKS

110 PREPARATORY WORK BY OTHERS
- Works: Asbestos survey

120 THE WORKS
- Description: Minor alterations to create an enlarged incident room on the 5th Floor; formation of single meeting room

130 WORK BY OTHERS CONCURRENT WITH THE CONTRACT
- Scope: See section A50.

A20 JCT AGREEMENT FOR MINOR BUILDING WORKS

360 JCT MINOR WORKS BUILDING CONTRACT

The Contract: JCT Minor Work with Contractors Design 2016; allow for all obligations, liabilities and services described therein against the headings below:

THE RECITALS

First

the Employer wishes to have the following work carried out (see A13/120) at (see A10/110) under the direction of the Architect/Contract Administrator referred to in Article 3;

Second
CONTRACTOR DESIGN PORTION
the Works include the design and management of the electrical and mechanical works and new folding screen with support (the Contractor's Design Portion')

Third
the Employer has had the following documents prepared which show and describe the works to be done:

the drawings numbered/listed in (see A11/110) ('the contract Drawings')

a specification ('the Contract Specification')

~~Works Schedules~~

other documents showing or describing or otherwise stating his requirements for the design and construction of the Contractors Design Portion ('the Employer's Requirements)

which for identification have been signed or initialled by or on behalf of each Party; those documents together with this agreement, the Conditions and, if applicable, a Schedule of Rates as referred to in the Forth Recital (collectively 'the Contract Document') as annexed to this Agreement;

Fourth
the Contractor has supplied the Employer with a copy of the priced Contract Specification ~~or Work Schedules or with a Schedule of Rates,~~

Fifth
for the purposes of the Construction Industry under the Finance Act 2004, the status of the Employer is, as at the Base Date, the stated in the Contract Particulars;

Sixth
for the purposes of the Construction (design and Management) Regulations 2015 (the 'CDM Regulations') the status of the project that comprises or includes the Works is stated in the Contract Particulars;

Seventh
where so stated in the Contract Particulars, this Contract is supplemented by Framework Agreement identified in those particulars;

Eighth
whether any of Supplemental Provisions 1 to 6 apply as stated in the Contract Particulars;

THE ARTICLES

1
CONTRACTORS OBLIGATIONS
The Contractor shall carry out and complete the Works in accordance with the Contract Documents.

2
CONTRACT SUM
The Employer will pay the Contractor at the times and in the manner specified in the Conditions the VAT-exclusive sum of TBA ('the contract Sum')

3
ARCHITECT / CONTRACT ADMINISTRATOR
Contract Administrator: See A10/140

4

PRINCIPAL DESIGNER
PRINCIPAL DESIGNER: See A10/150

5
PRINCIPAL CONTRACTOR
Principal Contractor: See A10/130

6
ADJUDICATION
This clause **does** apply

7
ARBITRATION
This clause **does not** apply

8
LEGAL PROCEEDINGS
Subject to Article 6 and (where it applies) to Article 7, the English courts shall have jurisdiction over any dispute or difference between the Parties which arises out of or in connection with this contract

CONTRACT PARTICULARS

Fifth Recital & Schedule 2 (paragraphs 1.1, 1.2, 1.5, 1.6, 2.1 and 2.2)
Base date: 1st January 2021

Fifth Recital & clause 4.2
CIS: The Employer IS a Contractor under the CIS.

Sixth Recital
CDM Regulations: The CDM regulations WILL apply.

Seventh Recital
Supplemental Framework Agreement: Does not apply

Eighth Recital & Schedule 3
Supplemental Provisions:

Collaborative Working	–	Applies	
Health & Safety		Applies	
Cost Savings & Improvements	–	Applies	
Sustainable & Environmental Provisions	–	Applies	
Performance Indicators & Monitoring	-	Applies	
Notification of Negotiations & Disputes	–	Applies	
Contractor Nominee		–	TBC
Employer		–	TBC

Article 7 & Schedule 1
Arbitration – DOES NOT apply

Clause 1.1
CDM PLANNING PERIOD
2 weeks

Clause 2.3
DATE FOR COMMENCEMENT OF THE WORKS
TBA

Clause 2.3
DATE FOR COMPLETION – TBA 4 weeks after commencement date

Clause 2.9
LIQUIDATED DAMAGES
At a rate of £1,000.00 per week

Clause 2.11
RECTIFICATION PERIOD
Period: 6 months from the date of Practical Completion

Clause 4.3
INTERIM PAYMENTS
Monthly

Clause 4.3
PAYMENTS DUE PRIOR TO PRACTICAL COMPLETION
97.5 %

Clause 4.3
PAYMENTS BECOMING DUE ON OR AFTER PRACTICAL COMPLETION
2.5 %

Clause 4.3 and 4.8
FLUCTUATIONS PROVISION
Not Applicable

Clause 4.3 and 4.8
PERCENTAGE ADDITION FOR SCHEDULE 2
N/A

Clause 4.5
PERCENTAGE OF THE TOTAL AMOUNT TO BE PAID TO THE CONTRACTOR
97.5 per cent

Clause 4.8.1
SUPPLY OF DOCUMENTATION
3 months from the date of Practical Completion

Clause 5.3
CONTRACTORS PUBLIC LIABILITY INSURANCE
Insurance cover (for any one occurrence or series of occurrences arising out of one event)
£5 million

Clauses 5.4A, 5.4B & 5.4C
INSURANCE OF THE WORKS - ALTERNATIVE PROVISIONS
~~5.4A – Works insurance by Contractor in Joint Names~~
5.4B – Works and existing structures insurance by Employer in Joint Names
~~5.4C – Existing structures insurance by Employer in own name~~

Clauses 5.4A & 5.4B
PERCENTAGE TO COVER PROFESSIONAL FEES
Addition: 15 per cent

Clause 5.4C
INSURANCE ARRANGEMENTS
Alternative provisions

Clause 7.2
ADJUDICATION

The Adjudicator is: Royal Institution of Chartered Surveyors
Nominator of Adjudicator: President / Vice president or Chairman or Vice Chairman of the RICS

Schedule 1 (Paragraph 2.1)
ARBITRATION
Not applicable

ATTESTATION

Note on Execution Execution under hand

A30 TENDERING/ SUBLETTING/ SUPPLY

MAIN CONTRACT TENDERING

170 ACCEPTANCE OF TENDER
- Acceptance: No guarantee is offered that any tender will be recommended for acceptance or be accepted, or that reasons for non acceptance will be given.
- Costs: No liability is accepted for any cost incurred in the preparation of any tender.

190 PERIOD OF VALIDITY
- Period: After submission or lodgement, keep tender open for consideration (unless previously withdrawn) for not less than 6 Weeks
- Date for possession/ commencement: See section A20.

PRICING/ SUBMISSION OF DOCUMENTS

220 PRICING OF PRELIMINARIES
- Charges: If the Contractor requires interim payments to include fixed and time related charges for specific items in the Preliminaries, those charges must be clearly shown against the items.

251 PRICED DOCUMENTS
- Alterations: Do not alter or qualify the priced documents without written consent. Tenders containing unauthorised alterations or qualifications may be rejected.
- Measurements: Where not stated ascertain from the drawings and/or site dimensions.
- Deemed included: Costs relating to items, which are not priced, will be deemed to have been included elsewhere in the tender.

310 TENDER
- General: Tenders must include for all work shown or described in the tender documents or implied thereon as a whole or clearly apparent as being necessary for the complete and proper execution of the Works.

350 PC AND PROVISIONAL SUMS
- Contractor's profit on PC Sums: Included in Preliminaries sections A51 and A52, not in the pricing document.
- Submit: A copy of sections A51-A55 (as applicable), priced to include profit, attendance and percentage adjustments

480 PROGRAMME
- Programme of work: 16 weeks or alternative as per form of tender. Prepare a summary showing the sequence and timing of the principal parts of the Works and periods for planning and design. Itemize any work which is excluded.
- Submit: The Contractor shall provide with his tender submission a programme based on the contract dates and it shall be the responsibility of the Contractor to perform against the programme. The Contractors programme submitted at tender stage shall indicate in detail key processes i.e. steelwork installation, ground floor alterations etc. and indicate which areas of the building he (the Contractor) requires to be cleared and/or surrendered, and for how long, in order to execute the works in that specific area.

490 INFORMATION RELEASE SCHEDULE

- Compatibility with programme: At the same time as submitting the proposed programme or summary, confirm that it is compatible with the Information Release Schedule.
- Alternative proposals: If any part of the programme is not compatible with the Schedule submit alternative proposals and reasons for varying the times for release of information.

521 DESIGN DOCUMENTS FOR WORK PACKAGES

- Design drawings and technical information
- Submit: Prepare and submit by Main Contractor for Sub-Contractor Packages as the works proceed.

530 SUBSTITUTE PRODUCTS

- Details: If products of different manufacture to those specified are proposed, submit details with the tender giving reasons for each proposed substitution. Substitutions, which have not been notified at tender stage, may not be considered.
- Compliance: Substitutions accepted will be subject to the verification requirements of clause A31/200.

540 QUALITY CONTROL RESOURCES

- Statement: Describe the organisation and resources to control the quality of the Works, including the work of subcontractors.

550 HEALTH AND SAFETY INFORMATION

- Content: Describe the organisation and resources to safeguard the health and safety of operatives, including those of subcontractors, and of any person whom the Works may affect.
- Include:
  - A copy of the Contractor's health and safety policy document, including risk assessment procedures.
  - Accident and sickness records for the past five years.
  - Records of previous Health and Safety Executive enforcement action.
  - Records of training and training policy.
  - The number and type of staff responsible for health and safety on this project with details of their qualifications and duties.

570 OUTLINE CONSTRUCTION PHASE HEALTH AND SAFETY PLAN

- Content: Submit the following information within one week of request:
  - Method statements on how risks from hazards identified in the pre-construction information and other hazards identified by the Contractor will be addressed.
  - Details of the management structure and responsibilities.
  - Arrangements for issuing health and safety directions.
  - Procedures for informing other Contractors and employees of health and safety hazards.
  - Selection procedures for ensuring competency of other Contractors, the self-employed and designers.
  - Procedures for communications between the project team, other Contractors and site operatives.
  - Arrangements for cooperation and coordination between Contractors.
  - Procedures for carrying out risk assessment and for managing and controlling the risk.
  - Emergency procedures including those for fire prevention and escape.
  - Arrangements for ensuring that all accidents, illness and dangerous occurrences are recorded.
  - Arrangements for welfare facilities.
  - Procedures for ensuring that all persons on site have received relevant health and safety information and training.
  - Arrangements for consulting with and taking the views of people on site.
  - Arrangements for preparing site rules and drawing them to the attention of those affected and ensuring their compliance.
  - Monitoring procedures to ensure compliance with site rules, selection and management procedures, health and safety standards and statutory requirements.
  - Review procedures to obtain feedback.

SUBLETTING/ SUPPLY

630 DOMESTIC SUBCONTRACTS

- General: Comply with the Construction Industry Board 'Code of Practice for the selection of subcontractors'.
- List: Provide details of all subcontractors and the work for which they will be responsible.
- Submit: with tender

A31 PROVISION, CONTENT AND USE OF DOCUMENTS

DEFINITIONS AND INTERPRETATIONS

110 DEFINITIONS
- Meaning: Terms, derived terms and synonyms used in the preliminaries/ general conditions and specification are as stated therein or in the appropriate British Standard or British Standard glossary.

120 COMMUNICATION
- Definition: Includes advise, inform, submit, give notice, instruct, agree, confirm, seek or obtain information, consent or instructions, or make arrangements.
- Format: In writing to the person named in clause A10/140 unless specified otherwise.
- Response: Do not proceed until response has been received.

130 PRODUCTS
- Definition: Materials, both manufactured and naturally occurring, and goods, including components, equipment and accessories, intended for the permanent incorporation in the Works.
- Includes: Goods, plant, materials, site materials and things for incorporation into the Works.

135 SITE EQUIPMENT
- Definition: All appliances or things of whatsoever nature required in or about the construction for completion of the Works but not materials or other things intended to form or forming part of the Permanent Works.
- Includes: Construction appliances, vehicles, consumables, tools, temporary works, scaffolding, cabins and other site facilities.

140 DRAWINGS
- Definitions: To BSRIA BG 6/2009 A design framework for building services. Design activities and drawing definitions.
- CAD data: In accordance with BS 1192.

160 TERMS USED IN SPECIFICATION
- Remove: Disconnect, dismantle as necessary and take out the designated products or work and associated accessories, fixings, supports, linings and bedding materials. Dispose of unwanted materials. Excludes taking out and disposing of associated pipework, wiring, ductwork or other services.
- Fix: Unload, handle, store, place and fasten in position including all labours and use of site equipment.
- Supply and fix: Includes all labour and site equipment for unloading, handling, storing and execution. All products to be supplied and fixed unless stated otherwise.
- Keep for reuse: Do not damage designated products or work. Clean off bedding and jointing materials. Stack neatly, adequately protect and store until required by the Employer/ Purchaser or for use in the Works as instructed.
- Make good: Execute local remedial work to designated work. Make secure, sound and neat. Excludes redecoration and/ or replacement.
- Replace: Supply and fix new products matching those removed. Execute work to match original new state of that removed.
- Repair: Execute remedial work to designated products. Make secure, sound and neat. Excludes redecoration and/ or replacement.
- Refix: Fix removed products.
- Ease: Adjust moving parts of designated products or work to achieve free movement and good fit in open and closed positions.
- Match existing: Provide products and work of the same appearance and features as the original, excluding ageing and weathering. Make joints between existing and new work as inconspicuous as possible.
- System: Equipment, accessories, controls, supports and ancillary items, including installation, necessary for that section of the work to function.

170 MANUFACTURER AND PRODUCT REFERENCE

- Definition: When used in this combination:
  - Manufacturer: The firm under whose name the particular product is marketed.
  - Product reference: The proprietary brand name and/ or reference by which the particular product is identified.
- Currency: References are to the particular product as specified in the manufacturer's technical literature current on the date of the invitation to tender.

200 SUBSTITUTION OF PRODUCTS
- Products: If an alternative product to that specified is proposed, obtain approval before ordering the product.
- Reasons: Submit reasons for the proposed substitution.
- Documentation: Submit relevant information, including:
  - manufacturer and product reference;
  - cost;
  - availability;
  - relevant standards;
  - performance;
  - function;
  - compatibility of accessories;
  - proposed revisions to drawings and specification;
  - compatibility with adjacent work;
  - appearance;
  - copy of warranty/ guarantee.
- Alterations to adjacent work: If needed, advise scope, nature and cost.
- Manufacturer's guarantees: If substitution is accepted, submit before ordering products.

220 REFERENCED DOCUMENTS
- Conflicts: Specification prevails over referenced documents.

230 EQUIVALENT PRODUCTS
- Inadvertent omission: Wherever products are specified by proprietary name the phrase 'or equivalent' is to be deemed included.

DOCUMENTS PROVIDED ON BEHALF OF EMPLOYER

410 ADDITIONAL COPIES OF THE DRAWINGS/ DOCUMENTS
- Additional copies: will be issued via email for Contractor to Print

440 DIMENSIONS
- Scaled dimensions: Do not rely on.

DOCUMENTS PROVIDED BY CONTRACTOR/ SUBCONTRACTORS/ SUPPLIERS

510 CHANGES/ AMENDMENTS TO EMPLOYER'S REQUIREMENTS
- Contractor's changes to Employer's Requirements: Support request for substitution or variation with all relevant information.
- Employer's amendments to Employer's Requirements: If considered to involve a variation, which has not already been acknowledged as a variation, notify without delay (maximum period 7 days), and do not proceed until instructed. Claims for extra cost, if made after the variation has been carried out, may not be allowed.
- Submit: in a timely manner

610 PRODUCTION INFORMATION
- Contractor/ Domestic subcontractor provide: All required design information to complete the works
- Submit:
  - For comment and make any necessary amendments.
  - Sufficient copies of final version for distribution to all affected parties.

620 AS BUILT DRAWINGS AND INFORMATION

- Contractor's designed work: Provide drawings/ information:
- Submit: At least two weeks before date for completion.

630 TECHNICAL LITERATURE
- Information: Keep on site for reference by all supervisory personnel:
  - Manufacturers' current literature relating to all products to be used in the Works.
  - Relevant British Standards.

640 MAINTENANCE INSTRUCTIONS AND GUARANTEES
- Components and equipment: Obtain or retain copies, register with manufacturer and hand over on or before completion of the Works.
- Emergency call out services: Provide telephone numbers for use after completion. Extent of cover: for all Services (plumbing, mechanical and electrical) installations

A32 MANAGEMENT OF THE WORKS

GENERALLY

110 SUPERVISION
- General: Accept responsibility for coordination, supervision and administration of the Works, including subcontracts.
- Coordination: Arrange and monitor a programme with each subcontractor, supplier, local authority and statutory undertaker, and obtain and supply information as necessary for coordination of the work.

120 INSURANCE
- Documentary evidence: Before starting work on site submit details, and/ or policies and receipts for the insurances required by the Conditions of Contract.

130 INSURANCE CLAIMS
- Notice: If any event occurs which may give rise to any claim or proceeding in respect of loss or damage to the Works or injury or damage to persons or property arising out of the Works, immediately give notice to the Employer, the person named in clause A10/140 and the Insurers.
- Failure to notify: Indemnify the Employer against any loss, which may be caused by failure to give such notice.

140 CLIMATIC CONDITIONS
- Information: Record accurately and retain:
  - Daily maximum and minimum air temperatures (including overnight).
  - Delays due to adverse weather, including description of the weather, types of work affected and number of hours lost.

150 OWNERSHIP
- Alteration/ clearance work: Materials arising become the property of the Contractor except where otherwise stated. Remove from site as work proceeds.

PROGRAMME/ PROGRESS

210 PROGRAMME
- Master programme: With the tender and revised as required before starting work on site, submit in an approved form a master programme for the Works, which must include details of:
  - Design, production information and proposals provided by the Contractor/ Subcontractors/ Suppliers, including inspection and checking (see section A31).
  - Planning and mobilization by the Contractor.
  - Earliest and latest start and finish dates for each activity and identification of all critical activities.
  - Running in, adjustment, commissioning and testing of all engineering services and installations
  - Work resulting from instructions issued in regard to the expenditure of provisional sums (see section A54)
  - Work by or on behalf of the Employer and concurrent with the Contract (see section A50). The nature and scope of which, the relationship with preceding and following work and any relevant limitations are suitably defined in the Contract Documents.

- Exclusions: Where and to the extent that the programme implications for work which is not so defined are impossible to assess, the Contractor should exclude it and confirm this when submitting the programme.
- Submit: with Tender and as amended with accurate references

215 REVISED PROGRAMME
- Format and content: Compatible with master programme.
- Revised programme interval: Described in the contract data part one.

230 SUBMISSION OF PROGRAMME
- Further information: Submission of the programme will not relieve the Contractor of the responsibility to advise of the need for further drawings or details or instructions in accordance with the Contract.

240 COMMENCEMENT OF WORK
- Notice: Before the proposed date for commencement of work on site give minimum notice of one week

250 MONITORING
- Progress: Record on a copy of the programme kept on site.
- Avoiding delays: If any circumstances arise which may affect the progress of the Works submit proposals or take other action as appropriate to minimize any delay and to recover any lost time.

255 NOTIFICATION OF COMPENSATION EVENT
- Content: Notwithstanding the Contractor's obligations under the Contract written notice must also be given of all other causes which apply concurrently.

261 SITE MEETINGS
- General: Site meetings will be held to review progress and other matters arising from administration of the Contract.
- Frequency: Weekly
- Location: On Site (Contractor provided facilities)
- Accommodation: Ensure availability at the time of such meetings.
- Attendees: Attend meetings. The Main Contractor is to take notes/ minutes and inform subcontractors and suppliers when their presence is required.

265 CONTRACTOR'S PROGRESS REPORT
- General: Submit a progress report at least 2 days before the site meeting.
- Content: Notwithstanding the Contractor's obligations under the Contract the report must include:
  - A progress statement by reference to the master programme for the Works.
  - Details of any matters materially affecting the regular progress of the Works.
  - Subcontractors' and suppliers' progress reports.
  - Any requirements for further drawings or details or instructions.

270 CONTRACTOR'S SITE MEETINGS
- General: Hold meetings with appropriate subcontractors and suppliers shortly before main site meetings to facilitate accurate reporting of progress.

280 PHOTOGRAPHS
- Number of locations: 10no
- Frequency of intervals: weekly
- Image format: electronic
- Number of images from each location: 1no

290 NOTICE OF COMPLETION
- Requirement: Give notice of the anticipated dates of completion of the whole or parts of the Works.
- Associated works: Ensure necessary access, services and facilities are complete.

310 EXTENSIONS OF TIME

- Notice: When a notice of the cause of any delay or likely delay in the progress of the Works is given under the conditions of contract, written notice must also be given of all other causes which apply concurrently.
- Details: As soon as possible submit:
  - Relevant particulars of the expected effects, if appropriate, related to the concurrent causes.
  - An estimate of the extent, if any, of the expected delay in the completion of the Works beyond the date for completion.
  - All other relevant information required.

CONTROL OF COST

410 CASH FLOW FORECAST

- Submission: Before starting work on site, submit a forecast showing the gross valuation of the Works at the date of each Interim Certificate throughout the Contract period. Base on the programme for the Works.

420 REMOVAL/ REPLACEMENT OF EXISTING WORK

- Extent and location: Agree before commencement.
- Execution: Carry out in ways that minimize the extent of work.

430 PROPOSED INSTRUCTIONS

- Estimates: If a proposed instruction requests an estimate of cost, submit without delay and in any case within seven days.
- Include:
  - A detailed breakdown of the cost, including any allowance for direct loss and expense.
  - Details of any additional resources required.
  - Details of any adjustments to be made to the programme for the Works.
  - Any other information as is reasonably necessary to fully assess the implications of issuing such an instruction.
- Inability to comply: Inform immediately if it is not possible to comply with any of the above requirements.

440 MEASUREMENT

- Covered work: Give notice before covering work required to be measured.

460 INTERIM VALUATIONS

- Applications: Include details of amounts requested under the Contract together with all necessary supporting information.
- Submission: At least seven days before established dates.

470 PRODUCTS NOT INCORPORATED INTO THE WORKS

- Ownership: At the time of each valuation, supply details of those products not incorporated into the Works which are subject to any reservation of title inconsistent with passing of property as required by the Conditions of Contract, together with their respective values.
- Evidence: When requested, provide evidence of freedom of reservation of title.

475 LISTED PRODUCTS STORED OFF SITE

- Evidence of Title: Submit reasonable proof that the property in items stored off site to be included in valuations is vested in the Contractor.
- Include for products purchased from a supplier:
  - a copy of the contract of sale;
  - a written statement from the supplier that any conditions of the sale relating to the passing of property have been fulfilled and the products are not subject to any encumbrance or charge.
- Include for products purchased from a supplier by a subcontractor or manufactured or assembled by any subcontractor:
  - Copies of the subcontract with the subcontractor and a written statement from the subcontractor that any conditions relating to the passing of property have been fulfilled.

480 LABOUR AND EQUIPMENT RETURNS

- Records: Provide for verification at the beginning of each week in respect of each of the previous seven days.

- Records must show:
  - The number and description of craftsmen, labourers and other persons directly or indirectly employed on or in connection with the Works or Services, including those employed by subcontractors.
  - The number, type and capacity of all mechanical, electrical and power-operated equipment employed in connection with the Works or Services

A33 QUALITY STANDARDS/ CONTROL

STANDARDS OF PRODUCTS AND EXECUTIONS

110 INCOMPLETE DOCUMENTATION
- General: Where and to the extent that products or work are not fully documented, they are to be:
  - Of a kind and standard appropriate to the nature and character of that part of the Works where they will be used.
  - Suitable for the purposes stated or reasonably to be inferred from the project documents.
  - Contract / Tender documents: Omissions or errors in description and/ or quantity shall not vitiate the Contract nor release the Contractor from any obligations or liabilities under the Contract. The Contractor must supplement the Tender/ Contract Documents to enable work package/ subcontract packages to be sought.

120 WORKMANSHIP SKILLS
- Operatives: Appropriately skilled and experienced for the type and quality of work.
- Registration: With Construction Skills Certification Scheme.
- Evidence: Operatives must produce evidence of skills/ qualifications when requested.

130 QUALITY OF PRODUCTS
- Generally: New (Proposals for recycled products may be considered).
- Supply of each product: From the same source or manufacturer.
- Whole quantity of each product required to complete the Works: Consistent in kind, size, quality and overall appearance.
- Tolerances: Where critical, measure a sufficient quantity to determine compliance.
- Deterioration: Prevent. Order in suitable quantities to a programme and use in appropriate sequence.

135 QUALITY OF EXECUTION
- Generally: Fix, apply, install or lay products securely, accurately, plumb, neatly and in alignment.
- Colour batching: Do not use different colour batches where they can be seen together.
- Dimensions: Check on-site dimensions.
- Finished work: Not defective, e.g. not damaged, disfigured, dirty, faulty, or out of tolerance.
- Location and fixing of products: Adjust joints open to view so they are even and regular.

140 COMPLIANCE
- Compliance with proprietary specifications: Retain on site evidence that the proprietary product specified has been supplied.

150 INSPECTIONS
- Products and executions: Inspection or any other action must not be taken as approval unless confirmed in writing referring to:
  - Date of inspection.
  - Part of the work inspected.
  - Respects or characteristics which are approved.
  - Extent and purpose of the approval.
  - Any associated conditions.

160 RELATED WORK
- Details: Provide all trades with necessary details of related types of work. Before starting each new type or section of work ensure previous related work is:
  - Appropriately complete.
  - In accordance with the project documents.

- To a suitable standard.
- In a suitable condition to receive the new work.

- Preparatory work: Ensure all necessary preparatory work has been carried out.

170 MANUFACTURER'S RECOMMENDATIONS/ INSTRUCTIONS

- General: Comply with manufacturer's printed recommendations and instructions current on the date of the Invitation to tender.
- Changes to recommendations or instructions: Submit details.
- Ancillary products and accessories: Use those supplied or recommended by main product manufacturer.
- Agrément certified products: Comply with limitations, recommendations and requirements of relevant valid certificates.

180 WATER FOR THE WORKS

- Mains supply: Clean and uncontaminated.
- Other: Do not use until:
  - Evidence of suitability is provided.
  - Tested to BS EN 1008 if instructed.

SAMPLES/ APPROVALS

210 SAMPLES

- Products or executions: Comply with all other specification requirements and in respect of the stated or implied characteristics either:
  - To an express approval.
  - To match a sample expressly approved as a standard for the purpose.
  - Submit: samples joinery, fixtures and fittings

220 APPROVAL OF PRODUCTS

- Submissions, samples, inspections and tests: Undertake or arrange to suit the Works programme.
- Approval: Relates to a sample of the product and not to the product as used in the Works. Do not confirm orders or use the product until approval of the sample has been obtained.
- Complying sample: Retain in good, clean condition on site. Remove when no longer required.

230 APPROVAL OF EXECUTION

- Submissions, samples, inspections and tests: Undertake or arrange to suit the Works programme.
- Approval: Relates to the stated characteristics of the sample. (If approval of the finished work as a whole is required this is specified separately). Do not conceal, or proceed with affected work until compliance with requirements is confirmed.
- Complying sample: Retain in good, clean condition on site. Remove when no longer required.

ACCURACY/ SETTING OUT GENERALLY

320 SETTING OUT

- General: Submit details of methods and equipment to be used in setting out the Works.
- Levels and dimensions: Check and record the results on a copy of drawings. Notify discrepancies and obtain instructions before proceeding.
- Inform: When complete and before commencing construction.

340 CRITICAL DIMENSIONS

- Critical dimensions: Set out and construct the Works to ensure compliance with the tolerances stated.

350 LEVELS OF STRUCTURAL FLOORS

- Maximum tolerances for designed levels to be:
  - Floors to be self-finished, and floors to receive sheet or tile finishes directly bedded in adhesive: +/- 5 mm.
  - Floors to receive dry board/ panel construction with little or no tolerance on thickness: +/- 5 mm.
  - Floors to receive mastic asphalt flooring/ underlays directly: +/- 10 mm.
  - Floors to receive mastic asphalt flooring/ underlays laid on mastic asphalt levelling coat(s): +/- 15 mm.
  - Floors to receive fully bonded screeds/ toppings/ beds: +/- 5 mm.
  - Floors to receive unbonded or floating screeds/ beds: +/- 5 mm.

SERVICES GENERALLY

410 SERVICES REGULATIONS
- New or existing services: Comply with the Byelaws or Regulations of the relevant Statutory Authority.

435 ELECTRICAL INSTALLATION CERTIFICATE
- Issue: When work is completed.
- Original certificate: To be lodged in the Home Information Pack.

440 GAS, OIL AND SOLID FUEL APPLIANCE INSTALLATION CERTIFICATE
- Before the completion date stated in the contract: Submit a certificate stating:
  - The address of the premises.
  - A brief description of the new installation and/ or work carried out to an existing installation.
  - Any special recommendations or instructions for the safe use and operation of appliances and flues.
  - The Contractor's name and address.
  - A statement that the installation complies with the appropriate safety, installation and use regulations.
  - The name, qualification and signature of the competent person responsible for checking compliance.
  - The date on which the installation was checked.
- Certificate location: H&S File

450 MECHANICAL AND ELECTRICAL SERVICES
- Final tests and commissioning: Carry out so that services are in full working order at completion of the Works.
- Building Regulations notice: Copy to be lodged in H&S File

SUPERVISION/ INSPECTION/ DEFECTIVE WORK

510 SUPERVISION
- General: In addition to the constant management and supervision of the Works provided by the Contractor's person in charge, all significant types of work must be under the close control of competent trade supervisors to ensure maintenance of satisfactory quality and progress.
- Replacement: Give maximum possible notice before changing person in charge or site agent.

520 COORDINATION OF ENGINEERING SERVICES
- Suitability: Site organisation staff must include one or more persons with appropriate knowledge and experience of mechanical and electrical engineering services to ensure compatibility between engineering and the Works generally.
- Evidence: Submit when requested CVs or other documentary evidence relating to the staff concerned.

560 TESTS AND INSPECTIONS
- Timing: Agree and record dates and times of tests and inspections to enable all affected parties to be represented.
- Confirmation: One working day prior to each such test or inspection. If sample or test is not ready, agree a new date and time.
- Records: Submit a copy of test certificates and retain copies on site.

610 PROPOSALS FOR RECTIFICATION OF DEFECTIVE PRODUCTS/ EXECUTIONS
- Proposals: Immediately any execution or product is known, or appears, to be not in accordance with the Contract, submit proposals for opening up, inspection, testing, making good, adjustment of the Contract Sum, or removal and re-execution.
- Acceptability: Such proposals may be unacceptable and contrary instructions may be issued.

WORK AT OR AFTER COMPLETION

710 WORK BEFORE COMPLETION
- General: Make good all damage consequent upon the Works.
  - Temporary markings, coverings and protective wrappings: Remove unless otherwise instructed.

- Cleaning: Clean the Works thoroughly inside and out, including all accessible ducts and voids. Remove all splashes, deposits, efflorescence, rubbish and surplus materials.
- Cleaning materials and methods: As recommended by manufacturers of products being cleaned, and must not damage or disfigure other materials or construction.
- COSHH dated data sheets: Obtain for all materials used for cleaning and ensure they are used only as recommended by their manufacturers.
- Minor faults: Touch up in newly painted work, carefully matching colour and brushing out edges. Repaint badly marked areas back to suitable breaks or junctions.
- Moving parts of new work: Adjust, ease and lubricate as necessary to ensure easy and efficient operation, including doors, windows, drawers, ironmongery, appliances, valves and controls.

720 SECURITY AT COMPLETION
- General: Leave the Works secure with, where appropriate, all accesses closed and locked.
- Keys: Account for and adequately label all keys and hand over to Employer with itemized schedule, retaining duplicate schedule signed by Employer as a receipt.

730 MAKING GOOD DEFECTS
- Remedial work: Arrange access with Philip Wiltshire
- Rectification: Give reasonable notice for access to the various parts of the Works.
- Completion: Notify when remedial works have been completed.

A34 SECURITY/ SAFETY/ PROTECTION

SECURITY, HEALTH AND SAFETY

110 PRECONSTRUCTION INFORMATION
- Location: Integral with the project Preliminaries, including but not restricted to the following sections:
  - Description of project: Sections A10 and A11.
  - Client's consideration and management requirements: Sections A12, A13 and A36.
  - Environmental restrictions and on-site risks: Section A12, A35 and A34.
  - Significant design and construction hazards: Section A34.
  - The Health and Safety File: Section A37.

130 PRODUCT HAZARDS
- Hazardous substances: Site personnel levels must not exceed occupational exposure standards and maximum exposure limits stated in the current version of HSE document EH40: Occupational Exposure Limits.
- Common hazards: Not listed. Control by good management and site practice.
- Significant hazards: Specified construction materials include the following:

140 CONSTRUCTION PHASE HEALTH AND SAFETY PLAN
- Submission: Present to the Employer/ Client no later than One Week Prior to commencement of the works
- Confirmation: Do not start construction work until this has been prepared; includes the procedures and arrangements required by CDM Regulations.
- Content: Develop the plan from and draw on the Outline Construction Phase Health and Safety Plan, clause A30/570, and the Pre-tender Health and Safety Plan/ Preconstruction information.

150 SECURITY
- Protection: Safeguard the site, the Works, products, materials, and any existing buildings affected by the Works from damage and theft.
- The site and compound will need full heras fencing and gates and works are protected as well as screened to prevent site access

- Access: Take all reasonable precautions to prevent unauthorized access to the site, the Works and adjoining property.

180 PASSES
- Controlled areas: No Access to areas outside the site and compound

- Authorised persons: Submit a list of the names of all persons requiring passes together with any other related information reasonably required.
- Return of passes: When requested or on completion of the work to which the pass relates.

190 OCCUPIER'S RULES AND REGULATIONS
- Compliance: includes access limitations, site control of waste and noisy works – to be confirmed at prestart meeting

210 EMPLOYER'S REPRESENTATIVES SITE VISITS
- Safety: Submit details in advance, to the Employer or the person identified in clause A10/140, of safety provisions and procedures (including those relating to materials, which may be deleterious), which will require their compliance when visiting the site.
- Protective clothing and/ or equipment: Provide and maintain on site for the Employer and the person stated in clause A10/140 and other visitors to the site.

PROTECT AGAINST THE FOLLOWING

330 NOISE CONTROL
- Standard: Comply generally with the recommendations of BS 5228-1, clause 9.3 to minimize noise levels during the execution of the Works.
- Equipment: Fit compressors, percussion tools and vehicles with effective silencers of a type recommended by manufacturers of the compressors, tools or vehicles.
- Restrictions: Do not use:
  - Pneumatic drills and other noisy appliances without consent
  - Radios or other audio equipment or permit employees to use in ways or at times that may cause nuisance.

340 POLLUTION
- Prevention: Protect the site, the Works and the general environment including the atmosphere, lands, streams and waterways against pollution.
- Contamination: If pollution occurs inform immediately, including to the appropriate Authorities and provide relevant information.

350 PESTICIDES
- Use: Not permitted.

360 NUISANCE
- Duty: Prevent nuisance from smoke, dust, rubbish, vermin and other causes.
- Surface water: Prevent hazardous build-up on site, in excavations and to surrounding areas and roads.

370 ASBESTOS CONTAINING MATERIALS
- Duty: Report immediately any suspected materials discovered during execution of the Works.
  - Do not disturb.
  - Agree methods for safe removal or encapsulation.

390 SMOKING ON SITE
- Smoking on site: Not permitted.

400 BURNING ON SITE
- Burning on site: Not permitted.

410 MOISTURE
- Wetness or dampness: Prevent, where this may cause damage to the Works.
- Drying out: Control humidity and the application of heat to prevent:
  - Blistering and failure of adhesion.
  - Damage due to trapped moisture.
  - Excessive movement.

420 INFECTED TIMBER

- Removal: Where instructed to remove timber affected by fungal/ insect attack from the building, minimize the risk of infecting other parts of the building.

430 WASTE
- Includes: Rubbish, debris, spoil, containers and surplus material.
- Minimize: Keep the site and Works clean and tidy.
- Remove: Frequently and dispose off site in a safe and competent manner:
  - Non-hazardous material: In a manner approved by the Waste Regulation Authority.
  - Hazardous material: As directed by the Waste Regulation Authority and in accordance with relevant regulations.
- Voids and cavities in the construction: Remove rubbish, dirt and residues before closing in.
- Waste transfer documentation: Retain on site.

PROTECT THE FOLLOWING

510 EXISTING SERVICES
- Confirmation: Notify all service authorities, statutory undertakers and/ or adjacent owners of proposed works not less than one week before commencing site operations.
- Identification: Before starting work, check and mark positions of mains/ services. Where positions are not shown on drawings obtain relevant details from service authorities, statutory undertakers or other owners.
- Work adjacent to services:
  - Comply with service authority's/ statutory undertaker's recommendations.
  - Adequately protect and prevent damage to services: Do not interfere with their operation without consent of service authorities/ statutory undertakers or other owners.
- Identifying services:
  - Below ground: Use signboards, giving type and depth;
  - Overhead: Use headroom markers.
- Damage to services: If any results from execution of the Works:
  - Immediately give notice and notify appropriate service authority/ statutory undertaker.
  - Make arrangements for the work to be made good without delay to the satisfaction of service authority/ statutory undertaker or other owner as appropriate.
  - Any measures taken to deal with an emergency will not affect the extent of the Contractor's liability.
- Marker tapes or protective covers: Replace, if disturbed during site operations, to service authority's/ statutory undertaker's recommendations.

520 ROADS AND FOOTPATHS
- Duty: Maintain roads and footpaths within and adjacent to the site and keep clear of mud and debris.
- Damage caused by site traffic or otherwise consequent upon the Works: Make good to the satisfaction of the Employer, Local Authority or other owner.

560 EXISTING FEATURES
- Protection: Prevent damage to existing buildings, fences, gates, walls, roads, paved areas and other site features, which are to remain in position during execution of the Works.

570 EXISTING WORK
- Protection: Prevent damage to existing property undergoing alteration or extension.
- Removal: Minimum amount necessary.
- Replacement work: To match existing.

630 EXISTING STRUCTURES
- Duty: Check proposed methods of work for effects on adjacent structures inside and outside the site boundary.
- Supports: During execution of the Works:
  - Provide and maintain all incidental shoring, strutting, needling and other supports as may be necessary to preserve stability of existing structures on the site or adjoining that may be endangered or affected by the Works.
  - Do not remove until new work is strong enough to support existing structure.
  - Prevent overstressing of completed work when removing supports.

- Adjacent structures: Monitor and immediately report excessive movement.
- Standard: Comply with BS 5975 and BS EN 12812.

640 MATERIALS FOR RECYCLING/ REUSE
- Duty: Sort and prevent damage to stated products or materials, clean off bedding and jointing materials and other contaminants.
- Storage: Stack neatly and protect until required by the Employer or for use in the Works as instructed.

A35 SPECIFIC LIMITATIONS ON METHOD/ SEQUENCE/ TIMING

110 SCOPE
- General: The limitations described in this section are supplementary to limitations described or implicit in information given in other sections or on the drawings.

120 DESIGN CONSTRAINTS
- Details: The contract makes provision for the design of all or part of the work by the Main Contractor, and expects the Contractor to facilitate and manage design which is included in subcontract packages and thus become CDP managed by the Main Contractor.

130 METHOD/ SEQUENCE OF WORK
- Specific Limitations: Include on the submitted Contractors programme all methods and sequence of works

140 SCAFFOLDING
- Standing scaffolding: Make available to subcontractors at all times.

170 WORKING HOURS
- See particular specification

A36 FACILITIES/ TEMPORARY WORK/ SERVICES

GENERALLY

110 SPOIL HEAPS, TEMPORARY WORKS AND SERVICES
- Location: Give notice of intended siting.
- Maintenance: Alter, adapt and move as necessary. Remove when no longer required and make good.

ACCOMMODATION

210 ROOM FOR MEETINGS
- Facilities: The Client will provide accommodation.

220 SITE BUILDINGS
- Use accommodation on site

260 SANITARY ACCOMMODATION
- Facilities: Use toilets to be agreed on site and 6th floor canteen.

SERVICES AND FACILITIES

410 LIGHTING
- Finishing work and inspection: Provide temporary lighting, the intensity and direction of which closely resembles that delivered by the permanent installation.

420 LIGHTING AND POWER
- Supply: Electricity from the Employer's mains may be used for the Works
- Continuity: The Employer will not be responsible for the consequences of failure or restriction in supply.

430 WATER
- Supply: The Employer's mains may be used for the Works
- Continuity: The Employer will not be responsible for the consequences of failure or restriction in supply.

440 MOBILE TELEPHONES
- Direct communication: As soon as practicable after the start on site:
  - provide the Contractor's person in charge with a mobile telephone.
  - pay all charges reasonably incurred.

470 E-MAIL AND INTERNET FACILITY
- General: Mobile Phone

480 PHOTOCOPIER
- General: No site access permitted.

550 THERMOMETERS
- General: Provide on site and maintain in accurate condition a maximum and minimum thermometer for measuring atmospheric shade temperature, in an approved location – not applicable.

570 PERSONAL PROTECTIVE EQUIPMENT
- General: Provide for the sole use of those acting on behalf of the Employer, in sizes to be specified:
  - Safety helmets to BS EN 397, neither damaged nor time expired. Number required: 5no
  - High visibility waistcoats to BS EN 471 Class 2. Number required: 5no
  - Disposable respirators to BS EN 149.FFP1S.
  - Eye protection to BS EN 166.
  - Ear protection - muffs to BS EN 352-1, plugs to BS EN 352-2.
  - Hand protection - to BS EN 388, 407, 420 or 511 as appropriate.

A37 OPERATION/ MAINTENANCE OF THE FINISHED WORKS

GENERALLY

110 THE BUILDING MANUAL
- Purpose: The Manual is to be a comprehensive information source and guide for owners and users of the completed Works. It should provide an overview of the main design principles and describe key components and systems to enable proper understanding, efficient and safe operation and maintenance.
- Scope:
  - Part 1: General: [Content as clause 120].
  - Part 2: Fabric: [Content as clause 130].
  - Part 3: Services: [Content as clause 140].
  - Part 4: The Health and Safety File: [prepared and supplied by the CDM Coordinator]. [Content as clause 150].
- Responsibility: The Building Manual is to be produced by the Main Contractor and must be complete no later than 2 months
- Compilation:
  - Prepare all information for Contractor designed or performance specified work including as-built drawings.
  - Obtain or prepare all other information to be included in the Manual.
- Reviewing the Manual: Submit a complete draft. Amend in the light of any comments and resubmit. Do not proceed with production of the final copies until authorized.
- Final copies of the Manual:
  - Number of copies: 2no
  - Format: hard copy and electronic in matching file format
- As-built drawings and schedules:
  - Number of copies: Within the H&S Files and electronic copies

120 CONTENT OF THE BUILDING MANUAL PART 1: GENERAL

- Content: Obtain and provide the following, including all relevant details not included in other parts of the manual:
- Index: list the constituent parts of the manual, together with their location in the document.
- The Works:
  - Description of the buildings and facilities.
  - Ownership and tenancy, where relevant.
  - Health and Safety information – other than that specifically required by the Construction (Design and Management) Regulations.
- The Contract:
  - Names and addresses and contact details of all significant consultants, Contractors, subcontractors, suppliers and manufacturers.
  - Overall design criteria.
  - Environmental performance requirements.
  - Relevant authorities, consents and approvals.
  - Third party certification, such as those made by "competent" persons in accordance with the Building Regulations.
- Operational requirements and constraints of a general nature:
  - Maintenance contracts and Contractors.
  - Fire safety strategy for the buildings and the site. Include drawings showing emergency escape and fire appliance routes, fire resisting doors, location of emergency alarm and fire fighting systems, services, shut off valves switches, etc.
  - Emergency procedures and contact details in case of emergency.
- Description and location of other key documents.

130 CONTENT OF THE BUILDING MANUAL PART 2: BUILDING FABRIC

- Content: Obtain and provide the following, including all relevant details not included in other parts of the manual:
- Detailed design criteria, including:
  - Floor and roof loadings.
  - Durability of individual components and elements.
  - Loading restrictions.
  - Insulation values.
  - Fire ratings.
  - Other relevant performance requirements.
  - Construction of the building:
  - A detailed description of methods and materials used.
  - As-built drawings recording the construction, together with an index.
  - Information and guidance concerning repair, renovation or demolition/ deconstruction.
- Periodic building maintenance guide chart.
- Inspection reports.
- Manufacturer's instructions index, including relevant COSHH data sheets and recommendations for cleaning, repair and maintenance of components.
- Fixtures, fittings and components schedule and index.
- Guarantees, warranties and maintenance agreements – obtain from manufacturers, suppliers and subcontractors.
- Test certificates and reports required in the specification or in accordance with legislation, including:
  - Air permeability.
  - Resistance to passage of sound.
  - Continuity of insulation.
  - Electricity and Gas safety.

140 CONTENT OF THE BUILDING MANUAL PART 3: BUILDING SERVICES

- Content: Obtain and provide the following, including all relevant details not included in other parts of the manual:
- Detailed design criteria and description of the systems, including:
  - Services capacity, loadings and restrictions.
  - Services instructions.

  - Services log sheets.
  - Manufacturers' instruction manuals and leaflets index.
  - Fixtures, fittings and component schedule index.
- Detailed description of methods and materials used.
- As-built drawings for each system recording the construction, together with an index, including:
  - Diagrammatic drawings indicating principal items of plant, equipment and fittings.
  - Record drawings showing overall installation.
  - Schedules of plant, equipment, valves, etc. describing location, design performance and unique identification cross referenced to the record drawings.
  - Identification of services – a legend for colour coded services.
- Product details, including for each item of plant and equipment:
  - Name, address and contact details of the manufacturer.
  - Catalogue number or reference.
  - Manufacturer's technical literature, including detailed operating and maintenance instructions.
  - Information and guidance concerning dismantling, repair, renovation or decommissioning.
- Operation: A description of the operation of each system, including:
  - Starting up, operation and shutting down.
  - Control sequences.
  - Procedures for seasonal changeover.
  - Procedures for diagnostics, troubleshooting and faultfinding.
- Guarantees, warranties and maintenance agreements – obtain from manufacturers, suppliers and subcontractors.
- Commissioning records and test certificates list for each item of plant, equipment, valves, etc. used in the installations – including:
  - Electrical circuit tests.
  - Corrosion tests.
  - Type tests.
  - Work tests.
  - Start and commissioning tests.
- Equipment settings: Schedules of fixed and variable equipment settings established during commissioning.
- Preventative maintenance: Recommendations for frequency and procedures to be adopted to ensure efficient operation of the systems.
- Lubrication: Schedules of all lubricated items.
- Consumables: A list of all consumable items and their source.
- Spares: A list of recommended spares to be kept in stock, being those items subject to wear and tear or deterioration and which may involve an extended delivery time when replacements are required.
- Emergency procedures for all systems, significant items of plant and equipment.
- Annual maintenance summary chart.

150 CONTENT OF THE BUILDING MANUAL PART 4: THE HEALTH AND SAFETY FILE

- Content: Obtain and provide the following, including all relevant details not included in other parts of the manual, including:
  - residual hazards and how they have been dealt with.
  - hazardous materials used.
  - information regarding the removal or dismantling of installed plant and equipment.
  - health and safety information about equipment provided for cleaning or maintaining the structure.
  - the nature, location and markings of significant services.
  - information and as-built drawings of the structure, its plant and equipment.

160 PRESENTATION OF BUILDING MANUAL

- Format: A4 size, plastics covered, loose leaf, four ring binders with hard covers, each indexed, divided and appropriately cover titled.
- Selected drawings needed to illustrate or locate items mentioned in the Manual: Where larger than A4, to be folded and accommodated in the binders so that they may be unfolded without being detached from the rings.
- As-built drawings: The main sets may form annexes to the Manual.

190 MAINTENANCE SERVICE

- Scope; provide a comprehensive maintenance service for the following items of plant and equipment: Include all planned preventative maintenance, as set out within the maintenance schedule and replacement of all consumable items

210 INFORMATION FOR COMMISSIONING OF SERVICES
- General: Submit relevant drawings and preliminary performance data to enable the building user's staff to familiarise themselves with the installation.
- Time of submission: At commencement of commissioning.

220 TRAINING
- Objective: Before Completion, explain and demonstrate to the Employer's maintenance staff the purpose, function and operation of the installations including items and procedures listed in the Building Manual.
- Operating time: Include a minimum of 2 days.

230 SPARE PARTS
- General: Before Completion submit a priced schedule of spare parts that the Contractor recommends should be obtained and kept in stock for maintenance of the services installations.
- Content: Include in the priced schedule for:
  - Manufacturers' current prices, including packaging and delivery to site.
  - Checking receipts, marking and numbering in accordance with the schedule of spare parts.
  - Referencing to the plant and equipment list in Part 3 of the Building Manual.
  - Painting, greasing, etc. and packing to prevent deterioration during storage.

250 TOOLS
- General: Provide tools and portable indicating instruments for the operation and maintenance of all services. plant and equipment (except any installed under Named Subcontracts) together with suitable means of identifying, storing and securing.
- Quantity: Two complete sets.
- Time of submission: At completion.

A40 CONTRACTOR'S GENERAL COST ITEMS: MANAGEMENT AND STAFF

110 MANAGEMENT AND STAFF
- Contractor to include for all Cost Significant Items

A41 CONTRACTOR'S GENERAL COST ITEMS: SITE ACCOMMODATION

110 SITE ACCOMMODATION
- Details: Site accommodation required or made/ not made available by the Employer: See section A36.
- Contractor to include for all Cost Significant Items

A42 CONTRACTOR'S GENERAL COST ITEMS: SERVICES AND FACILITIES

100 GENERALLY
For all items below 110 to 310 inclusive. Contractor to include for all Cost Significant Items.

110 POWER

120 LIGHTING

140 WATER DISTRIBUTION

150 TELEPHONE AND ADMINISTRATION

160 SAFETY, HEALTH AND WELFARE
- See clause A34/210.

170 STORAGE OF MATERIALS

180 RUBBISH DISPOSAL
- See clause A34/430.

190 CLEANING
- See clause A33/710.

200 DRYING OUT
- See clause A34/410.

210 PROTECTION OF WORK IN SECTIONS

220 SECURITY
- See clause A34/150.

230 MAINTAIN PUBLIC AND PRIVATE ROADS
- See clause A34/520.

240 SMALL PLANT AND TOOLS

250 OTHERS

301 GENERAL ATTENDANCE ON SUBCONTRACTORS
- See section A51.

310 ADDITIONAL SERVICES AND FACILITIES ITEMS

A43 CONTRACTOR'S GENERAL COST ITEMS: MECHANICAL PLANT

100 GENERALLY
For all items below 110 to 310 inclusive. Contractor to include for all Cost Significant Items.

130 PERSONNEL TRANSPORT

140 TRANSPORT

200 ADDITIONAL MECHANICAL PLANT

A44 CONTRACTOR'S GENERAL COST ITEMS: TEMPORARY WORKS

100 GENERALLY
For all items below 110 to 200 inclusive. Contractor to include for all Cost Significant Items.

110 TEMPORARY WORKS
- Details: Temporary works required or made/ not made available by the Employer

A50 WORK/ PRODUCTS BY/ ON BEHALF OF THE EMPLOYER

110 WORK BY/ ON BEHALF OF EMPLOYER
- Description of work: Installations of Specialist fixtures and fittings, equipment and the like which does not form part of the contract works
- Carried out by: The Employers directly employed operatives/ workforce
- Attendance: Allow for those reasonably required by the conditions of contract

120 PRODUCTS PROVIDED BY/ ON BEHALF OF EMPLOYER

- General: Details of such products are given in the work sections, for fixing by the Contractor. Use for no other purpose than the Works.
- Handling: Accept delivery, check against receipts and take into appropriate storage.
- Surplus products: Keep safe and obtain instructions.

SECTION B

Health & Safety

See PCIP by Binnies

PRE-CONSTRUCTION INFORMATION (SIMPLE PROJECTS) FACILITIES

DOCUMENT REF:

Guildbourne House – 5th Floor Incident Room

(To Follow from Principal Designer- Michael Nimmo – Capita Binnies)

GUILDBOURNE HOUSE

APRIL 2018

WHAT IS THIS DOCUMENT ABOUT?

Emergency Procedures for:

- Fire
- Bomb
- Biological and chemical threats
- Hostile visitors/protesters
- Gas
- Flood

WHO DOES THIS APPLY TO?

Anyone managing an occupied buildings or structures.

CONTACT FOR QUERIES AND FEEDBACK

- Sue Cooper Facilities Technical Team
- Please give anonymous feedback for this document.

EMERGENCY PLANS

Below are the best practice templates for the six hazards listed above. Each template has sections for adding local information; these need completion with local details and tables for completion with relevant details.

The template for any other hazards identified see 149_05 SD01

EMERGENCY PROCEDURES MANUAL

CONTENTS

SITE LOCATION

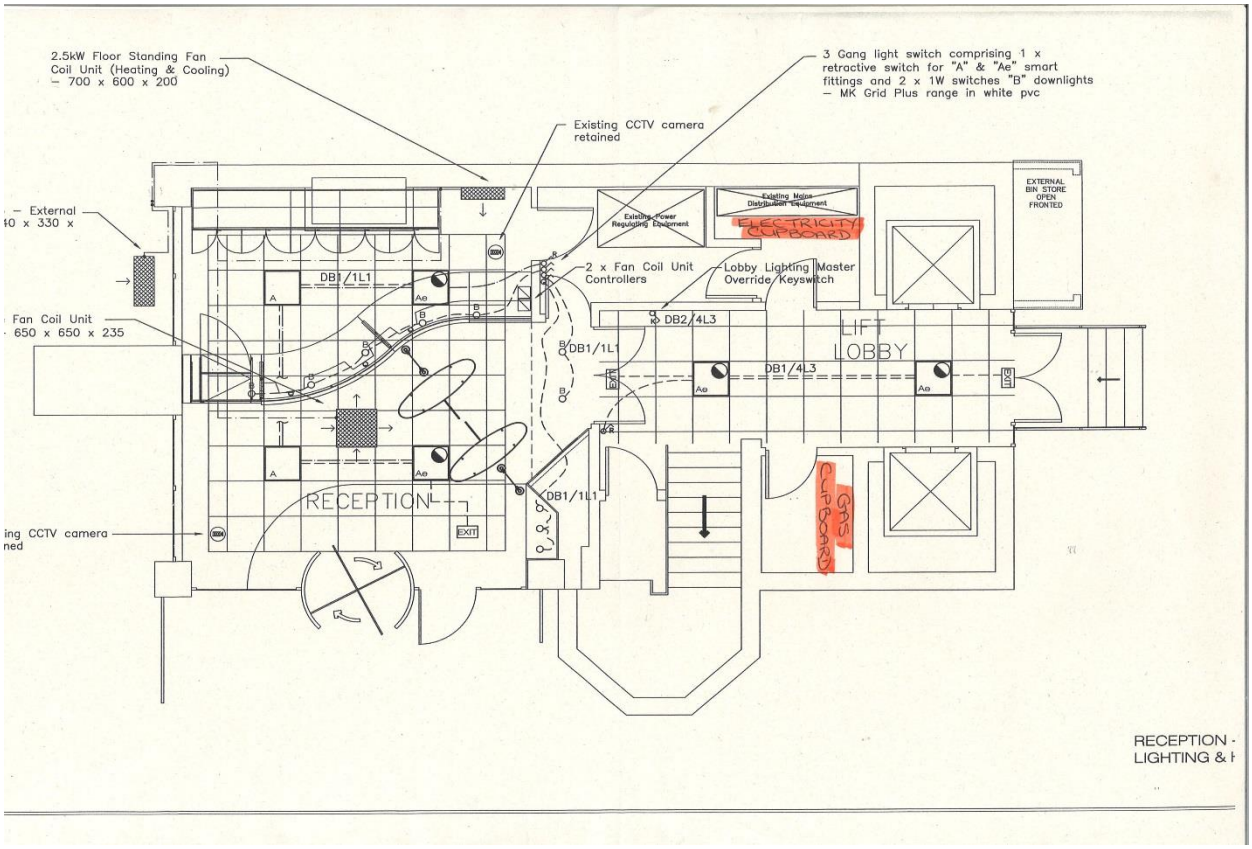
Guildbourne House, Chatsworth Road, Worthing, West Sussex BN11 1LD

SITE PLAN

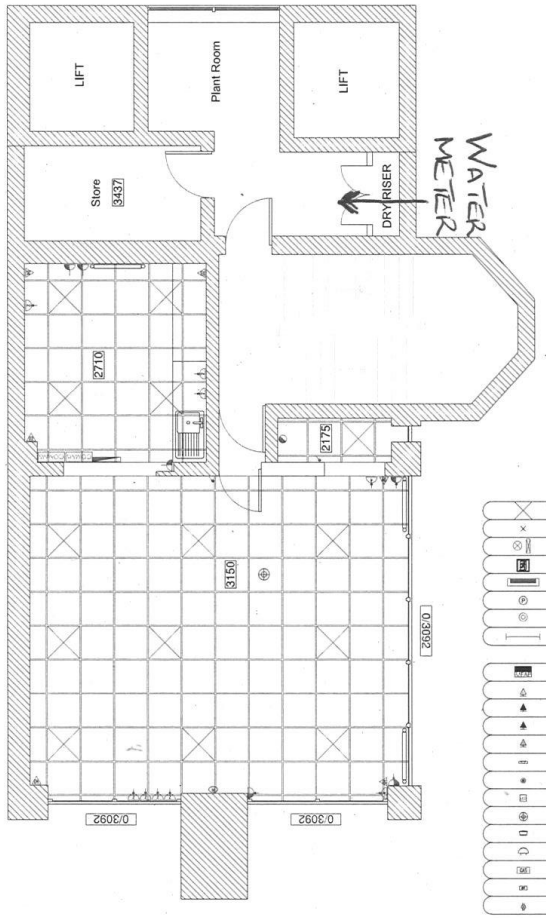
See plans below of isolation points plus location of nearest fire hydrant.

SITE OCCUPANCY

Office hours are 7am to 7pm. Approximately 300 staff work on site including up to 30 staff from Natural England. There is an Incident Room located on floor 5 which is sometimes open 24 hours.


2.5kW Floor Standing Fan Coil Unit (Heating & Cooling) – 700 x 600 x 200
3 Gang light switch comprising 1 x retractive switch for "A" & "Ae" smart fittings and 2 x 1W switches "B" downlights – MK Grid Plus range in white pvc
Existing CCTV camera retained
– External
40 x 330 x
Fan Coil Unit
650 x 650 x 235
ing CCTV camera
ned
DB1/1L1
2 x Fan Coil Unit Controllers
Lobby Lighting Master Override Keyswitch
Existing Power Regulating Equipment
Existing Mains Distribution Equipment
ELECTRICITY CUPBOARD
EXTERNAL BIN STORE OPEN FRONTED
DB2/4L3
DB1/1L1
DB1/4L3
LIFT LOBBY
RECEPTION
EXIT
DB1/1L1
GAS CUPBOARD
RECEPTION -
LIGHTING & H

GUILDBOURNE HOUSE 1ST FLOOR



- LIGHT SWITCH
- LIGHT PULL SWITCH
- DATA / COMMUNICATION (NO. GANG)
- SWITCHED SOCKET OUTLET (NO. GANG)
- SWITCHED FUSED SPUR
- FUSED SPUR
- ISOLATION SWITCH
- STOP / FILL / EQUATION SWITCH
- KEY SWITCH
- DOOR BELL
- DOOR BELL REPEATER
- TV COAXIAL
- AV COAXIAL
- DOOR RELEASE
- PROTECTED POWER SUPPLY
- DISTRIBUTION BOARD
- FAN SWITCH

- CEILING MOUNTED LUMINAIRE
- CEILING MOUNTED SPOT LIGHT
- BULK HEAD LIGHTS
- EMERGENCY EXIT LIGHT PIXEL
- RESTROOM STRIP LIGHT
- LIGHTING PIR
- EMERGENCY LUMINAIRE
- STRIP LUMINAIRE

- MAIN FIRE ALARM PANEL
- FOAM EXTINGUISHER
- H2O EXTINGUISHER
- POWDER EXTINGUISHER
- CO2 EXTINGUISHER
- FIRE ALARM PANEL
- BREAK GLASS
- SMOKE HEAD LED INDICATOR
- SMOKE HEAD
- FIRE ALARM SOUNDER
- FIRE ALARM BELL
- FIRE SUPRESSION GAS HEAD
- FIRE ALARM INTERFACE PANEL
- GAS EMERGENCY SHUT OFF

- CEILING MOUNTED PROJECTOR
- SECURITY PIR
- PUBLIC ADDRESS SYSTEM
- HOT AIR HAND DRIER
- RADIATOR
- COMMS CABINET
- TIME CLOCK
- TEMPERATURE THERMOSTAT (BUILDING MANAGEMENT SYSTEM)
- SECURITY CAMERA
- SHOWER
- MASONARY HATCHING
- STUD HATCHING
- INTERNAL GLAZING

- EMERGENCY DOOR RELEASE
- DISABLED ALARM PULL SWITCH
- DISABLED ALARM REPEATER
- BUZZER
- XENON / FLASHER
- CEILING HEIGHT
- WINDOW SILL / HEAD HEIGHT
- JUNCTION BOX (COMMS)
- PUBLIC ADDRESS VOLUME CONTROL
- PUBLIC ADDRESS VOICE SWITCH
- PANIC SWITCH
- KEY PAD

Notes
All details are indicative only. All dimensions to be checked on site by contractor prior to commencement of works. Any discrepancies in drawings to be reported to Philips Chartered Surveyors.

Rev.	Amendments	Date	Drw.

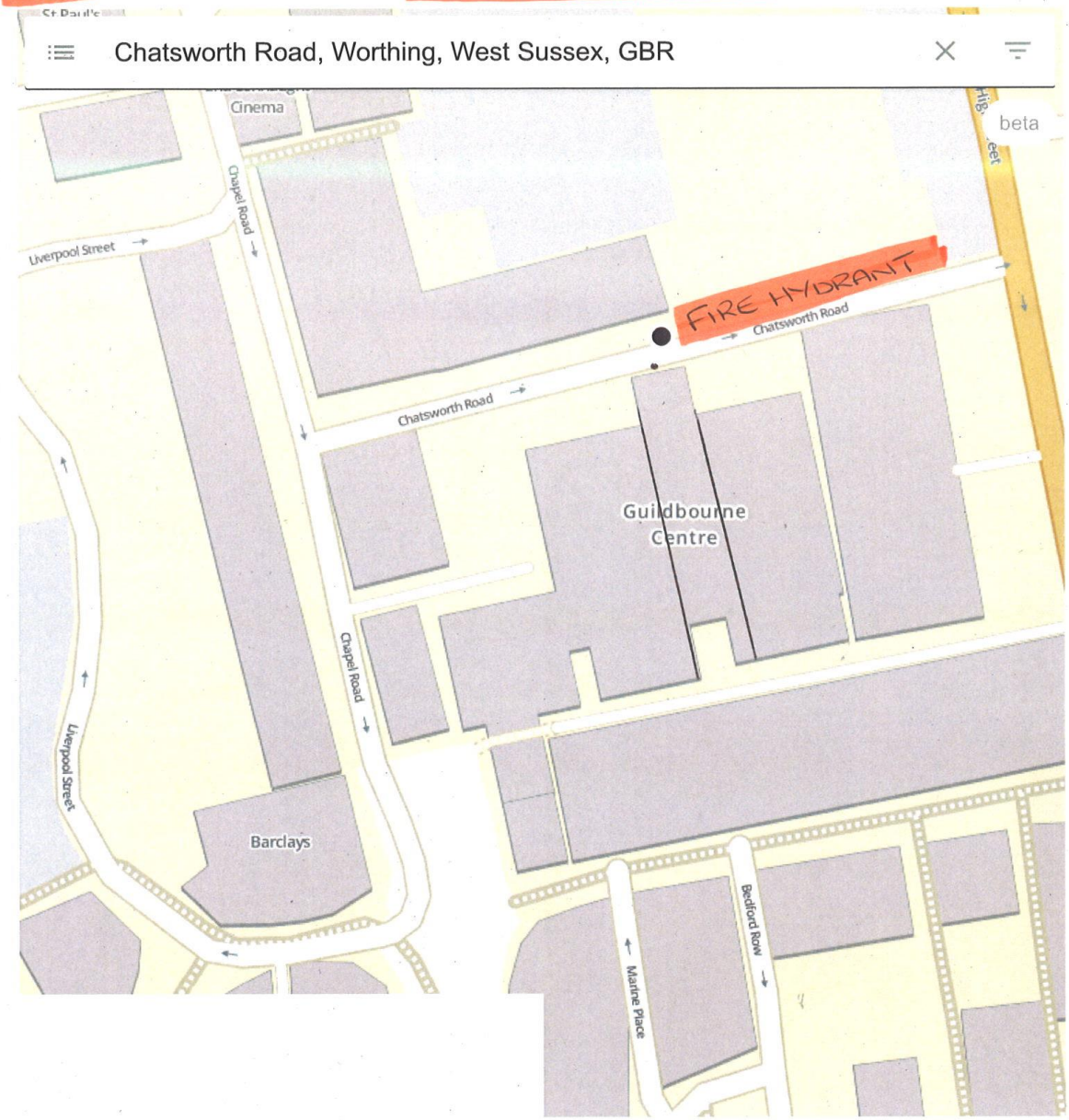
Philips
Chartered Surveyors
Building Surveyors, Designers and Consultants
The Old Coach House, 78 Lower Street,
Pulborough, West Sussex. RH20 2AZ
Tel: 01798 873222 Fax: 01798 873444
e-mail:info@philips-surveyors.co.uk

CLIENT:
THE ENVIRONMENT AGENCY
SOUTHERN PROCUREMENT
GUILDBOURNE HOUSE
CHATSWORTH ROAD
WORTHING
BN11 1LD

PROJECT:
CAD DRAWINGS SURVEY
EA REF: 21844

DRAWING TITLE:
GUILDBOURNE HOUSE
GENERAL ARRANGEMENT
1ST FLOOR

DRAWN:	JOB NO:	SCALE:
DPH	1660	1:50 @A2
CHECKED: MJS	DRAWING NO: GLB-1	REV: -
DATE: 19.08.08		



2 3

I12 3

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Response Coordinator

- Take the lead on practical aspects of an incident and coordinates the response to that incident. For example, contacting the emergency services, communicating information to the occupants of the building, evacuating the building where appropriate, informing the Duty Manager of the situation, collating information and disseminating this to the other responders and roles below.
- Wear an orange high visibility waistcoat for ease of identity.
- Liaise with and train Receptionist, Security Guard, Evacuation wardens.
- Check the status of designated areas with Emergency Evacuation Wardens. (CLEAR or UNCONFIRMED).
- In the case of an automatic alarm activation, the fire service generally will not attend unless informed that there is evidence of a fire (e.g. fire/smoke/heat). Follow the flowchart in appendix B and if there is evidence of a fire dial 999 and contact the Fire Service.
- Liaise with the Fire Service and/or Duty Manager about staff returning to the building. In the event of a substantial delay, inform the Duty Manager to allow them to make ongoing arrangements for staff welfare and work arrangements.
- If contaminated firewater or other contamination is likely to enter surface water drains, contact the Environment Agency Incident Control Centre (0800) 163 300 or their local Environment Management Duty Officer, to request emergency assistance.
- Provide a verbal situations report to the Duty Manager on site in line with BCM protocols.

Area or Site Duty Manager

- Make contact with the Response Coordinator and discuss any further response or checks of the building.
- Blue high visibility waistcoat, held in site grab bag.
- Take a lead on decisions about the staff e.g., how long they should wait outside, where they should go to wait, how they will be kept in touch with etc. Clearly communicate the arrangements to all staff.
- Raise helpdesk reports where necessary.

Evacuation Wardens

- Assist and support the Response Coordinator during any emergency event at site.
- Wear a yellow high visibility waistcoat for ease of identity
- Attend training sessions.
- Familiarise yourself with all the procedures in this pack and the assembly areas given.
- Ensure that everyone in the area you are responsible for is aware of the procedures and knows how to act in an emergency.
- Maintain communications between the Response Coordinator/Duty Manager and the people evacuated from your area.

RECEPTIONIST, SECURITY GUARD OR NOMINATED PERSON	• Take grab bag from cupboard to place of assembly. • Ensure reception area clear and secured. • Liaise with the Response Coordinator.
FIRST AIDERS	• Have a first aid kit easily available and first aid lanyards to be worn. • Liaise with Response Coordinator and Evacuation Wardens to identify casualties. • Remember the role of the first aider is to preserve life, protect and prevent further injury or harm – ensure the victim is in a safe place, administer first aid as necessary and hand over the casualty to the paramedics as soon as they arrive.
ALL STAFF	• Respond to alarms or follow instructions given by the Evacuation Wardens, Response Coordinator, or any member of the Emergency Services. • Never return to a building until the Duty Manager, Response Coordinator or Evacuation Warden tells you that it is safe to do so. • Read and understand the local arrangement. • Participate in all fire evacuations, drills and tests. • Understand where the assembly points and reporting places are.
VISITORS & CONTRACTORS	• The safety of visitors is the responsibility of their Environment Agency/Defra host. The host must ensure the visitor has received a safety briefing on the procedures to follow in the case of an emergency. • Contractors are the responsibility of the person organising the work. Emergency procedures and practical methods of contacting them in event of an emergency must be part of the site induction.

EMERGENCY CONTACT DETAILS

RESPONSE COORDINATOR

(ORANGE high visibility waistcoat)

NAME	Phone No
Vicky Evans (Facilities Operations Team Leader)	57265
Caroline Budd (Facilities Operations Officer 2)	57039
Ian Waters (Facilities Operations Officer 2)	57102

EMERGENCY EVACUATION WARDENS

(YELLOW high visibility waistcoat)

AREA	WARDEN	Phone No
Floor 2	Greg Smith	57086
Floor 2	Gareth Williams	57074
Floor 2	John Hutchinson	57132
Floor 3	Rob Boutle	57236
Floor 3	Kevin Bellevue de Sylva	57153
Floor 3	Steve White	57256
Floor 4	Raquel Landauer	57224
Floor 4	Pauline Morrow	57210
Floor 4	Jonathan Smeed	57136
Floor 4	Lee Spicer-Howard	57158
Floor 5	Jon Denman	57133
Floor 5	Jo Matthews	57124
Floor 5	Doug Lisle	49104
Floor 6	Helen Parrish	57094
Floor 6	James Barker	57106
Fire Officer	Vicky Evans	57265
Fire Officer Support	Andrew Barnes	57017

FIRST AIDERS

(GREEN high visibility waistcoat)

NAME	LOCATION	Phone No
Mark Emsley	Floor 2	57174
Steve White	Floor 3	57256
Anna Field	Floor 4	57025
Paul Reynolds	Floor 5	47501
Gavin Johnson	Floor 4 but mainly home based.	57075

OTHER USEFUL CONTACTS

Role/Company	Contact Name	TELEPHONE NUMBER
Facilities Officer/ Responsible Officer	Caroline Budd/Ian Waters	0203 02 58606 (Reception)
H&S Advisor	Paul Taylor	07770 852761
Area Duty Manager (Blue high visibility waistcoat)	Rota	0800 171 2237
Facilities Duty Manager	Rota	0800 085 8835
ICS	Incident Communication Service	0800 163 300 (EA staff only)
CIS Duty Manager	Rota – in hours	0800 389 9873
Gas	Emergency Gas	0800 111 999
Electricity	UK Power Networks	0800 316 3105
Water	Business Stream	0330 123 2000
Interserve	Helpdesk (Building code SN01001)	0333 207 4148

OUT OF HOURS CONTACTS

Role	Phone No
ICS	0800 163 300
FM National Duty Manager	0800 756 7783
FM Duty Manager	0800 085 8835
Area Duty Manager	0800 171 2237
CIS Duty Manager	0800 917 9651

FIRE

Date of issue	11 April 2017
Version No	**4**
Location	Guildbourne House, Chatsworth Road, Worthing, West Sussex BN11 1LD
Responsible Person	David Howarth (Facilities Manager)
Competent Person	Vicky Evans/Caroline Budd/Ian Waters

Introduction

A significant factor in multiple fatality fires in non-domestic premises is the incorrect response of building occupants. Therefore, there is a need for well-planned and rehearsed fire procedures. A properly considered procedure should be formulated for each site.

Under the Regulatory Reform (Fire Safety) Order 2005, owner/occupiers/premises managers are required to carry out/arrange for a fire risk assessment to be made of the premises. The risk assessment will generate information, which will guide the provision of firefighting equipment, fire detectors, alarm systems, emergency escape routes and suitable fire assembly points.

Management are required to inform all staff of these evacuation procedures and to ensure that these are followed.
Staff are required to follow them in the event of a fire.

Circulate the evacuation procedures to all staff on a regular basis. Display the General Instructions prominent locations across the site, such as adjacent to fire alarm call points, fire alarm panels, meeting rooms and Health and Safety notice boards.

Records of emergency evacuation drills, fire safety training, and inspections of means of escape, maintenance and testing records of firefighting equipment, emergency lighting and fire warning systems must be kept in the site fire logbook.

GENERAL INSTRUCTIONS

FIRE

ON DISCOVERING A FIRE	• Raise the alarm immediately by activating nearest 'break glass' call point • Leave the building via the nearest or safest fire exit and go to assembly point on grass verge at front of multi-storey car park in High Street. • Do not delay evacuation by trying to fight the fire.
WHEN YOU HEAR THE FIRE ALARM (CONTINUOUS RINGING)	DURING OFFICE HOURS • Evacuate the building immediately by the nearest fire exit or as directed by an Emergency Evacuation Warden who will be wearing a yellow high visibility jacket. If it is safe to do so, close windows and doors before leaving. • DO NOT EVACUATE VIA THE LIFTS • Do not stop to collect personal belongings or to lock away documents. Keep important personal belongings (e.g. car keys, wallet, purse, medication) with you at all times. • Visitors – If you are responsible for visitors accompany them to the appropriate assembly point. • Disabled persons should go to, or be escorted to, the assembly point in accordance with their PEEP. • Staff must follow instructions given by Response Coordinator or Evacuation Warden. • Remain at assembly point until Duty Manager or Response Coordinator gives further instruction.
ON DISCOVERING A FIRE	OUT OF HOURS/WEEKEND WORKING • If you discover a fire activate the nearest alarm and evacuate building, ensuring your immediate area is clear. Ring the emergency services.
ON HEARING THE FIRE ALARM (CONTINUOUS RINGING)	• Evacuate the building immediately and go to the normal assembly point. • The Fire Service generally will not attend automatic alarm activations. If there is clear evidence of a fire, ring 999 and inform them. If there is not clear evidence of a fire and the Response Coordinator or an Evacuation Warden are not present contact Facilities Management standby officer via the Incident Control Centre on 0800 163 300 for details of what to do.
REMEMBER	• Do NOT return to your desk to collect personal belongings. • Do NOT re-enter the building until told to do so. • Do NOT use the lifts. • Be prepared to evacuate the building by having keys, tickets, money etc. with you in case there is no further access to the building. ***The fire alarm is tested at 10.00am on Fridays.***

	There is no need to evacuate unless the alarm rings for more than a few seconds. ***Assembly point is the front of the multi-storey car park in High Street.***

Roles and Responsibilities

Response Coordinator

- Collect orange high visibility waistcoat and leave by the nearest exit.
- Check the status of designated areas with Emergency Evacuation Wardens. (CLEAR or UNCONFIRMED).
- The fire service generally will not attend unless there is evidence of a fire (e.g. fire/smoke/heat). Follow the flowchart in appendix B and if there is evidence of a fire dial 999 and contact the Fire Service.
- Liaise with the Fire Service and/or Duty Manager about staff returning to the building.
- In the event of a substantial delay, the Response Coordinator must liaise with the senior managers on site to allow them to make ongoing arrangements for staff welfare and work arrangements. It is important that the Duty manager clearly communicates the arrangements to all staff.
- If contaminated firewater is likely to enter surface water drains, the Response Coordinator should contact the Environment Agency Incident Control Centre 0800 163 300 or their local Environment Management Duty Officer, to request emergency assistance.
- Provide a verbal situations report to the Duty Manager on site in line with BCM protocols.

Area or Site Duty Manager

- Make contact with the Response Coordinator and discuss any further response or checks of the building.
- Take a lead on decisions about the staff e.g., how long they should wait outside, where they should go to wait, how they will be kept in touch with etc.

Emergency Evacuation Wardens

- Put on your yellow high visibility jacket.
- DO NOT PUT YOURSELF AT RISK. Do not tackle any fire however small. Your role is to assist evacuation and you cannot do this if you are fighting fires.
- Check your designated area and adjacent toilets, storage areas and lifts to ensure that staff have left your area of responsibility.
- Assist anybody experiencing difficulty leaving the building.
- After checking your designated area, report to the Response Coordinator in charge outside the building, who will be wearing an Orange high visibility jacket. You will need to tell him/her whether your area is:-
  - **CLEAR** (there is nobody left in your designated area)
    Or
  - **UNCONFIRMED** (there is, or possibly is, someone left in your designated area).
- When you have reported to the Response Coordinator, await further instruction from them regarding crowd control, security, possible checks of the building, liaison with emergency services, and provision of information to evacuated persons. Emergency Evacuation Wardens are not responsible for actions normally undertaken by the emergency services (e.g. directing traffic).
- Do not leave the assembly point unless instructed to by the Response Coordinator.

Reception/Security

- Collect grab bag.
- Check reception area and any other allocated area is clear.
- Go to assembly point and liaise with the Response Coordinator.

First Aiders

- On hearing the fire alarm, collect your nearest first aid kit and first aid lanyard.
- Leave by the nearest fire exit proceeding to your assembly point.
- Report to Response Coordinator to await instructions on casualties.
- Remember the role of the first aider is to preserve life, protect and prevent further injury or harm – ensure the victim is in a safe place, administer first aid as necessary and hand over the casualty to the paramedics as soon as they arrive.

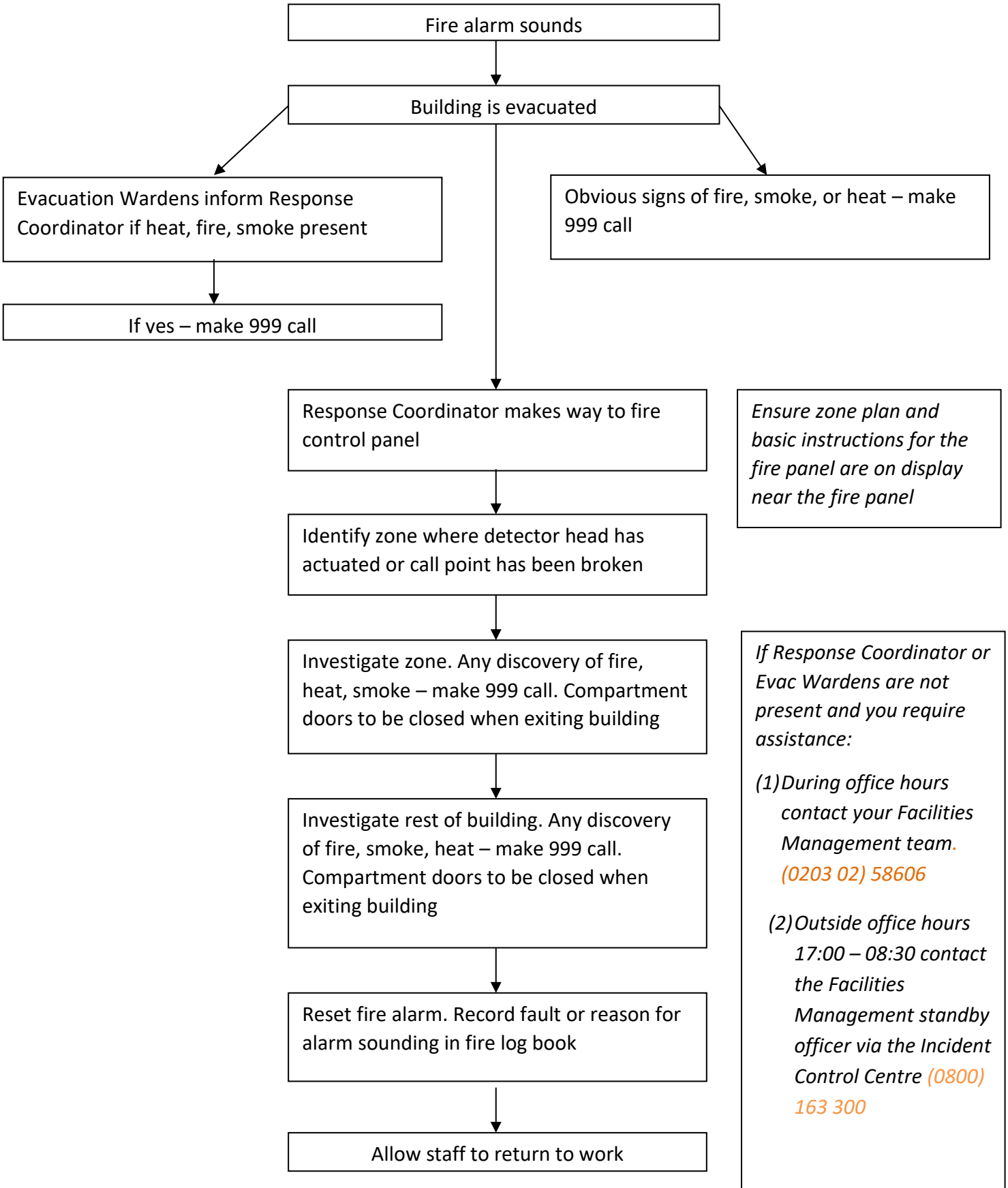
All Staff

- On hearing the fire alarm leave by the nearest available fire exit.
- Follow instructions as directed by the Evacuation Wardens, Response Coordinator, or any member of the Emergency Services.
- Never return to a building until the Duty Manager or Response Coordinator or Evacuation Warden tells you that it is safe to do so.
- Read and understand this local arrangement.
- Participate in all fire evacuations, drills and tests.
- Be aware of the fire assembly point and reporting point for each floor if specified.

Visitors and Contractors

- The safety of visitors is the responsibility of their Environment Agency host. The host must ensure the visitor has received a safety briefing of the procedures to follow in the case of an emergency. The advice will be to leave by the nearest exit identified by the Emergency Evacuation Wardens.

RESPONSE FLOWCHART



BOMB THREAT

Date of issue	11 April 2017
Version No	**2**
Location	Guildbourne House, Chatsworth Road, Worthing, West Sussex BN11 1LD
Response Co-ordinator	Vicky Evans/Caroline Budd/Ian Waters
Deputy Response Co-ordinator	ABC Rota 0800 066 5625

INTRODUCTION

Most security threats are hoaxes or false alarms. However, there is a legal requirement that organisations have arrangements in place for evacuation in the event of a bomb threat.

Terrorist or criminal incidents of this nature are extremely rare and the specific risk posed to the Environment Agency is very low. However, if there is a concern that there is a danger of an explosion sensible steps can be taken to minimise the possibility of harm. It is important to remain calm and be very clear about any information received and given.

To prepare for an event of this nature some actions can be taken now:

- Staff who may receive a call from someone making a threat need training. They need to understand the type of questions to ask and information to note. There is a government form for collecting useful facts and information and this is in SD03 anyone manning reception, press office desks, call centres should be familiar with this form and a copy should be easily available for them to use.
- Identify assembly points, these will probably be different from those used for fire evacuations, as they should not be in car parks and should be at least 500 meters from the building and possible suspected bomb. Having more than one easily identified assembly point will save time during an event and help with a speedy safe evacuation if required. Ensure that staff are aware of these and have a clear way of informing staff which assembly point they should use.
- Identify suitable places to move staff to within the building should it be necessary for people to remain inside in order to be away from any possible explosion and the danger of flying glass etc. The areas chosen must also have a means of escape in case that is necessary.
- Have a means of raising the alarm. It is not suitable to use the same alarm as for fire as using this will mean that people automatically evacuate the building in a direction that may place them in danger. These alarms may also trigger some explosive devises. In buildings that have Tannoy systems it may be possible to use these. At most, sites hand bells are used and this method should be adopted, where possible, to give consistency across the organisation.
- Ensure that Evacuation Wardens are aware of their role during an event of this nature. Train them by carrying out exercises either desktop or practice scenarios.

Circulate the emergency procedures to all staff on a regular basis. Display the General Instructions in prominent locations across the site, such as meeting rooms and Health and Safety notice boards.

THE FOLLOWING EMERGENCY PLAN IS FOR ACTIONS TO TAKE: -

- On receipt of a bomb threat that refers to Environment Agency Premises
- On receipt of a call about a bomb elsewhere but close to Environment Agency premises.
- On receiving instruction from the police or other response authority

GENERAL INSTRUCTIONS

BOMB ALERT

ON RECEIPT OF A PHONE CALL	• Receive the call calmly. • Try to make sure you get the details exactly. • If the caller is making a threat you should attempt to obtain as much information as possible about the 'bomb' (use SD03 to help) • Ring the police. • Inform Facilities Team Leader & Duty Manager/Area Manager, as soon as possible.
RESPONSE CO-ORDINATION	• On receipt of the alert, confirm location and type of threat • Contact Emergency Services and take their advice instructions. • Consult Duty Manager/Area Manager on appropriate action to take following the advice. Start evacuation or in building moves as appropriate. Or • If, the authority in charge order an evacuation inform the Duty Manager/Area Manager of the situation. • Inform other building tenants • If appropriate, call Evacuation wardens together and brief them. • Use hand bells or Tannoy system to signal an alert. • Evacuation Wardens sent to relay instructions to staff in their zones.
EMERGENCY EVACUATION WARDENS	• Put on your yellow high visibility jacket • Follow instructions given by the Response Co-ordinator • Ensure that everyone in the area you are responsible for follows these instructions. • Report to the Response Co-ordinator in charge who will be wearing a Orange high visibility jacket, You will need to tell him or her the status of your area: - • CLEAR (there is nobody left in the work area) • or • UNCONFIRMED (there is or maybe someone left in the work area). • Await further instructions from the Response Co-ordinator.
ALL STAFF ON HEARING HAND BELLS OR THE TANNOY	• DO NOT PANIC. • Follow instructions given by your Evacuation Wardens or Tannoy system promptly. • Unless instructed to do so, do not return to your desk to collect your personal belongings or to lock away confidential documents. • If instructed evacuate the building immediately by the nearest fire exit or as directed by an Emergency Evacuation Warden. Or

	• Assemble at a place of safety, as directed by an Emergency Evacuation Warden. • *The bomb evacuation assembly points could change due to the location of the threat – First possible meeting site could be the front of the multi-storey car park in High Street.* ***Always remain at your place of safety until either the Emergency Evacuation Warden or the Response Co-ordinator gives further instructions Or you are instructed by the Police to move to another location.***
REMEMBER	• **DO NOT** wait to conclude meetings, telephone calls, etc • **DO NOT** re-enter the building until told to do so by the Response Co-ordinator or Manager in charge. • **DO NOT** use the lifts • **DO NOT** leave site by car • Switch off all mobile phones • Remember where your assembly points are • Be prepared to evacuate the building by having keys, tickets, money etc. with you in case you cannot return to the building.

The information you need to collect if you receive a bomb threat.

The checklist is from the guidance published by National Counter Terrorism Security Office

Checklist

- Switch on the tape recorder (if available).
- Tell the caller which town/district you are answering from.
- Record the exact wording of the threat.

Advise on handling the call

Anyone receiving a bomb threat call must remember that their function is to convey as far as they are able, the exact message to the response co-ordinator, so that he/she may then decide what course of action to take. It is very important that if you receive such a call, you react in the following manner:

- Do not hang up, no matter how foul-mouthed or abusive the caller may be.
- Be calm and courteous - do not let the caller know he/she is alarming you.
- Do not interrupt the caller once he/she has started to relay a message or he/she may hang up.
- Write down the time and exactly what is said - all of it – and whether something is said more than once.
- Do not try to transfer the call to another extension, you may get cut off.
- Do not talk to anyone else whilst talking to the caller.
- Keep the caller talking for as long as possible in an effort to elicit as much information as possible. If necessary, pretend that the line is bad and ask for some of the information to be repeated.
- Whilst he/she is talking, listen carefully to the caller to get as many details about him/her as possible, for example, age, accent, whether nervous etc. Also, listen for background noises which may give a clue as to the location of the caller and whether the call is being made from an internal or external phone, mobile or a call box.

If you have the caller's confidence

- Attempt to get him/her to answer some questions, which may give you more details, see 'Ask these questions'
- Tell him/her the building is occupied and lives may be at risk – most callers only want to cause disruption, they do not want to harm people.

- If possible, have your checklist to hand whilst talking to the caller so that you can tick off details as he/she speaks. If this is not possible, fill in the details from memory as soon as the caller has rung off.
- Normally, advance warning of a bomb detonation will be given, so there is time to decide what action to take. If this is the case, as soon as the caller has rung off, contact the response co-ordinator.
- If the caller tells you that the bomb is in the building and due to go off imminently, you have no time to inform anyone else. The lives of people in the building are at risk. Activate the fire alarm and evacuate the building immediately.

Ask these questions

- Where is the bomb right now?
- When is it going to explode?
- What does it look like?
- What will cause it to explode?
- Did you place the bomb?
- Why?
- What is your name?
- What is your address?
- What is your telephone number?

Record

- The time the call was completed
- Where automatic number reveal equipment is available, record number

---

Inform

- The response co-ordinator
- Phone the Police using the emergency number.
- Record the time these were done.

Complete this part when the caller has hung up and the police/response co-ordinator have been informed.

- Time and date of call
- The length of the call.
- Number of the phone, at which call was received.

Information about the caller

Sex of caller Male Female

Nationality. Age.

Threat language

Well spoken	Irrational	Taped	Foul	Incoherent

Message read by threat maker

Caller's voice

Calm	Crying	Clearing throat	Angry	Nasal
Slurred	Excited	Stutter	Disguised	Slow
Lisp	Accent*	Rapid	Deep	Familiar
Laughter	Hoarse			

If the voice sounded familiar, whose did it sound like?

*Which accent?

Background sounds

Street noises	House noises	Animal noises	Clear	Office machinery
Crockery	Voices	Static	Booth	PA System
Music	Factory machinery		Motor	

Other (specify)

Remarks:

A printable version of the form Actions to take on Receipt of a bomb threat

POSTAL THREAT/SUSPECT PACKAGES OR BAGS

(Biological, Chemical or Explosive)

Date of issue	11 April 2017
Version No	**2**
Location	Guildbourne House, Chatsworth Road, Worthing, West Sussex BN11 1LD
Response Co-ordinator	Vicky Evans/Caroline Budd/Ian Waters
Deputy Response Co-ordinator	ABC Rota 0800 066 5625

INTRODUCTION

Terrorist or criminal incidents of this nature are extremely rare and the specific risk posed to The Environment Agency is low. However, if there is a concern that a suspect package has been received or a bag or package left in or near the building then sensible steps can be taken to minimise the possibility of harm.

Suspect packages could contain explosives, biological agents or chemicals and sharp objects in all cases treat with extreme care.

When opening post or on finding a bag or package follow these guidelines:

If you discover a suspect package or bag, do not touch or move it and report it immediately.

If you have any suspicions about an envelope, package or bag do not open it and follow the instructions below.

Look for anything unusual about the envelope or package (see general information 'what to look for')

Always open envelopes & packages in a way that is least likely to disturb the contents.

If you think, you have opened a package containing suspicious materials or explosives follow the instructions below and see 'if you are exposed'.

The following are actions to take: -

On receipt of or opening a suspicious package.

On discovery of a suspect package, bag etc, that might be left on or near the premises.

POST HANDLING INSTRUCTIONS

POSTAL THREATS/SUSPECT PACKAGES OR BAGS

PRECAUTIONS WHEN OPENING MAIL	• Look out for suspicious envelopes or packages (see below for some things that should trigger suspicion). • Open all mail with a letter opener or other method that is least likely to disturb contents. • Open packages/envelopes with a minimum amount of movement. • Do not blow into envelopes. • Do not shake or pour out contents. • Keep hands away from nose and mouth while opening mail. • Wash hands after handling mail.
WHAT TO LOOK FOR	**Some indicators of suspect mail:** • Unusual size or weight in proportion to size • Lopsided or oddly shaped envelope • Excessive tape or string • Envelope with powder or powder-like residue • Discolouration, crystals on surface or oily stains • Strange odours, some explosive have smells like almonds, sometimes fragrance may be used to mask other odours. • No return address • Postmark that does not match return address • Excessive postage • Handwritten, block-printed or poorly-typed address • Misspellings of common words • Incorrect titles • Title but no name • Addressed to individual no longer within organisation • Restrictive endorsements such as “Personal” or “Confidential” in combination with other indicators
ACTIONS TO TAKE ON DISCOVERING A SUSPICIOUS PACKAGE OR BAG	**DO NOT** investigate, move or interfere with the package or bag in any way. • Tell everyone in the immediate vicinity to leave. • Ring the police and inform your local response co-ordinator and Duty Manager/Area Manager. • leave the area/room **DO NOT** – take the package outside **DO NOT** – take it to another person **DO NOT** – place it in a bucket of water or cover it with anything **DO NOT** – cut, remove or undo string or wire on a suspect package as this may release the trigger mechanism and cause detonation. **DO NOT** – lift the cover of a box believed to contain an explosive or incendiary device.

IF YOU HAVE PARTIALLY OR COMPLETELY OPENED SUSPECT MAIL.	**DO NOT OPEN IT FURTHER** • If holding the package place it carefully on the nearest flat surface, keeping your face turned away all the time. • Follow the actions above.

IF THE HAZARD COULD BE:	**EXPLOSIVE OR INCENDIARY** • Leave package where it is or place on a flat surface if holding it. • Clear the immediate area • **Do not** use mobile phones or handheld radios within 15 metres • Ring 999 • Inform Response Coordinator • Prevent others from entering the room/area by displaying warning signs. • Where possible open windows. • Where possible leave a clear route to the device e.g. open doors etc to allow access for emergency services. • Report to response coordinator and remain available to provide information to emergency services.

	CHEMICAL/BIOLOGICAL OR RADIOLOGICAL Remain calm • Leave package where it is or place on a flat surface if holding it. • **DO NOT touch, sniff or tamper** with it in any way. • Ring 999 • Inform the Response Coordinator • Switch off any room air conditioning and/or fans. • Close windows and doors and if possible lock these on leaving. • Prevent others from entering by displaying a warning sign. • Move yourself and any others who might have been exposed to a clean room close to but not in the contaminated area. • Keep yourself and anyone who may have been exposed separate from others and await medical examination from the specialist emergency team attending. **DO NOT** go to hospital they will not be able to help you. **DO NOT** rub your eyes mouth or face or any other part of your body. • Wash your hands but not your face, unless you think it has been exposed to the suspect substance, in ordinary soap if facilities are provided. However, avoid moving outside the contained location as much as possible. • If you have washed your hands, make the building manager aware of this. • Blow your nose on a clean tissue.
	SHARPS • Leave package where it is or place on a flat surface if holding it. **DO NOT** tamper with it anyway. • Ring 999 • Inform the Response Coordinator • Seek first aid if needed.

GENERAL INSTRUCTIONS

RESPONSE COORDINATOR	• Notify the police immediately if this has not already been done. • Inform your Facilities Operations Manager. • Inform other tenants where appropriate. • Liaise with the Duty Manager/Area Manager to decide whether an evacuation is appropriate. • If appropriate, call Evacuation wardens together and brief them. • Use hand bells or Tannoy system to signal an alert. • Evacuation Wardens sent to relay instructions to staff in their zones.
ACTIONS FOR SEPECIFIC HAZARDS	**For suspected biological contamination:** • Ensure people outside the contaminated area are evacuated as soon as possible. • Ensure that the people in the contaminated room are evacuated to an adjacent unoccupied uncontaminated room away from the hazard to wait medical assessment. • Switch off building air conditioning • Close all windows in the building **For a suspected chemical incident:** • Ensure people evacuate the room as soon as possible. • Look for signs that people of exposure, streaming eyes, coughs and irritated skin. Seek medical advice and wait for instructions from the emergency services. **For suspected Sharps:** • Ensure first aid treatment is sought and if necessary hospital treatment.
ON HEARING HAND BELLS OR THE TANNOY	• DO NOT PANIC. • Follow instructions given by your Evacuation Wardens or Tannoy system promptly. • Do not return to your desk to collect your personal belongings or to lock away confidential documents. • If instructed evacuate the building immediately by the nearest fire exit or as directed by an Emergency Evacuation Warden. • Assemble at a place of safety, as directed by an Emergency Evacuation Warden. *Always make sure you remain at your place of safety until either the Emergency Evacuation Warden or the Response Co-Ordinator gives further instructions. In the event of an evacuation, the Police may move us to another location.*
REMEMBER	• **DO NOT** wait to conclude meetings, telephone calls, etc. • **DO NOT** re-enter the building until told to do so by the Response Co-ordinator or Manager in charge. • **DO NOT** use the lifts

	• **DO NOT** leave site by car • Switch off all mobile phones • Remember where your assembly points are. • Be prepared to evacuate the building by having keys, tickets, money etc. with you in case you cannot to return to the building.

HOSTILE SITUATIONS AT ENVIRONMENT AGENCY PREMISES

Date of issue	11 April 2017
Version No	**2**
Location	Guildbourne House, Chatsworth Road, Worthing, West Sussex BN11 1LD
Response Co-ordinator	Vicky Evans/Caroline Budd/Ian Waters
Deputy Response Co-ordinator	ABC Rota 0800 066 5625

INTRODUCTION

Protests or individuals acting in a threatening way are extremely rare and the specific risk posed to The Environment Agency is low. However, if there is a concern that there is a danger that a protest or individual may turn hostile then there are sensible steps that can be taken to minimise the possibility of harm. It is important to remain calm and be very clear about any information you have and alert people to a developing situation as early as possible.

A certain amount of preparation is needed to prepare for an event of this nature:

- Staff who may be faced with a situation where someone may become threatening should receive Hostile Situations training. For example, anyone manning reception, carrying out security duties, or interviewing while gathering evidence.
- Have a means of raising the alarm and ensure that people know how to use them.
- Ensure that people know what the alarm means and know how to react to it.
- Have CCTV in any indoor area where such a situation might occur. For example Reception/entrance areas, interview rooms.
- Have an easily accessible means of escape for any member of staff caught up in such a situation. That means of escape should not allow immediate access for the hostile person or group to the rest of the building.
- Identify suitable places to move staff to within the building should it be necessary for people to move in order to be away from any incident.
- Ensure that Evacuation Wardens are aware of their role during an event of this nature. Train them by carrying out exercises either desktop or evacuations.

GENERAL INSTRUCTIONS

HOSTILE SITUATIONS

SUSPICIOUS PERSON(S) ON SITE	• Without putting yourself at risk, approach and question the person who is acting suspiciously. • If you have any reason to doubt identity of the person(s) contact the Response Co-ordinator. • Give a good clear description of the person or group and their location. • Try to keep track of the person(s) movements.
HOSTILE PERSON(S) IN RECEPTION OR INTERVIEW ROOM	• Remain calm. • Sound the alarm. • Attract the attention of another member of staff. • Withdraw immediately, if you have any doubts about your own safety. • Call the Police. • Contact Facilities or Duty Manager.
HOSTILE PERSON/S ON PREMISES	• Remain calm • Withdraw immediately, if you have any doubts about your own safety. • Inform Facilities. • Contact Response Co-ordinator or Duty Manager. • Await assistance of other staff or the police.
RESPONSE COORDINATOR	• Respond immediately to the alarm (raised verbally or by telephone call) • Assess the situation, use CCTV if available, applying dynamic risk assessment and decide on appropriate action. • Contact Police, and appropriate Duty Manager. • Notify First Aider(s) and put on standby, if appropriate. • Position Emergency Evacuation Wardens, if appropriate, in order to marshall staff away from the incident.
DETAILS OF LOCAL ARRANGEMENTS	• *There is a panic button on reception which alerts Facilities staff on floor 6. Receptionist has access to a place of safety through the adjacent room which can be locked and then out through the far end. The interview room (Stour) on floor 2 has a panic alarm which sounds on the floor and a safe means of escape is through a separate door into the next door storeroom which can be locked.*
REMEMBER	• **Avoid direct confrontation.** • **Physically protect yourself.** • **Beware of unauthorised persons entering the building behind you.** • **Always wear your pass and challenge others if they are not wearing theirs.**

GAS LEAK

Date of issue	11 April 2017
Version No	**2**
Location	Guildbourne House, Chatsworth Road, Worthing, West Sussex BN11 1LD
Response Co-ordinator	Vicky Evans/Caroline Budd/Ian Waters
Deputy Response Co-ordinator	ABC Rota 0800 066 5625

GENERAL INSTRUCTIONS

GAS LEAK

ON RECEIPT OF A PHONE CALL	• Receive the call calmly. • Try to make sure you get the details exactly. • Inform Facilities Team Leader, Response Coordinator & Duty Manager/Area Manager, as soon as possible.
ON SMELLING GAS	• Inform Facilities Team Leader, Response Coordinator & Duty Manager/Area Manager, as soon as possible.

FACILITIES TEAM LEADER
RESPONSE
CO-ORDINATION
	• Respond immediately to the alarm.
	• Where possible isolate gas supply (**in locked room off the ground floor lobby area. First door on the rhs after staircase. Use the master key kept in reception to gain access).**
	• Contact gas supplier and liaise with them **(0800 111 999).**
	• Move everyone from the immediate vicinity of the leak.
	• Secure the area.
	• Inform other tenants or close by buildings of the situation.
	• If the authority in charge has ordered evacuation or you decide to evacuate the building,
	  • Inform the Duty Manager of the situation.
	  • Call Evacuation wardens together and brief them.
	  • Use hand bells or Tannoy system to signal an alert.
	  • Send Evacuation Wardens to relay instructions to staff in their zones.

ON HEARING HAND BELLS OR THE TANNOY	• DO NOT PANIC. • Follow instructions given by your Evacuation Wardens or Tannoy system promptly. • Do not switch on or off electrical items such as mobile phones. • Do not return to your desk to collect your personal belongings or to lock away confidential documents. • If instructed evacuate the building immediately by the nearest fire exit or as directed by an Emergency Evacuation Warden. Or • Assemble at a place of safety, as directed by an Emergency Evacuation Warden. ***Always make sure you remain at your place of safety until either the Emergency Evacuation Warden or the Response Coordinator gives further instructions. In the event of an evacuation, the Police may move us to another location.***
REMEMBER	• **DO NOT** wait to conclude meetings, telephone calls, etc • **DO NOT** re-enter the building until told to do so by the Response Co-ordinator or Manager in charge. • **DO NOT** use the lifts

	• **DO NOT** leave site by car • Remember where your assembly points are • Be prepared to evacuate the building by having keys, tickets, money etc. with you.

FLOOD EVENT

Date of issue	11 April 2017
Version No	**1**
Location	Guildbourne House, Chatsworth Road, Worthing, West Sussex BN11 1LD
Response Co-ordinator	Vicky Evans/Caroline Budd/Ian Waters
Deputy Response Co-ordinator	ABC Rota 0800 066 5625

Introduction

As we operate the flood warning system for the whole country, we should prepare for possible flooding at our sites. Steps to take in advance to prepare for such an event.

- Find out if, your site is in a flood plain. If it is what is the likelihood of flooding occurring.
- For buildings with a reasonable likelihood of flooding, make plans for a flooding event.
- Sign up to receive flood warnings
- Speak to your MEICA contact about a shutdown plan for the site.
- Wherever possible do not store important documents on the ground floor or have a plan to move these if necessary.
- Contact your services suppliers and find out what to do in the event of a flood.
- Take advice on what flood damage prevention measures you need to consider.

GENERAL INSTRUCTIONS

FLOOD EVENT

ON RECEIPT OF A PHONE CALL	• Receive the call calmly. • Try to make sure you get the details exactly. • Inform Facilities Team Leader, Response Coordinator & Duty Manager/Area Manager, as soon as possible.
ON SEEING RISING WATER	• Inform Facilities Team Leader, Response Coordinator & Duty Manager/Area Manager, as soon as possible.

FACILITIES TEAM LEADER
RESPONSE
CO-ORDINATION
	• Where safe to do so implement your site shut down procedure.
	• Speak to local flood warning team for more details
	• Move any important documents to a higher level.
	• Deploy sandbags or flood barriers.
	• Inform other tenants or close by buildings of the situation.
	• Inform the Duty Manager/Area Manager of the situation and make a joint decision about evacuation.
	  ◦ Call Evacuation wardens together and brief them.
	  ◦ Use hand bells or Tannoy system to signal an alert.
	  ◦ Send Evacuation Wardens to relay instructions to staff in their zones.

LOCAL DETAILS	*Utilities Isolation Points: Gas -* **(in locked room off the ground floor lobby area. First door on the rhs after staircase. Use the master key kept in reception to gain access).** *Electricity –* **(in electricity room opposite staircase in the ground floor lobby area).** *Water –* **(shut off valve is under drain cover in pavement to the rhs of the building).**
ON HEARING HAND BELLS OR THE TANNOY	• DO NOT PANIC. • Follow instructions given by your Evacuation Wardens or Tannoy system promptly. • If instructed evacuate the building as directed by an Emergency Evacuation Warden.

Meica Electrical Shutdown Procedure

The points below require action BEFORE any electrical isolation of the building takes place.

- The Responsible Officer shall inform the Business Service Manager that Guildbourne House will be without electrical power.
- Whomever manages the site IT server (CIS) shall be contacted informing them that an 'uncontrolled' server shutdown is imminent at Guildbourne House.
- The person who operates the main incoming electrical switch to isolate and re-instate power to the building shall be approved by the South East MEICA Regional Advisor.

Note – Once electrical power is isolated, the main electrical switch shall be padlocked and a notice hung within the shank of the padlock stating who isolated the switch, the time and date.

PHILIPS SURVEYORS
BUILDING SURVEYORS, DESIGNERS & CONSULTANTS

CDM2015 Designer Risk Register

Project:	Guildbourne House – Fifth Floor	Project Ref:	2230/19
Designer:	Philip Wiltshire MRICS IMaPS	Sheet No.:	1
Principal Designer:	Philip Wiltshire MRICS IMaPS	REV:	

Summary Of Design Element/s:

Designers have to consider **all hazards** and do what is reasonable to eliminate if feasible, or reduce risks where hazards remain. When it comes to **passing on information**, Designers do not need to mention every hazard or assumption, but they **MUST point out significant risks**. These are not necessarily those that result in greatest risk, but those that are:

a) Not likely to be obvious to a competent Designer or Contractor;
b) Unusual, or;
c) Likely to be difficult to manage effectively.

Think about how the design is to be built, maintained and later removed.

Feature, element, structure, 'process' or activity. Number the boxes for identification purposes. Date the box to record when the issue was added to the register.	**Hazards or hazardous activity identified** From any or all of the following: a) Accident and near-miss records. b) Practical guidance. c) Plus any foreseeable hazards identified by experienced team members	**Efforts to eliminate by design:** All design, which includes: initial concepts, layout, rules and procedures, particular working methods, specifications including materials and substances, bills of quantities, temporary works.	**Where hazards cannot be eliminated, measures designers can take to reduce risk** By reducing severity or population or reducing period of exposure (type of risk, or no. of persons or amount of time). If appropriate note the persons at risk.	**Residual issues, hazards or risks: the information to be supplied to others and to whom or for what?** Note the use of purpose of the information if it helps management: is it to other Designers or for tenderers or for construction or for the H&S file?	**How is the information going to be provided?** Consider 'NOD' notes on drawings or, if necessary, information as a report, or method statement or 'suggested construction sequence' or precautions or assumptions etc.	**Date closed-out** With initials of responsible person eg when NOD on drawings and if acting as PD when added to PCIP
1. *Delivery of materials 18.11.2021*	*Injury to staff & operatives during movement of heavy vehicles*	*Segregate working areas. Agree delivery times, temporary banners, signage*	*Agree access / work positions – use separate access, signage*	*QS / Tenderers / Principal Contractors / FM management*	*Within PCIP and NoD*	
2. *Delivery vehicles, lorries, skip lorries 18.11.2021*	*Injury to pedestrians, traffic incidents*	*Segregate working areas. Agree delivery times, temporary banners, signage*	*Agree access / work positions – use separate access, signage*	*QS / Tenderers / Principal Contractors / adult services management*	*Within PCIP and NoD*	

Philips Surveyors LLP
The Old Coach House
78 Lower Street, Pulborough
West Sussex RH20 2AZ
Tel: 01798 873222 Fax: 01798 873444
E-mail: info@philips-surveyors.co.uk

3. Removal of Waste 18.11.2021	*Injury to staff, pedestrians, traffic incidents*	*Segregate working areas. Agree delivery times, temporary banners, signage Agree removal times*	*Programme time for relocation of materials*	*QS / Tenderers / Principal Contractors / FM management*	*Within PCIP and NoD*	
4. Electrical services 18.11.2021	*Electrocution*	*Early identification of critical disconnection of circuits to be altered*	*Ensure matter is address within documents and plan*	*QS / Tenderers / Principal Contractors / FM management*	*Within PCIP and NoD*	
5. Flooring 18.11.2021	*Fumes from adhesive*	*Use of low odour products*	*Ensure adequate ventilation is noted*	*QS / Tenderers / Principal Contractors*	*Within PCIP and NoD*	

SECTION C

Specific & Trade Preliminaries

2230 19 – EA Guildbourne House – 5th incident room

Work Sections

AA	GENERALLY
C90	ALTERATIONS – SPOT ITEMS
K30	PANEL PARTITIONS
K45	SUSPENDED CEILING SYSTEM ALTERATIONS
L20	DOORS / SHUTTERS / HATCHES
L40	GENERAL GLAZING
M50	RUBBERS / PLASTICS / CORK / LINO / CARPET TILING / SHEETING
M52	DECORATIVE PAPERS / FABRICS
M60	PAINTING / CLEAR FINISHING

2230 19 – EA Guildbourne House – 5th incident room

AA GENERALLY

GOOD PRACTICE:

Where and to the extent that materials, products and workmanship are not fully detailed or specified they are to be:

- Of a standard appropriate to the Works and suitable for the functions stated in or reasonably to be inferred from the project documents, and

- In accordance with good building practice.

QUALITY STANDARDS / CONTROL:

Notwithstanding the above, it should be clearly understood that the standard and quality of materials, products and workmanship required by the Employer and CA are the highest achievable.

The Principle Contractor and Works Contractors shall install in all persons employed for the works that they shall strive to reach the highest achievable standards in their work.

It should be instilled by the Principle Contractor and Works Contractors in all operatives engaged on the works, that the quality and standards are not the norm as would be expected for spec-housing, but more so those befitting a fine and bespoke property.

To achieve the standards required will necessitate the utmost diligence by the Principle Contractor and Works Contractors to ensure all operatives either employed directly or as works contractors, are fully aware of the high standards and quality required to be achieved.

The Principle Contractor and Works Contractors shall allow sufficient time and resources to select suitable personnel of the correct calibre and experience to carry out the works to achieve the required standards.

The Principle Contractor and Works Contractors shall allow sufficient time and resources to monitor and inspect the works to achieve the required standards.

All works and quality standards related thereto shall be to the satisfaction of the CA. Any works deemed to be unacceptable by the CA acting reasonably will be re-executed at no cost to the Employer.

The Principle Contractor and Works Contractors shall ensure that the quality and standard of each particular trade is the highest achievable and that all trades do not rely on subsequent trades to compensate for lack of quality and standard for example:

1. Joinery shall be finished to the highest achievable standards, with tight and well fitting joints to mitres etc, such that decorators do not have to fill and make good.

2. Blockwork shall be true, plumb and accurate to a high standard such that plasterers do not have to dub-out and make good to imperfect works.

Plastering shall be to the highest achievable standard such that decorators do not have to fill and make good and compensate for imperfect works.

The works are to be carried out in accordance with the appropriate Codes of Practice in a workmanlike manner in accordance with the specification requirements contained in this specification and to the complete satisfaction of the contract administrator.

All works shall be carried out to a high quality standard and all operatives/ contractors shall be advised of the high quality of standard and finish which will be required.

The quality of the works and, in particular, the finished works shall be to a high standard befitting the property.

Operatives and trades must not rely on subsequent trades to make good and/or correct their items of work.

All works which do not achieve the required standard shall be carried out again in the Contractors own time and at their own expense.

C90 ALTERATIONS – SPOT ITEMS

To be read with Preliminaries/ General conditions.

GENERAL

110 DESCRIPTIONS
- Location of spot item descriptions: see schedule of works.

120 EMPLOYER'S PROPERTY
- Components and materials arising from alterations that are to remain the property of the Employer: partitioning materials where re-usable.
  - Protection: Maintain until items listed above are removed by the Employer or reused in the Works, or until the end of the Contract.

130 RECYCLED MATERIALS
- Materials arising from alterations: May be recycled or reused elsewhere in the project, subject to compliance with the appropriate specification and in accordance with any site waste management plan.
- Evidence of compliance: Submit full details and supporting documentation.
  - Verification: Allow adequate time in programme for verification of compliance.

K30 PANEL PARTITIONS

10 RELOCATABLE PARTITION SYSTEM to 3rd Floor
- Manufacturer: Komfoot.
  - Product reference: Komfire 75.
- Framing/ Perimeters/ Trims: to match existing.
- Solid panels: plasterboard.
- Glazed panels: not applicable.
- Doorsets: as Schedule of Works

50 WORKMANSHIP GENERALLY
- Setting out: Plumb, true to line and level and free from bowing, undulations and other planar distortions.
- Stability: Fix securely, with additional supports where necessary at perimeters.

70 PERIMETER SEALS
- Sealant material: A type recommended by the partition/ panel manufacturer.
- Application: Continuously to clean, dry, dust free surfaces, leaving no gaps. In accordance with the sealant manufacturer's instructions.

80 FINISHING
- Filling and taping: Fill joints, gaps and internal angles with jointing compound and cover with continuous lengths of tape. Apply more jointing compound and feather out to give a flush, seamless surface.
- Minor imperfections: Remove by lightly sanding.
- Finish with wallpaper to match existing.

K45 SUSPENDED CEILING SYSTEM ALTERATIONS

12 EXISTING SUSPENDED CEILING SYSTEM to 5th floor and 3rd floor
- Structure over: Concrete slab.
- Ceiling type: suspended 24mm exposed grid.
  - Manufacturer: Armstrong.
    Product reference: Dune.

13 SUSPENDED CEILING SYSTEM ALTERATIONS to 5th floor and 3rd floor
- Manufacturer: Armstong.
  - Product reference: Dune Supreme Square Edge lay in
- Suspension type: wire.
- Grid: 600 x 600.
- Infill units: Dune Supreme square edge.
- Access units: N/A.
- Accessories: To match grid and tile.
- Integrated services fittings: N/A.
- Void barriers: N/A.
- Insulation: N/A.

62 EXECUTION GENERALLY
- Designated ceiling system components: Remove carefully without affecting surrounding areas.
- Disposal of removed components: all damaged units.
- Retained components: Do not distort or damage.
- Reuse of ceiling system components:
  - Condition: Undamaged, free from distortion, clean.
  - Units and boards: Match adjacent areas where appropriate.
- Cutting units, boards and components: Cut neatly and accurately. Maintain edge profiles.
  - Openings: Suit sizes and edge details of fittings.

65 SETTING OUT
- General: Maintain ceiling system accurately, continuous, even, and jointed at regular intervals. Provide level soffits free from undulations, lipping and distortions in grid members.
- Infill units, access units, integrated services: Fit and align correctly.
- Minimum size for edge and perimeter infill units: Half standard width or length where practicable.
- Grid: Position to suit infill unit sizes. Allow for permitted deviations from nominal sizes.
- Infill joints and exposed suspension members: Straight, aligned and parallel to walls or setting out lines.

67 INSTALLING SUSPENSION
- Fixing:
  - Angle or strap hangers: Do not rivet for top fixing.
  - Wire hangers: Tie securely at top with tight bends to loops to prevent vertical movement.
- Installation:
  - Alignment: Vertical or near vertical without bends or kinks.
  - Maintain straight, with suitable tension and without bends or kinks.
  - Do not allow hangers to press against fittings, services and insulation covering ducts and pipes.
- Obstructions: Where obstructions prevent vertical installation, either:
  - brace diagonal hangers against lateral movement; or
  - hang ceiling system on an appropriate rigid sub-grid bridging across obstructions and supported to prevent lateral movement.
- Extra hangers: Provide as required to carry additional loads.

71 INTEGRATED SERVICES
- General: Position services accurately, support adequately. Align and level in relation to the ceiling. Alterations must not diminish performance of ceiling system.
- Surface spread of flame rating of additional supporting material: Match ceiling material.
- Services outlets:
  - Supported by ceiling system: Provide additional hangers.

- Independently supported: Provide flanges to support altered ceiling system.

74 INSTALLING CAVITY FIRE BARRIERS
- Fixing:
  - General: Fix firmly to channels or angles at abutments to building structure.
  - At perimeters and joints: Secure. Provide permanent stability and continuity with no gaps. Provide a complete barrier to smoke and flame.
- Joints: Form to preserve integrity in fire.
- Service penetrations: Cut and pack to maintain barrier integrity. Sleeve flexible materials. Adequately support services passing through the barrier.
  - Ceiling systems intended for fire protection: Do not impair fire resisting performance of ceiling system.
  - Ceiling systems not intended for fire protection: Do not mechanically interlink barriers with ceiling system.

L20 DOORS/ SHUTTERS/ HATCHES

70 FIRE RESISTANCE
- Requirement: Specified performance to be the minimum period attained when tested for integrity in accordance with BS 476-22, BS EN 1634-1 or BS EN 1634-3.

75 FIRE RESISTING/ SMOKE CONTROL DOORS/ DOORSETS
- Gaps between frames and supporting construction: Filled as necessary in accordance with door/ doorset manufacturer's instructions.

80 SEALANT JOINTS
- Sealant:
  - Manufacturer: Contractor’s choice.

85 FIXING IRONMONGERY GENERALLY
- Fasteners: Supplied by ironmongery manufacturer.
  - Finish/ Corrosion resistance: To match ironmongery.
- Holes for components: No larger than required for satisfactory fit/ operation.
- Adjacent surfaces: Undamaged.
- Moving parts: Adjusted, lubricated and functioning correctly at completion.

L40 GENERAL GLAZING

10 WORKMANSHIP GENERALLY
- Glazing:
  - Generally: To BS 6262.
  - Integrity: Wind and watertight under all conditions. Make full allowance for deflections and other movements.
- Glass:
  - Standards: Generally to BS 952 and to the relevant parts of:
    BS EN 572 for basic soda lime silicate glass.
    BS EN 1096 for coated glass.
    BS EN 12150 for thermally toughened soda lime silicate glass.
    BS EN ISO 12543 for laminated glass.
  - Quality: Free from scratches, bubbles and other defects.
  - Dimensional tolerances: Panes/ sheets to be accurately sized.
- Material compatibility: Glass/ plastics, surround materials, sealers primers and paints/ clear finishes to be compatible. Comply with glazing/ sealant manufacturer’s recommendations.

M50 RUBBER/ PLASTICS/ CORK/ LINO/ CAPRET TILING/ SHEETING

15 CARPET TILING to 5th floor
- Base: Existing concrete / screed.
  - Preparation: Remove existing carpet.

- Fabricated underlay: N/A.
- Carpet tiles: to 5th Floor.
  - Manufacturer: Forbo.
    Product reference: Tesserra Mix.
  - Recycled content: as manufactured.
  - Size: 500 x 500.
  - Colour/ pattern: Random.
- Method of laying: Fully adhere with tack and ??.

40 LAYING COVERINGS ON NEW WET LAID BASES
- Base drying aids: Not used for at least four days prior to moisture content test.
- Base moisture content test: Carry out in accordance with BS 5325, Annexe A or BS 8203, Annexe A.
- Commencement of laying coverings: Not until all readings show 75% relative humidity or less.

45 EXISTING FLOOR COVERING REMOVED
- Substrate: Clear of covering and as much adhesive as possible. Skim with smoothing compound to give smooth, even surface.

60 SETTING OUT TILES
- Method: Set out from centre of area/ room so that wherever possible:
  - Tiles along opposite edges are of equal size.
  - Edge tiles are more than 50% of full tile width.

65 LAYING COVERINGS
- Base/ substrate condition: Rigid, dry, smooth, free from grease, dirt and other contaminants.
- Use a primer where recommended by adhesive manufacturer. Allow to dry thoroughly.
- Adhesive: As specified, as recommended by covering manufacturer or, as approved.
- Conditioning of materials prior to laying: As recommended by manufacturer.
- Environment: Before, during and after laying, provide adequate ventilation and maintain temperature and humidity approximately at levels which will prevail after building is occupied.
- Finished coverings: Accurately fitted, tightly jointed, securely bonded, smooth and free from air bubbles, rippling, adhesive marks, stains, trowel ridges and high spots.

70 EDGINGS AND COVER STRIPS
- Manufacturer: Gladus.
  - Product reference: DIM Strips.
- Material/ finish: PVC.
- Fixing: Secure (using matching fasteners where exposed to view) with edge of covering gripped.

85 WASTE
- Spare covering material: Retain suitable material for patching. On completion submit pieces for selection. Hand over selected pieces to Employer.

M52 DECORATIVE PAPERS/ FABRICS

10 COVERING FOR walls and plasterborad
- Substrate: new and existing plasterboard.
  - Preparation: new only.
  - Treatment: primer.
- Adhesive: prop ?? to suit.
- Lining: not required.
- Covering: to new walls.
  - Manufacturer: M ? .
    Product reference: to match existing.
  - Colour/ pattern: to match existing.
  - Other requirements:_____ .

21 PREPARATION OF SUBSTRATES GENERALLY
- Substrates: Sufficiently dry in depth to suit covering to be hung.
- Efflorescence salts, dirt, grease and oil: Remove.
- Organic growths and infected coatings/ decorations: Remove and dispose of. Apply treatment biocide to assist removal and residual effect biocide to inhibit regrowth.
- Substrate irregularities: Fill cracks, joints, holes and other depressions with stoppers/ fillers. Abrade to a smooth finish.
- Dust, particles and residues from abrasion: Remove.

41 PAPER/ FABRIC COVERED SUBSTRATES
- Existing coverings: Remove by wet or dry stripping.

50 VINYL COVERED SUBSTRATES
- Existing covering: Remove peelable vinyl surface.
- Paper backings to vinyl: May be retained as a lining if in good condition and firmly adhering. Stick down lifting edges and corners.

60 HANGING GENERALLY
- Completed covering: Securely adhered, smooth and free of air bubbles, wrinkles, gaps, tears, adhesive marks and stains. Joints truly vertical/ horizontal and straight.

70 LININGS
- Hang lengths: With neat butt joints.
- Drying period: Leave for 24 hours before hanging coverings.

80 COVERINGS
- Colour consistency: Check before hanging each length and after hanging first three lengths.
- Hanging lengths:
  - Wall coverings: Vertical.
  - Ceiling coverings: Parallel to main window wall.
- Butt joints: Hang lengths with neat butt joints generally.
- Overlap joints: Permitted only where recommended by covering manufacturer. Cut through joints when stable to a true straight edge.
- Cross joints: Permitted only where single lengths are impractical.

M60 PAINTING/ CLEAR FINISHING

30 PREPARATION GENERALLY
- Standard: In accordance with BS 6150.
- Risk assessment and method statement for hazardous materials: Prepare for operations, disposal of waste, containment and reoccupation, and obtain approval before commencing work.
- Preparation materials: Types recommended by their manufacturers and the coating manufacturer for the situation and surfaces being prepared.
- Substrates: Sufficiently dry in depth to suit coating.
- Efflorescence salts, dirt, grease and oil: Remove.
- Surface irregularities: Provide smooth finish.
- Organic growths and infected coatings:
  - Remove with assistance of biocidal solution.
  - Apply residual effect biocidal solution to inhibit regrowth.
- Joints, cracks, holes and other depressions: Fill with stoppers/ fillers. Provide smooth finish.
- Dust, particles and residues from preparation: Remove and dispose of safely.
- Doors, opening windows and other moving parts:
  - Ease, if necessary, before coating.
  - Prime resulting bare areas.

32 PREVIOUSLY COATED SURFACES GENERALLY
- Preparation: In accordance with BS 6150, clause 11.5.
- Contaminated or hazardous surfaces: Give notice of:
  - Coatings suspected of containing lead.

  - Substrates suspected of containing asbestos or other hazardous materials.
  - Significant rot, corrosion or other degradation of substrates.
- Risk assessment and method statement for hazardous materials: Prepare for operations, disposal of waste, containment and reoccupation, and obtain approval before commencing work.
- Removing coatings: Do not damage substrate and adjacent surfaces or adversely affect subsequent coatings.
- Loose, flaking or otherwise defective areas: Carefully remove to a firm edge.
- Alkali affected coatings: Completely remove.
- Retained coatings:
  - Thoroughly clean.
  - Gloss coated surfaces: Provide key.
- Partly removed coatings: Apply additional preparatory coats.
- Completely stripped surfaces: Prepare as for uncoated surfaces.

35 FIXTURES AND FITTINGS
- Risk assessment and method statement for hazardous materials: Prepare for operations, disposal of waste, containment and reoccupation, and obtain approval before commencing work.
- Removal: Before commencing work remove: all fixtures and fittings.
- Replacement: Refurbish as necessary, refit when coating is dry.

37 WOOD PREPARATION
- General: Provide smooth, even finish with lightly rounded arrises.
- Degraded or weathered surface wood: Take back surface to provide suitable substrate.
- Degraded substrate wood: Repair with sound material of same species.
- Heads of fasteners: Countersink sufficient to hold stoppers/ fillers.
- Resinous areas and knots: Apply two coats of knotting.
- Defective primer: Take back to bare wood and reprime.

43 PLASTER PREPARATION
- Nibs, trowel marks and plaster splashes: Scrape off.
- Overtrowelled ‘polished’ areas: Provide suitable key.

61 COATING GENERALLY
- Application: In accordance with BS 6150, clause 9.
- Conditions: Maintain suitable temperature, humidity and air quality.
- Surfaces: Clean and dry at time of application.
- Thinning and intermixing: Not permitted unless recommended by manufacturer.
- Priming coats: Apply as soon as possible on same day as preparation is completed.
- Finish:
  - Even, smooth and of uniform colour.
  - Free from brush marks, sags, runs and other defects.
  - Cut in neatly.
- Doors, opening windows and other moving parts: Ease before coating and between coats.

- Preservative treated timber: Retreat cut surfaces with two flood coats of a suitable preservative before priming.
- End grain: Coat liberally, allow to soak in, and recoat.

SECTION D

Specification

		£	p
	CONTENTS		
D1.0	GENERALLY		
D2.0	SITE SET UP		
D3.0	CEILING ALTERATIONS		
D4.0	PARTITIONS, DOORS & ALTERATIONS		
D5.0	NEW POCKET DOOR		
D6.0	DECORATION		
D7.0	FLOORING		
D8.0	FIXTURES & FITTINGS		
D9.0	ELECTRICAL SERVICES		
D10.0	ATTENDANCE		
D11.0	DAYWORKS		
D12.0	ROMSEY SITE – Offsite electrical works		
D1.0	***GENERALLY***		
D1.1	The works consist of the **NORMAL HOURS** alterations to the existing 5th floor incident room. Any noisy works or disconnection of power or data can only be undertaken during **OUT OF HOURS**		
D1.2	*Tender Drawings* The following Schedule of Works is to be read in conjunction with the tender drawings within Appendix A and the Electrical Specification and drawings within Appendix B. Note also the specific compliance requirements for working on an EA site within Appendix C.		
D1.4	*Pricing* The Contractor will be expected to produce a priced Schedule of Works with **their tender submission** whereby each item of work should be individually costed for the Employer's review.		
D1.5	An e-mailed Schedule of Works can be issued on request should the Contractor wish to use the document to supply their breakdown of costs.		
D1.6	*Programme* A detailed programme will need to be prepared and submitted prior to works commencing for approval by the CA.		
D1.7	*Site Foreman* The Contractor must include for providing a full time experienced site foreman for the full duration of the project. The site foreman must hold a minimum qualification of CSCS (Construction Skills Certificate Scheme) GOLD Card Supervisor standard for supervision and is to be on site for all works. For out of hours working, a fully briefed GOLD card skilled worker or supervisor must be in charge on site.		
D1.8	*Contract* See main Preliminaries. The Contractor should price for standard preamble provisions here.		
D1.9	*Workmanship, Quality and Compliance with Regulations* The works are to be carried out in accordance with all appropriate and relevant Codes of Practice, in a workmanlike manner in accordance with the requirements contained in this specification and to the complete satisfaction of the CA.		

		£	p
D1.10	All products, materials and proprietary systems shall be used, handled and installed in accordance with the manufacturer's recommendations and their technical details shall be obtained and used for guidance.		
D1.11	Should the Contractor wish to use alternative products to those specified they must obtain approval for their use from the CA. Such products must be at least equal to those specified.		
D1.12	Any works which do not achieve the required standard shall be carried out again in the Contractors own time and at their own expense.		
D1.13	*Fire Alarm* The existing fire alarm is linked to the adjoining shopping centre and is automatically linked to the fire brigade. **ANY** works which are likely to cause false activations that require isolation of the fire alarm **MUST** be arranged in accordance with EA FM to contact the Centre Manager to take the system off watch and to come bank on watch. The contractor must ensure they remain in attendance until this is safely put back on watch.		
D1.14	*Power Disconnections* A minimum of 20 days notice period is required for any power off situation with EA FM informing EA DDTS team. EA DDTS agree what power off procedures are required. If any power off of essential telemetry equipment is required this also requires advance approval.		
D1.15	*IT Alterations* The Contractor will be responsible for new and altering containment, including back boxes for new / revised data layouts. Ready for termination of cables by EA IT contractor and testing. The EA IT contractor will also relocate and provide any new cables.		
D2.0	**SITE SET UP**		
D2.1	*Site Compound* The Contractor can utilise two parking spaces at the side of the building using a 4 yard skip for non-hazardous waste only.		
D2.2	The Contractor shall ensure that all operatives contain themselves within the site compound works areas and do not enter onto neighbouring land unless for purposes required by the contract works. Operatives shall not explore the grounds and buildings and anyone found wandering from the site without contractual reason will be requested to leave immediately.		
D2.3	*Health and Safety Signage* Provide comprehensive and thorough health and safety signs to the site and, in particular, in and around the works areas. Provide "CONSTRUCTION SITE – KEEP OUT" notices to all building approaches.		
D2.4	The Contractor shall provide as part of their health and safety plan details of the proposed signs for agreement with the CA prior to starting on site.		
D2.5	*Site Welfare Facilities* Provide and maintain suitable welfare facilities in accordance with the requirements of Schedule 2 of the 2015 CDM Regulations as follows: • Sanitary conveniences • Washing facilities • Drinking water • Facilities for rest		

		£	p
D2.6	The Contractor shall assess their requirements for welfare facilities and shall provide full details of these facilities within their tender submission (See D2.7)		
D2.7	Site accommodation shall include, but not be limited to, the provision of the following: *Storage Cabin(s):* Utilise the existing work areas of the building. *Welfare:* - Utilise the café area on the 5th floor. *WC facility:* - Utilise the nearest existing internal toilet – to be identified by EA FM at the pre-start meeting.		
D2.8	If required, adjustments and alterations to the layout of the Contractor's compound shall be agreed at the pre-contract meeting.		
D2.9	*Advertisement* The Contractor shall not display any advertisement on the site other than the firm's name board and contact details; neither shall he permit any other advertisements to be displayed without the written authority of the CA.		
D2.10	*Debris* The Contractor is to allow for the removal from site of all debris and surplus materials that have arisen from the works. All items of stripping out, demolition and alterations are to include for removing all surplus materials and their disposal from site.		
D2.11	All debris is to be bagged up and removed from the building each day and placed in a 4 yard skip which is to be situated in two spaces at the front of the property and include for all necessary skip licences/applications and lighting as required.		
D2.13	All debris must be removed regularly and shall not be left to build-up.		
D2.14	All skips shall be provided with tarpaulins to avoid debris being blown around during windy weather.		
D2.15	*Protection Generally* Protection shall be given to all parts of the building and surrounding areas i.e. corridors, lifts, doorways etc. during deliveries and movement of materials. The Contractor is to reinstate all damage occurring during the course of the contract at his own time and expense.		
D2.16	*Manning* The Contractor will maintain adequate staffing levels and shall proceed diligently and expeditiously with the work.		
D2.17	The Contractor will be responsible for any delays arising out of their failure to inadequately resource the project.		
D2.18	*Out of Hours Working* All work is to be undertaken out of hours i.e.; weekends or after 5pm. EA FM will be in attendance during the works and will be responsible for security on site.		
D2.19	*Electrical Appliances* Only 110V rated and cordless power-pack tools are permitted. It is assumed that the Contractor will be able to use the local power supply during the works however this must be agreed at the pre-contract meeting.		

		£	p
D2.20	*Meetings and Records* The Contractor's representative and foreman will be required to attend site meetings when required by the CA and will be required to bring a progress report, records of sub-contractors and men employed. The Contractor is to submit to the CA weekly records of men employed for certification and signature.		
D2.21	*Programme* The Contractor is to submit within 5 days of being appointed as the successful Contractor, a programme to indicate duration of activities and levels of manning.		
D2.21	*COSHH Regulations* The Contractor is to comply with Control of Substances Hazardous to Health Regulations (COSHH) 2002. All relevant information relating to hazard assessment to be submitted on request		
D2.23	*Extent of works & Contractor's Liaison* The Contractor shall allow for liaison with all parties as required for the works which shall include the Employer and their representatives, all Contractors, whether specialist, domestic sub-contractors or those employed directly by the Employer, utilities companies and other suppliers involved in the works.		
D2.24	*Samples & Materials Selection* The Contractor shall be required to obtain samples of certain materials and items which will require selection by the Client. Colour cards and samples etc shall be used for the 'initial selection' process and once items have been 'short-listed' larger samples and/or pieces will be required for presentation to the Client for final selection.		
D3.0	**SUSPENDED CEILING ALTERATIONS**		
D3.1	Alter and adapt the existing 24mm exposed grid suspended ceiling system to the 5th floor incident room to facilitate the removal of the existing partition,		
D3.2	Allow for replacement of 20 no damaged ceiling tiles to the 5th floor incident room using replacement "lay in" Armstrong Dune Supreme ceiling tiles		
D3.3	Provide additional hanging support for any new lights or services and adapt ceiling for any new framing cut outs, drops etc.		
D4.0	**DEMOUNTABLE PARTITIONING,DOORS AND ALTERATIONS**		
D4.1	Carefully take down existing Komfort 75mm thick partition which currently sub-divides incident room and salvage framing system for re-use. Dispose of excess material noting partition is partially glazed.		
D4.2	Provide acoustic barrier between head of new partitions to incident breakout room and shutter soffit above (ceiling void 145mm) and ensure full seal to partition head and soffit.		
D4.3	Form new doorway opening into incident room No. 1 using new matching powder coated grey framing into existing Komfort 100mm thick partition.		
D4.4	To new incident breakout rooms allow for the insertion of 2no new 1.2m wide x 1.0m high double glazed screens into existing partitions. New windows to be fitted with integral blinds within double glazed units with twist control knobs within incident breakout room side. Allow to adapt, renew and alter partitions as required to facilitate this and make good on completion.		

		£	p
D4.5	Remove existing veneered door into estates deeds room along with architrave and lining and make good with matching construction including all new finishes.		
D4.6	Remove existing veneered door into area incident room along with architrave and lining and make good with matching construction including all new finishes.		
D4.7	Supply and fit new FD30 intumescent and smoked striped veneered fire door to match existing within framing to be built into existing partitioning to new incident breakout room. Door to be fitted with the following ironmongery • 100 x 88 x3mm triple knuckle self lubricating butt hinges1.5 pairs with intumescent pads • SSS cam action overhead door closer with slide track and arm. • SSS 200mm kick plates to both sides of new doorway • Floor Stop • SSS 26mm fire door keep locked sign • Codelock 510 mechanical digilock		
D5.0	**NEW POCKET DOOR and STUDWORK PARTITION**		
D5.1	Supply and erect new 115mm thick studwork wall shown shaded yellow to enclose Team incident room using 89 x 38mm CLS studwork at 600mm centres with noggins at 600mm centres on head and sole plates ensuring structure is strapped back to structural floor above. Supply and build in Buller ltd pocket door kit 3074 x 2053 with 90mm frame, 2no satin 762mm glass door including jamb kit and soft close actuator.		
D5.2	Finish studwork and metal frame with one layer of 12.5mm TE plasterboard and fill with scrim tape and easifill ready for decoration		
D5.3	Provide black skirtings to both sides of new partition using matching Komfort black self coloured skirtings 100mm high to match existing to be fixed as per manufacturer details. Check dimensions of existing.		
D6.0	**DECORATION**		
D6.1	Unless otherwise specified, decoration materials shall be from the Dulux Trade range and Hammerite and shall be used in accordance with the manufacturer's recommendations. Where alternative materials are required the type and choice shall be agreed with the CA prior to the works. Decoration works shall include all necessary ancillary products such as fillers, thinners and cloths etc.		
D6.2	Preparation of all surfaces, both new and existing, is to be to a high standard so as to produce the correct finish to the final decorated surface. Note extent of exposed conduit and trunking and ensure adequate allowances for masking up of all services neatly and cleaning off of overpaint.		
D6.3	Prepare and decorate all new internal surfaces in colours to be selected by the Client as follows:		
D6.4	Walls: 1 no. mist coat 2 no. full coats of Dulux vinyl matt emulsion		
D6.5	Metalwork etc: 1 no. undercoat 2 no. gloss or satinwood finishing coats		
D6.7	All new joinery: knotting solution, 1 no spot primer / undercoat of Dulux		

		£	p
	quickdrying primer for new work, 2 no coats of Dulux Diamond eggshell,		
D6.8	Allow for the supply and fitment of new Muraspec Cheviot wallpaper to match existing (include the provisional sum of £450.00 for supply of paper) to be affixed using a property wall paper adhesive recommended by the manufacturer i.e. Muraband. Wallpaper to be provided to all new partitions and make good all disturbed areas.	450	00
D6.9	To existing end wall of incident room, allow for stripping out of existing orange finish and replace for full length and height of wall with new whiteboard flexible wall covering to be fixed using VOV adhesive.		
D7.0	**FLOORING**		
D7.1	Allow for the carful uplift and salvage of existing floor tiles to the 5th floor new incident breakout room and the main are incident room, and resilience area and dispose off. Make good where the existing partition has been removed and relay on new tackifier as required and patch in sub base with latex to suit levels.		
D7.2	Supply and lay new Forbo Tessera Mix Carpet tiles 500 x 500m, 6mm thick, to be laid in a random pattern using 542 Euroxfix tack plus adhesive to the new Incident breakout room, area incident room and resilience team room. Ensure all off-cuts are recycled via Forbo Back to the Floor. Colour choice to be agreed with client		
D7.3	Provide new trims to all doorways and abutments with corridor		
D8.0	**FIXTURES & FITTINGS**		
D8.1	Include the provisional sum of £300.00 for altering, new and repositioned signage to be agreed with the client.	300	00
D8.2	Liaise with the electrical sub-contractor to enable relocation of the existing smart board from corridor wall to return wall.		
D8.3	Supply and fit new 1800mm long x 1200mm high normal whiteboard to end wall of area incident room and also to incident breakout room		
D8.4	Fit 3no client supplied downward wall projectors to end wall and connect up to power and data. Commissioning by client IT department.		
D9.0	**ELECTRICAL SERVICES (ALL WORKS OUT OF NORMAL HOURS)**		
D9.1	Include here for all electrical alterations as included within PSLLP drawing 2230/19/E01 in include:		
D9.2	*Lighting and Power Installations* Amend existing lighting and power systems as required to suit the revised layouts: install new as required or implied therein or reasonably inferred from the drawings to all areas.		
D9.3	*Fire Alarms* Amend existing fire alarm system as required to the requirements: install new as required or implied thereon or reasonably inferred from the drawings to all areas.		

		£	p
D9.4	*Access Control and CCTV* Alter CCTV to suit ceiling repairs		
D9.5	*Network* Amend existing data provision to suit the revised layout noting the specific requirements for attendance of Client IT provider to isolate and undertake final termination and testing. Cost of Client IT provider to be met by client.		
D9.6	All electrical shutdowns which includes lighting and small power final circuit isolations will require 20 working days notice to the on site FM team		
D9.7	Alterations to the fire detection and alarm system requiring zone isolation will require 7 working days notice.		
D10.0	**ATTENDANCE**		
D10.1	Allow for the full attendance and liaison on all service contractors in forming holes, chases and opening up etc and the subsequent making good on completion of the services i.e. extract fans, pipework, cabling etc.		
D10.2	The Main Contractor shall coordinate and integrate all works and in particular the services and specialist works undertaken by the sub-contractors		
D10.3	ENSURE ALL NEW CABLE, PIPEWORK, PENETRATIONS ARE FULLY FIRESTOPPED AND PHOTOGRAPHIC EVIDENCE WILL BE REQUIRED TO ENABLE A PRACTICAL COMPLETION CERTIFICATE TO BE ISSUED		
D11.0	**DAYWORKS**		
D11.1	Works instructed by the CA to be undertaken as 'Dayworks' (i.e. on a time and material basis) shall be charged at the following rates which shall be for the net time worked on site to carry out the operation/task.		
D11.2	The hourly labour rates shall include for all usual 'on-costs' such as overhead and profit, plant and tools, bonus, holiday pay, insurance, travelling and subsistence, supervision and administration costs etc.		
D11.3	The % on-cost applied to materials shall include for all usual 'on-cost' such as measuring and ordering, collection and/or delivering to site, unloading, storing, protection, handling and insurance etc.		
D11.4	The full details of works undertaken under 'dayworks' shall be accurately recorded which shall include the description of the task, operative's data, day, date, and details of hours spent on the task (scraps of paper with '2men, 3 days, will not be accepted!)		
D11.5	Include for the following additional labour within the tender sum: *Labour:* Labourer 1 hour @ £…….. per hr Carpenter 1 hour @ £…….. per hr Electrician 1 hour @ £…….. per hr Mechanical Engineer 1 hour @ £…….. per hr Materials: £ 500 (worth) plus ……% (OH&P) Plant/tool hire £ 500 (worth) plus ……% (OH&P)		

		£	p
D12.0	**ROMSEY SITE – Offsite Electrical works**		
D12.1	Allow to attend site with designer and client at the following site to review requirements to provide power supplies for 5no wall mounted Projectors/Televisions and associated containment works and also for containment for new data supplies to be installed by the clients IT department. EA District Office Station Road Romsey SO51 8DU		
D12.2	Allow the Provisional sum of £5000 for electrical works to be undertaken at the above site following attendance and agreement of the scope of works	5000	00

COLLECTION PAGE

TOTAL SECTION D £

SECTION E

Contingency Sum

CONTINGENCY SUM

Allow the following PROVISIONAL SUM as a general contingency to be expended or deducted as instructed by the Contract Administrator. 10% of the total cost of section D per phase.

SECTION F

Summary

TENDER SUMMARY

The Contractor must complete this summary page to reflect the relevant work sections as set out below.

SECTION		
A	General Preliminaries	£
B	Health & Safety	£
C	NBS Workmanship Clauses	£
D	Particular schedule of works	£
E	Contingency at 10%	£
	SUB TOTAL	£
	Total	
	VAT @ 20%	
	TOTAL INC VAT	

Signed:

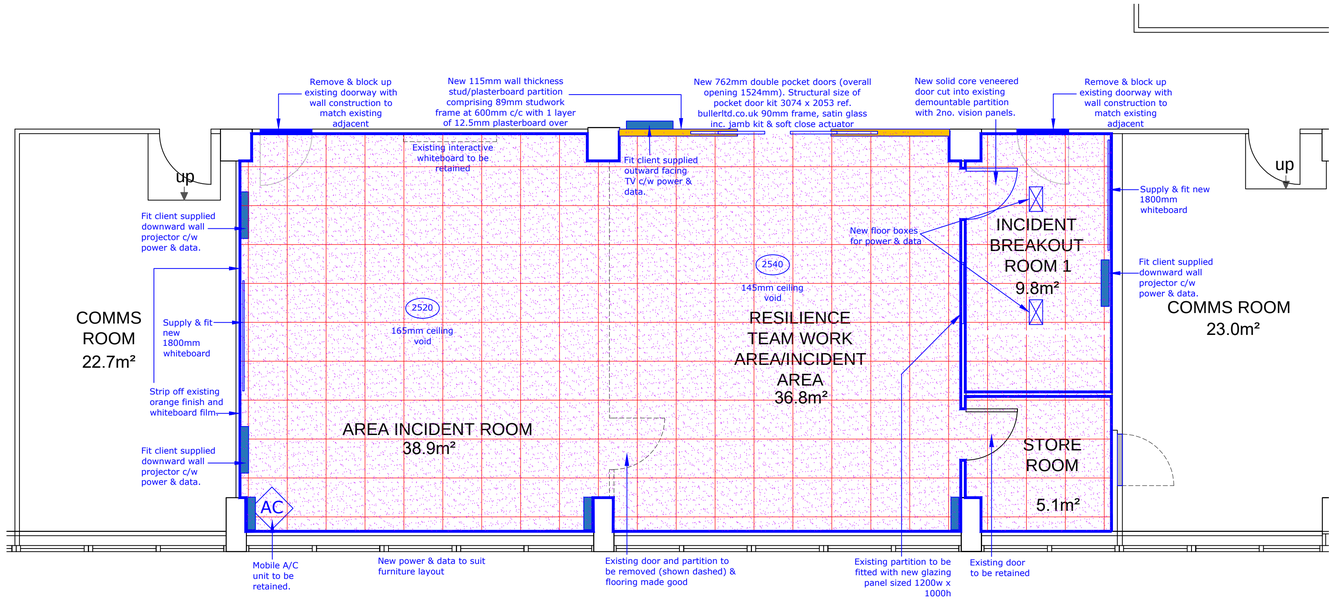
Company:

Date:

APPENDIX A

Drawings:-

2230/19/T1 – Philips Surveyors LLP – Proposed Builder's Works 5TH Floor



5TH FLOOR INCIDENT AREA ALTERATIONS - PROPOSED WORKS PLAN SCALE 1:50

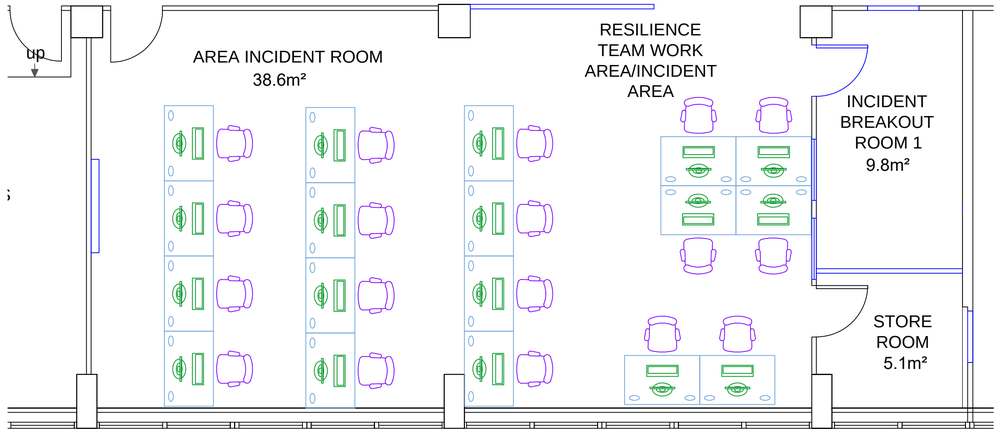
Repair and refurbish existing Armstrong Dune Ceiling Tiles and Grid

Remove door and infill with matching materials 2No.

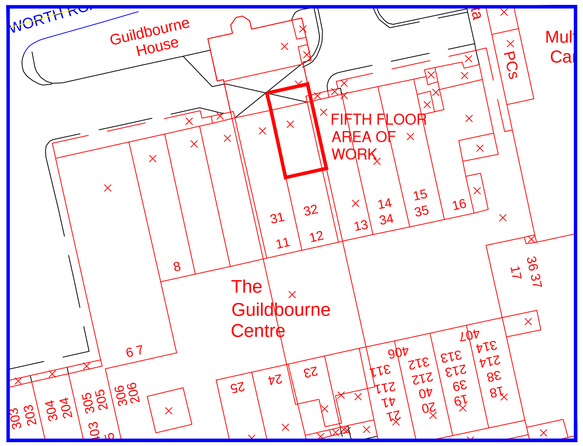
New combined stud & plasterboard wall with metal pocket door framing system. Wall to be strapped back to concrete floor slab above noting 145mm void

Replace all flooring with new Forbo Tessera Mix carpet tiles 500 x 500mm on 542 Eurofix tack plus adhesive.

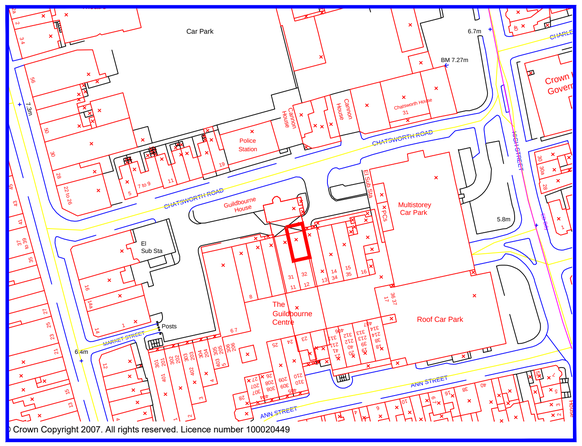
SATIN GLASS DOOR WITH 90mm POCKET KIT NOT TO SCALE



5TH FLOOR INCIDENT AREA ALTERATIONS - FURNITURE PLAN SCALE 1:50



BLOCK PLAN SCALE 1:500



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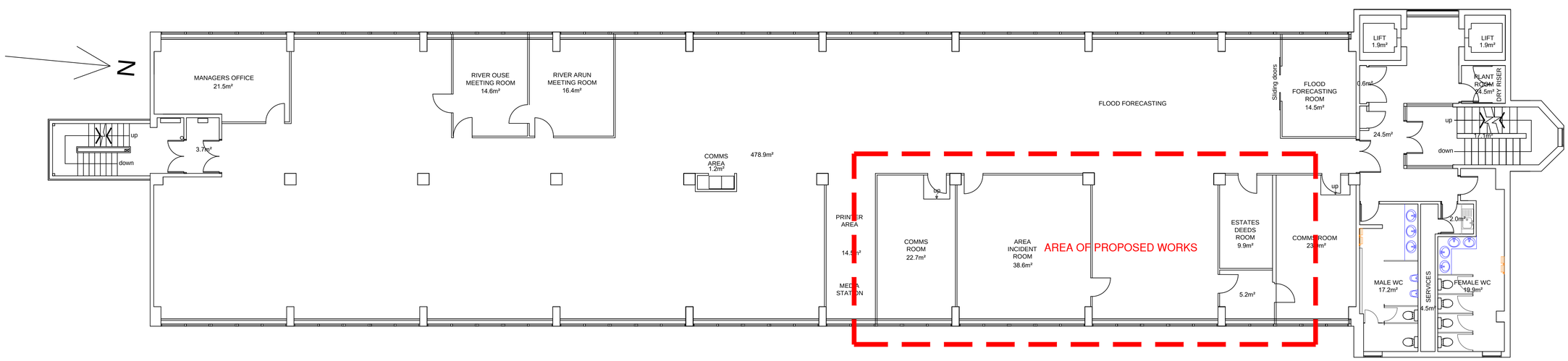
LOCATION PLAN SCALE 1:1250



FIFTH FLOOR

5TH FLOOR EXISTING FLOOR PLAN SCALE 1:100

Notes
All details are indicative only. All dimensions to be checked on site by contractor prior to commencement of works. Any discrepancies in drawings to be reported to Philips Surveyors LLP.

Rev.	Amendments	Date	Drw.

PHILIPS SURVEYORS
BUILDING SURVEYORS, DESIGNERS & CONSULTANTS
PHILIPS SURVEYORS LLP, THE OLD COACH HOUSE, 78 LOWER STREET, PULBOROUGH, WEST SUSSEX, RH20 2AA
TEL **01798 873222** FAX **01798 873444**
EMAIL **INFO@PHILIPS-SURVEYORS.CO.UK**
WWW.PHILIPSCHARTEREDSURVEYORS.CO.UK
RICS

CLIENT:
The Environment Agency
Guildbourne House
Chatsworth Road
Worthing BN11 1LD

PROJECT:
The Environment Agency
Guildbourne House, Chatsworth Road
Worthing BN11 1LD

PROPOSED ALTERATION 2021

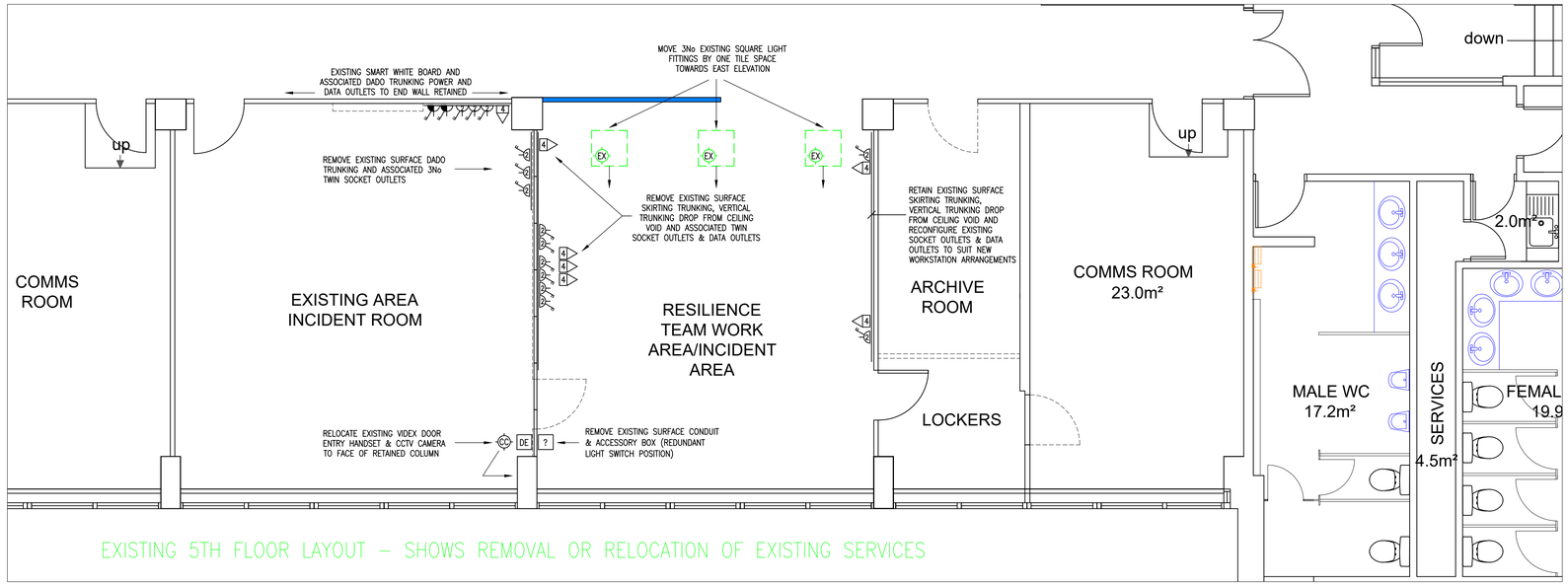
DRAWING TITLE:
TENDER

Conversion of Fifth Floor

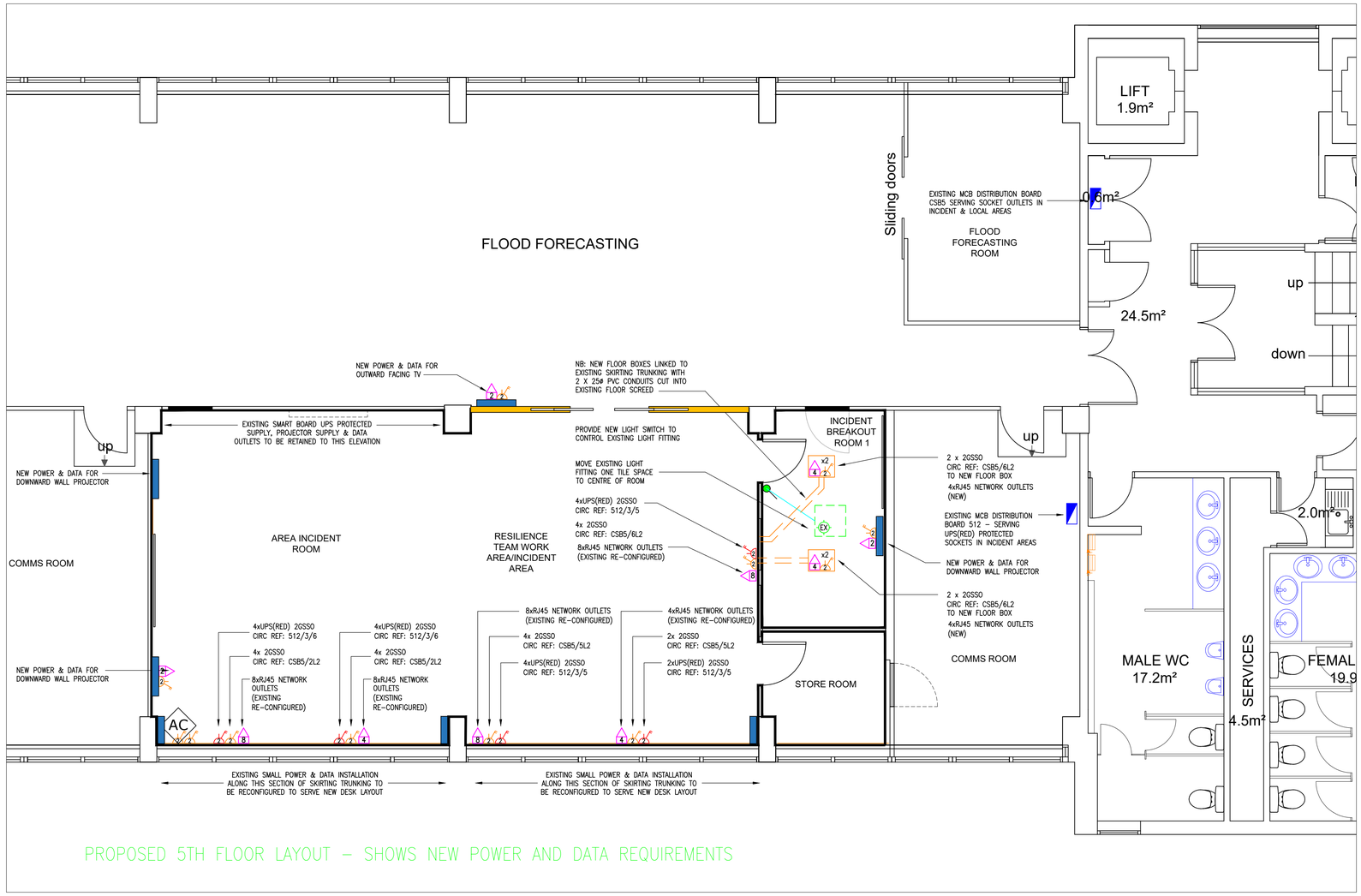
DRAWN:	JOB NO:	SCALE:
THR	2230/19/2	1: 100 1:50 @A1
CHECKED: POW	DRAWING NO: TE01	REV:
DATE: Nov 2021		

APPENDIX B

Drawing E01 – Electrical Drawing/ Specification



EXISTING 5TH FLOOR LAYOUT – SHOWS REMOVAL OR RELOCATION OF EXISTING SERVICES



PROPOSED 5TH FLOOR LAYOUT – SHOWS NEW POWER AND DATA REQUIREMENTS

ELECTRICAL SERVICES SCHEDULE OF WORKS & SPECIFICATION NOTES

1. REMOVE EXISTING SMALL POWER, NETWORK OUTLETS AND ASSOCIATED DADO/SKIRTING TRUNKINGS TO ACCOMMODATE THE REMOVAL OR ALTERATION OF EXISTING FIXED PARTITIONS.
2. RETAIN EXISTING ELECTRICAL EQUIPMENT NOTED WHICH SHALL INCLUDE THE INTERACTIVE SMART WHITE BOARD & ASSOCIATED POWER/DATA/CONTROL EQUIPMENT & RELOCATE VIDEX DOOR ENTRY HANDSET AND CCTV CAMERA
3. RELOCATE EXISTING LIGHT FITTINGS IN RESILIENCE TEAM WORK AREA/INCIDENT AREA AS INDICATED
4. ADAPT/RECONFIGURE EXISTING LIGHTING CONTROL FOR INCIDENT BREAKOUT ROOM 1
5. RECONFIGURE EXISTING SMALL POWER, UPS PROTECTED SMALL POWER AND NETWORK OUTLETS ALONG EXISTING PERIMETER SKIRTING TRUNKING TO SUIT NEW DESKING ARRANGEMENT WITHIN BOTH INCIDENT AREAS
6. PROVIDE SMALL POWER AND NETWORK OUTLETS ON NEW PARTITION TO BOTH INCIDENT BREAKOUT ROOMS 1 & 2 – ADAPT EXISTING SMALL POWER AND NETWORK OUTLETS REMOVED FROM ADJECENT PARTITION WALL TO SUIT
7. DISTRIBUTION BOARD "CSB5" LOCATED IN 5TH FLOOR LIFT LOBBY SERVICES RISER CUPBOARD
8. DISTRIBUTION BOARD (UPS PROTECTED) "512" LOCATED IN COMMS ROOM ADJECENT TO 5TH FLOOR LIFT LOBBY
9. ALLOWANCE SHALL BE MADE TO ADAPT/EXTEND EXISTING SMALL POWER FIXED WIRING CIRCUITS TO SUIT NEW POSITIONS OF OUTLETS UTILISING SIMILAR PVC INSULATED WIRING SYSTEMS FULLY ENCLOSED IN EXISTING OR NEW PVC TRUNKING SYSTEMS TO SUIT THE APPLICATION
10. ALLOW FOR PROVISION OF NEW SMALL POWER 16A RADIAL CIRCUIT TO PROVIDE ELECTRICAL SUPPLIES TO THE WALL MOUNTED DOWNWARD PROJECTORS
11. ALL ELECTRICAL SHUTDOWNS WHICH INCLUDES LIGHTING AND SMALL POWER FINAL CIRCUIT ISOLATIONS WILL REQUIRE 20 WORKING DAYS NOTICE TO THE ON-SITE FM TEAM – PERMISSION SHALL BE FORMALLY GRANTED THEREAFTER
12. ALTERATIONS TO THE FIRE DETECTION AND ALARM SYSTEM REQUIRING ZONE ISOLATION WILL REQUIRE 7 WORKING DAYS NOTICE TO THE ON SITE FM TEAM TO ORGANISE THE SYSTEM TO BE TAKEN OFF WATCH. ON COMPLETION OF REMEDIAL WORKS THE CONTRACTOR SHALL RE-COMMISSION THE FIRE ALARM SYSTEM AND PROVIDE A CERTIFICATE OF COMPLETION
13. ALTERATIONS TO THE EXISTING NETWORK STRUCTURED CABLING INSTALLATION SHALL BE CARRIED AS FOLLOWS:
    - ISOLATION OF EXISTING NETWORK OUTLETS TO ACCOMMODATE REMOVAL OR RELOCATION OF WIRING AND OUTLETS TO BE CARRIED OUT BY CLIENT'S IT PROVIDER
    - REMOVAL OR RELOCATION OF WIRING AND OUTLETS TO BE CARRIED OUT BY CONTRACTOR FOLLOWING ISOLATION
    - WIRING AND CONTAINMENT OF NEW CAT6 STRUCTURED CABLING TO BE CARRIED OUT BY CONTRACTOR LEAVING ADEQUATE CABLE LENGTH ENDS FOR TERMINATION BY CLIENT'S IT PROVIDER
14. GOOD WORKMANSHIP IS ESSENTIAL THROUGHOUT THE INSTALLATION AND THE CLIENT RESERVES THE RIGHT TO REJECT ANY PART OF THE WORKS, WHICH, IN HIS OPINION, DOES NOT CONFORM TO THE HIGHEST STANDARDS OF GOOD PRACTICE AND WORKMANSHIP. THE ELECTRICAL CONTRACTOR SHALL BE REGISTERED WITH THE NICEIC (NATIONAL INSPECTION COUNCIL ELECTRICAL INSTALLATION CONTRACTING).
15. ADAPTION/EXTENSION OF EXISTING FINAL CIRCUIT WIRING SHALL BE CARRIED OUT USING A COMBINATION OF BASEC APPROVED SOLID CORE LSZH INSULATED AND SHEATHED FLAT CABLES WITH PROTECTIVE CONDUCTOR COMPLYING WITH BS 7211 TOGETHER WITH BASEC APPROVED STRANDED CORE LSZH INSULATED AND SHEATHED CABLES WITH EARTHED METALLIC SCREEN, COMPLYING WITH BS 8436, WHERE THESE ARE TO BE INSTALLED IN WALLS LESS THAN 125MM IN DEPTH, SO AS TO MEET WITH THE REQUIREMENTS OF BS7671:2008+A3:2015.
16. ON COMPLETION OF THE WORK ALL ELECTRICAL FINAL CIRCUITS ADAPTED OR EXTENDED SHALL BE TESTED AND THE SUCCESSFUL RESULTS OF THOSE TESTS SHALL BE RECORDED ON TEST AND INSPECTION CERTIFICATES AND INCORPORATED INTO THE HEALTH & SAFETY FILE

SYMBOL LEGEND	
SYMBOL	DESCRIPTION
2	2G SWITCHED SOCKET OUTLET (WHITE) FED FROM DB CSB5
2	2G SWITCHED SOCKET OUTLET (RED) UPS PROTECTED – FED FROM DB 512
	13A SWITCHED FUSED CONNECTION OUTLET UPS PROTECTED – FED FROM DB 512
DB01	DISTRIBUTION BOARD (MCB UNLESS NOTED OTHERWISE)
?	DATA/NETWORK OUTLET – ?=GANG
SD	SMOKE DETECTOR
	LIGHT SWITCH
x2 4 2	NEW 3 COMPARTMENT FLUSH FLOOR BOX CUT INTO EXISTING SCREED – AS MK PRESTIGE OR EQUAL/APPROVED
EX	EXISTING 600 X 600 RECESSED LIGHT 4 X 18W LIGHT FITTING RETAINED

NOTES

1. THE ELECTRICAL SERVICES INSTALLATION SHALL COMPLY WITH THE REQUIREMENTS OF BS 7671 : 2018 BRITISH STANDARD REQUIREMENTS FOR ELECTRICAL INSTALLATIONS : IET WIRING REGULATIONS EIGHTEENTH EDITION
2. THE ELECTRICAL INSTALLATION WORK SHALL BE CARRIED OUT IN ACCORDANCE WITH MEICA STANDARD SPECIFICATION 369-13, LATEST ISSUE FROM DATE OF THIS DRAWING AND SUPPLEMENTARY DOCUMENTS SD01 TO SD22 INCLUSIVE WHERE APPLICABLE
3. THE ELECTRICAL CONTRACTOR SHALL READ AND UNDERSTAND THE ENVIRONMENT AGENCY CODE OF PRACTICE FOR ELECTRICAL SAFETY (CopES): PART 2 PRIOR TO WORKING ON EXISTING ELECTRICAL SYSTEMS AT GUILDBOURNE HOUSE
4. THE ELECTRICAL CONTRACTOR WILL BE EMPLOYED AS DOMESTIC SUB-CONTRACTOR TO THE MAIN CONTRACTOR, WHO WILL BE PROVIDING GENERAL ATTENDANCE AND BE RESPONSIBLE FOR SITE HEALTH AND SAFETY. ALL OTHER NECESSARY SPECIALIST ATTENDANCE TO BOTH FIRE ALARM & IT SPECIALISTS WILL BE PROVIDED BY THE ELECTRICAL CONTRACTOR
5. THE EXACT AND FINAL LOCATION OF ALL EQUIPMENT, ACCESSORIES AND WIRING WAYS SHALL BE SUBJECT TO DESIGN DETAIL AND AGREED WITH THE PROJECT MANAGER & CLIENT PRIOR TO INSTALLATION.
6. THIS DRAWING IS FOR THE PURPOSES OF DESIGN INTENT ONLY – NOT FOR CONSTRUCTION

Rev.	Amendments	Date	Drw.
-	TENDER ISSUE	19.11.21	AG

PHILIPS SURVEYORS
BUILDING SURVEYORS, DESIGNERS & CONSULTANTS

PHILIPS SURVEYORS LLP, THE OLD COACH HOUSE, 78 LOWER STREET, PULBOROUGH, WEST SUSSEX, RH20 2AA
TEL 01798 873222 FAX 01798 873444
EMAIL INFO@PHILIPS-SURVEYORS.CO.UK
WWW.PHILIPSCHARTEREDSURVEYORS.CO.UK
RICS

CLIENT:

The Environment Agency
Guildbourne House
Chatsworth Road
Worthing Bn11 1LD

PROJECT:

PROPOSED ALTERATION 2019

DRAWING TITLE:

CONVERSION OF 5TH FLOOR

REMEDIAL WORKS TO ELECTRICAL SERVICES

DRAWN:	JOB NO:	SCALE:
AG	2230/19	1:50@A1
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DATE: NOV 21		

APPENDIX C

EA SHEW COP 20 June 2020 version 2

EA LIT 13423 – Cat A checklist certified timber

EA LIT 13133 – COP for electrical safety

EA Use of plastics 25 May 2019

Department
for Environment
Food & Rural Affairs

Constructing a Better Environment

Safety, Health & Environment & Wellbeing Code of Practice (SHEWCoP)

June 2020

This publication is available at www.gov.uk/government/publications

Any enquiries regarding this publication should be sent to us at

[insert contact details]

PB [insert PB number]

www.gov.uk/defra

Document Control

Version 2 25 June 2020

Contents

Section One – Introduction

Defra is proud of its collaborative approach with those who work on the Defra Estate. As part of this Defra has CDM Client side arrangements to assist projects in securing health and safety. To that end, this SHEWCoP sets out the standards Defra expects to see being applied to construction projects on its estate. These standards are recognised industry good practice and are supported both by industry groups and the regulator, the Health and safety Executive (HSE). There is consequently a widely available basis of guidance to the application of these standards.

This documents is structured into **five sections**.

- General matters – Sections 1 and 2.
- Designer Section 3
- Contractors Section 4
- Section 5 – A Schedule of High Risk tasks which covers those tasks that are less frequent on Defra sites and consequently if a project does not include those tasks then there is no need to read that schedule.

In addition to the regular site meetings to confirm project status and review health and safety performance, Defra operates a system of **checkpoints** for certain tasks, such as those in the schedule. However, some tasks not in the schedule are also subject to a checkpoint approach, such as work at height. Where a task is subject to a checkpoint approach it is clearly identified in this SHEWCoP. The Pre Construction Information will provided an initial view of the tasks on a specific project where a checkpoint is to be used.

The checkpoints typically involve a positive confirmation that the proposed system of work remains valid and that the recognised industry controls have been applied. This check is typically made at the start of the activity concerned as it can involve confirming safety critical equipment is deployed on site on that day.

The nature of the check should be in proportion to the risk. It will typically involve the contractor using a suitable checklist and confirming the state of readiness to the Client, Defra PM and PD. Each project will plan the checkpoints and the approach to be used based on the project risk in conjunction with the Client, Defra PM and PD. For example, remote PD / Defra PM involvement by telecon can be acceptable.

It is the last opportunity to get it right and it supports our contractors by showing Client leadership. These checkpoints do not replace the contractor's management arrangements, but may well use checklists the contractor already has in place as part of their management system.

Tasks in the schedule using a checkpoint are; Ground Penetration, Overhead services, Temporary works and Confined spaces

Tasks in the main part of this document using a checkpoint are: Work at height and the Project/Public interface.

It is accepted that a contractor may have checkpoints in place for other tasks not listed here as part of the contractor's management system.

1.0 Scope

Department for Environment, Food and Rural Affairs

Safety, Health & Wellbeing

Health & Safety Policy - Statement of intent

Defra is committed to ensuring the safety, health and wellbeing of all our employees, and other people affected by what we do. This Policy applies to all core Defra employees, the places they work and the activities they carry out. It reflects legal obligations under the Health and Safety at Work etc Act 1974, and aspirations around continuous improvement and high standards. Keeping our employees safe and well is important to our business. Via organisational responsibilities and arrangements Defra will:

- provide safe and healthy workplaces for our employees, occupants, temporary workers, contractors and visitors;
- identify and assess significant hazards arising from our work and apply appropriate risk management approaches to keep our employees, and others, safe and well;
- investigate adverse events, learn from them and share lessons with others. We will also learn from events occurring elsewhere within the Defra group, the civil service and wider industry;
- ensure our employees are competent, equipped, trusted and supported to work safely. We will empower them to stop work, or challenge procedures, if they feel at risk;
- plan, organise, control, check and review our arrangements, and performance, to identify areas of good practice, and those which require further development;

This Policy is supported by our organisational structure and arrangements which includes safety, health and wellbeing standards, risk assessments, guidance and training and is complemented further by our wellbeing programme.

It can only be successfully achieved by the collective efforts of everyone in Defra. Everyone has a personal responsibility to lead, manage and own safety, health and wellbeing for themselves and others and embed positive practice into everyday business.

Clare Moriarty, Permanent Secretary of the Department for Environment, Food and Rural Affairs

July 2018

Defra recognises the key role we play delivering construction activities as defined by the Construction (Design and Management) Regulations 2015 (CDM)

Defra accepts the roles of Client under CDM 2015, and will take reasonable steps to ensure those appointed have the skills, knowledge and experience to carry out the work in a way that secures health & safety. We will also ensure whenever possible that all Principal Designers comply with their duties in regulations 11 and 12 and Principal Contractors comply with their duties in regulations 12 to 14.

This Safety, Health, Environment and Wellbeing Code of Practice (SHEWCoP) has been developed in consultation with our supply chain partners to set out expected standards for Safety, Health, Environment and Wellbeing, (SHEW) that will be applied to all design and construction work we procure and deliver.

We will make suitable arrangements for managing a project and maintaining and reviewing these arrangements throughout, so the project is carried out in a way that manages the SHEW risks. We are committed to continuous improvement as a means to achieving the goal of a harm free environment.

Planning is vitally important and adequate time should be allowed for all duty holders to discharge their responsibilities with respect to SHEW requirements. This planning also includes identifying **checkpoints** at which sensible and proportionate checks of the planned approach to risk control for a given task can occur. It can include (for example):

- an initial schedule of temporary works planned to take place as a prompt for review
- the point at which tasks involving ground penetration are expected to be commenced
- the first activity of work at height planned for the site.

Beyond these task specific checkpoints, the project plan should identify key milestones that act as a reminder to step back and review how well health and safety standards are being observed. A key milestone can be simply progress based e.g. the final few weeks of a project when the pressure is on to complete on time. These reviews can help identify ‘control drift’ and allow measures to bring health and safety back to the fore to be taken before a series of ‘near misses’ or minor incidents transforms into a serious event causing significant harm.

We therefore expect the Principal Contractor and Principal Designer in conjunction with the Defra Client and PM will establish a plan of management reviews, amended as needed as the project evolves. The nature and extent of those reviews will be in proportion to the risks of the project and are not limited to those identified by the SHEWCoP, each project should be risk reviewed in its own right.

Defra as a CDM Client should be involved in these reviews to the extent necessary in order that Defra can be reassured that the expected standards for health and safety on the project are being put in place and maintained.

Construction has been identified as a significant sustainability risk area for both our internal operations and our supply chain. We take a full lifecycle approach to the

identification and management of the significant environmental risks and opportunities in our procurement activities.

This code of practice, together with specific references to safety, health, wellbeing and the environment in tender and other documents, if followed should ensure projects consistently achieve required standards to comply with the law to ensure projects are carried out in a way that secures health and safety.

This code of practice states the Defra:

a) Commitment to safety, health, environment and wellbeing
b) Expectations of framework partners and other suppliers in respect of their health, safety, environmental, and welfare performance;
c) Arrangements for suppliers to report incidents and statistics used in benchmarking our overall performance.
d) Arrangements for assuring that the standards are being applied in practice, and defining any corrective actions required.

1.1 Health, Safety, Environment and Wellbeing Forums and Groups

Forums and Groups will be established where this is considered to be a benefit to the framework community for the sharing of information, innovation, best practice and learning to allow collective work to solve common problems and improve performance. Representatives from supply chain partners including Principal Contractors, Principal Designers and Designers will be invited to lead and attend framework meetings, along with representatives from the Operations teams and other Defra colleagues involved in procuring and managing construction work.

1.2 Supplier Development Review

SHEW performance will feed into framework level supplier development. This will include Compliance with the standards and expectations set out in this document. Defra will review it's own performance against compliance of the SHEW Code of Practice.

1.3 SHEWCoP Review

This document will be subject to a periodic review by Defra and supported by supply chain partners.

Defra reserves the right to amend this document, in consultation with representatives of our key framework partners, as and when appropriate.

Section Two

2.0 General - Socially Aware and Community Conscious Employer

Contractors and Designers are expected to:

- Use local employment and local training initiatives where appropriate and practicable
- Look for opportunities to enhance community benefits
- Encourage a diverse supply base that includes local Small and Medium Enterprises, social enterprises and the Voluntary in the Community Sector.
- Develop and integrate modern apprenticeship opportunities and encourage the consideration of diversity and equality in our decisions. Demonstrate compliance with the Equality Act 2010 through the work delivered. Projects and community engagement should be inclusive and accessible for all.
- Adopt a policy of equal opportunities to encourage a diverse workface
- Offer training and development to all staff, including the client to meet individual, project and company needs

2.1 Overarching Sustainability Requirements and behaviours

We expect our Suppliers to understand their supply chains and ensure that this approach is embedded throughout them. All suppliers will:

- Ensure that that all supplier staff working on our behalf are aware of and are trained and competent to deliver the sustainability requirements laid out in this Document.
- Engage with us and the wider industry to share best practice, innovation and lesson learned; improve and develop best practice sustainability standards and support trials of innovative products and materials.
- Engage in, attend and implement training or events that you are invited to by Defra. This may include but is not limited to workshops, webinars, toolbox talks, audits and training. The Contractor may be invited to take part in our supplier development programme.
- Adopt a lifecycle approach to the identification and management of environmental and social risks;

2.2 Health Surveillance/Monitoring

Risk assessments (including Designer's) and method statements should have full regard for managing health risks associated with the work based on the findings of the assessment.

Organisation arrangements should be in place for access to occupational health for surveillance and referrals related to work related medical issues. Health surveillance allows for early identification of ill health and helps identify any corrective action needed. Health surveillance may be required by law if your employees are exposed to noise or vibration, solvents, fumes, dusts, biological agents and other substances hazardous to health, or work with compressed air.

The Control of Lead at Work Regulations 2002 (CLAW) place a duty on employers to prevent, or where this is not reasonably practicable, to control employee exposure to lead. The Control of Asbestos Regulations 2012 includes health surveillance for non-licensed work, all workers or self employed people employed doing notifiable non-licensed work with Asbestos must be under health surveillance by a Doctor.

The risk assessment should be used to identify any need for health surveillance. The use of health surveillance as a substitute for undertaking a risk assessment or using effective controls is unacceptable.

For activities that pose a significant health risk suitable controls measure should be in place, and appropriate remedial action identified, (such as control of trigger times, PPE, RPE, etc.)

2.3 Welfare

In addition to legislative welfare requirements, construction sites will have:

- Housekeeping to a high standard for all welfare facilities e.g. regular inspection and cleaning programme.

2.4 Welfare on Short duration or Transient Sites

A transient site/project, (construction or other work related activity) is either where short duration work, (e.g. up to one week) is carried out at one or many locations, or is of a longer duration carried out while moving over a continuous geographical area. Suitable arrangements for drinking water, hand cleaning, access to hot water and sun-cream (where relevant) should be established. Also, shelter/shade from the elements, be it wind, rain or sun, and this can be a structure or a vehicle.

Only if it is specified in the Construction Phase Plan would it be appropriate to make arrangements to use facilities provided by the owner of existing premises in which the work is being undertaken, local public facilities or the facilities of local businesses. Clear documented agreement should be made with the provider of the facilities; it should not be assumed that local commercial premises can be used without their agreement. Workers should be made aware of the agreed welfare arrangements and conditions to use the facilities and informed of their location.

In all cases the standards of CDM 2015 Schedule 2 must be provided or made available. Facilities must be:

- Readily accessible to the worksite, (e.g. within a 10-minute walk or drive);
- Open at all relevant times and be at no cost to the workers;
- Of an acceptable standard in terms of cleanliness, (e.g. regular cleaning programme established) and have hand-washing facilities.

2.5 Travel

The adverse effects on the environment related to travel can be significant. Every effort must be made to reduce the air quality and emissions impact caused from delivery and travel linked to construction work, including from the supply chain.

2.6 Construction Phase Plan (CPP)

Where appointed, Principal Contractors (Principal Contractor) must provide a CPP to the Principal Designer (PD) prior to the start of the construction phase. Sufficient time, (ideally 10 working days) must be allocated to review the suitability of the CPP, and advise the Client whether it is sufficiently developed to allow construction to commence. The principles of the Resident Principal Designer SHE 'Stop - Go' Checklist should also be considered and implemented as appropriate throughout the design phase.

For single-contractor projects, the contractor must provide a CPP to the Client for review. The Client will generally involve a source of advice, such as the appointed CDM advisotr, to confirm its suitability.

Work, including site set-up, mobilisation and advanced works can only commence on site once the Client has given authorisation in writing.

Construction Phase Plans should be subject to regular review by the Principal Contractor during the construction phase of the project and in response to significant change.

2.7 Materials and Equipment

Materials and equipment must be suitable for the task and used in accordance with manufacturer's/supplier's instructions, including testing, servicing and calibration as necessary. Adequate, appropriate training must be provided to the user, including awareness of a relevant risk assessment as well as the provision of specific PPE as necessary.

Materials and equipment, when not in use, must be stored safely and securely. Safe stacking methods should always be adopted and good access/egress must be maintained. Segregation and clear signage should be in place where necessary. Handling should be carried out by mechanical means or with mechanical aids where possible to avoid or reduce manual handling injuries. Loading and unloading activities should only be carried out by authorised personnel in compliance with LOLER requirements.

Lifting is typically relatively uncomplicated on Defra sites. Nonetheless, suitable plans must be in place and relevant guidance applied. Tower cranes are rarely, if at all used on Defra sites, but if used must show the four key aspects to the safe use of cranes have been applied. Telehandlers are more commonly used and these introduce significant risk to site occupants, even if the lift itself is

simple. The Construction Plant Hire Association (CPA) provide free guidance on their safe use. Segregation of pedestrians from the machine is a key risk control aspect and must be prioritised. Furthermore, generally an excavator should not be the first or only choice for lifting, even if it is already on site.

2.8 Plant – Operational Impact and Air Quality

When selecting and using plant consideration must be made to minimise environmental impact from emissions. This includes carbon as well as local air quality impacts of nitrogen dioxide, sulphur dioxide and particulate matter emissions. All plant provided for use in an area where legal local air emission standards are in place must as a minimum meet that standard. Low carbon fuel or alternative fuel should also be considered.

In addition, all plant will be properly maintained to ensure continued operation at the most efficient levels.

We encourage innovation and technology that results in reduced emissions and air pollutants where this does not affect operational, safety or cost requirements.

2.9 Portable Appliances

All portable electrical appliances used on site should satisfy the guidance for portable electrical equipment provided by HSE (HSG 107). This provides recommended inspection regimes (table 1). Defra does not allow 220 – 240v equipment on site. Therefore, cordless tools or those that operate from a 110V centre tapped to earth (CTE) supply system so that the maximum voltage to earth does not exceed 55V should be used. The welfare cabin is considered separate from the site in this regard. The site should maintain a simple Portable Appliance Test (PAT) register. Appliances should be tested by a competent person in accordance with legislation and manufacturer's instruction. A label or sticker should be clearly visible on the appliance that identifies the last test date, and/or the next test due date.

Battery operated equipment below a rating of 40v is not required to be included. Appendix 2 of the HSE guidance provides a simple checklist for use on site to demonstrate that arrangements are in place.

Where the site features include explosive and/or flammable atmospheres then further controls will be necessary as regards suitable equipment for such locations. These must be addressed separately as part of the risk assessment for such works.

2.10 Fire

All construction sites on the Defra estate must have arrangements to deal with risks from fire. The HSE guidance (HSG 168) is taken to provide the minimum

standards acceptable. High risk sites should reference suitable sources of additional guidance as required.

Fire alarm systems will often be fitted as part of the construction work. Alternatively, buildings may have a wired-in fire alarm system already installed. The plan should be to install the fire alarm system as early as possible and, where a system is already installed, keep it in working order for as long as possible. Where they are relied on during the construction phase, it is vital that existing systems are not inadvertently disabled, for instance during work on electrical systems in refurbishment work. If they are disabled for any reason, alternative arrangements need to be provided and a plan for their reinstatement recorded. It should be noted that there is not normally any need for automatic fire detectors to be fitted during construction work. However, on high risk sites or in temporary accommodation units (TAUs) such as site offices, if there are locations where a fire might occur and develop unnoticed until it threatens people's means of escape, detectors may be appropriate.

Sequencing aspects that are important to fire safety should be clearly identified at the design stage. These aspects of sequencing and alarm arrangements are a check point with the Principal Designer for the project.

Suitable safe systems of work must be implemented via risk assessment of hot work activities, generally known as a "hot works permit" which is a controlled document. The permit to work used on site should be equally effective as the Defra Estates permit that is in place on all Defra estate sites. As a minimum requirement, this would include awareness training of the action to take in an emergency. A Muster Point should be established for evacuation purposes, and fire extinguishers appropriate for the task must be kept readily available for all hot work activities. Each extinguisher must have an in-date service sticker attached, and there should be evidence the operatives know how to use them. A risk assessment must identify when appropriate flame retardant PPE, (coveralls, hi-vis jacket or vest, etc.) should be worn for hot work activities.

Fire risk should be assessed and controlled, with specific reference to site accommodation, welfare facilities and fuel storage. The fire risk assessment should be kept under review throughout the construction phase and involve ongoing liaison and co-operation with other site occupants. A documented procedure for the action to take in a fire emergency, including an emergency evacuation exercise schedule and the location of a suitable muster point must be produced. Everyone operating out of the facility must be made aware of the procedure. There should also be evidence that the fixed equipment has been tested for safety.

2.11 Management of Change

During the construction phase of a project, changes often occur for a variety of reasons. Our experience is that an inappropriate response to change can result in teams or individuals deviating from the agreed safe system of work. For example weather conditions, ground conditions, availability of plant and equipment, failure or faults in work equipment, availability of sufficient

competent people, or the realisation that the planned and agreed safe system is not workable can generate changes. Often for good intention, teams or individuals decide to proceed with a work activity outside of agreed and documented risk assessments which can significantly increase risk and can result in an accident if there is no effective review of the risks and control measures.

Recognising our experience from numerous safety critical incidents where agreed safe systems of work were not followed after a change, Defra fully supports and encourages work to be paused on site to allow for the risks to be re-assessed and alternative safe system of work to be documented, agreed and briefed.

All operatives must be briefed on the requirement to pause work and inform their supervisor/manager when there are changes that have an impact on their ability to follow a planned safe system of work, or if they are concerned that the activities are unsafe. This is not optional, the change must be discussed with the relevant supervisor.

There may be a need to involve others in the review of risks and methods of work, such as the PD and/or the Defra PM and Client etc. The work activity should only recommence when risks have been reassessed, appropriate system of work agreed and briefed to those undertaking the work. The relevant risk assessment and method statement must be updated and a record maintained and approved by works control etc.

The action to take when a significant change occurs must be emphasized during site induction and then re-enforced via regular briefings and toolbox talks. Line managers must encourage and support this culture through reacting positively when teams pause work and report issues with systems of work and changes to them.

2.12 Accident/Incident and Near Miss Notification and Review

All accidents and incidents must be investigated to identify the possible underlying and root causes and the actions to implement to prevent a recurrence. They must be reported to the Defra Project Manager and Defra Client representative without delay. The Defra staff will use the Defra Report Form to record the details and communicate further within Defra. They will do this by following the Defra written procedure that provide for a proportionate response to the incident at hand by Defra. Appendix 1 provides a simple procedure for incident reporting.

That proportionate response is informed by the principal that it is the potential consequences and the likelihood of the adverse event recurring that should determine the level of investigation, not simply the injury or ill health suffered on this occasion.

In parallel to this Defra reporting requirement Contractors are expected to:

- follow their own accident reporting arrangements and forward a copy of this report to the Defra contract/project manager;

- the contractors organisation undertake their own accident/incident investigation;

- the contractor reports any RIDDOR incidents/incidents to the HSE;

- the contractor provides Defra with regular accident management information where specified in their contract;

- that sub-contractors have appropriate accident reporting arrangements in place

- forward reports from sub-contractors to their Defra contract manager as they would their own accident reports;

Defra will wish to be assured that an appropriate investigation is undertaken by the contractor and also ensure any elements under Defra control are investigated by the relevant Defra lead appointed for the incident.

Defra will look to the HSE Guidance HSG245 when considering the needs of a particular incident investigation and the adequacy of any incident reports produced by Contractors.

Equally, that same standard is applied to Defra investigations where there are aspects of an incident that are influenced by Defra actions or inactions.

In all cases for the investigation to be considered adequate then the immediate, underlying and root causes need to be identified along with the actions to be taken to prevent recurrence.

2.13 Materials Management/Resource Efficiency

Contractors and Designers will:

Use Site Waste Management Procedures effectively on all Projects.

- Take advantage of opportunities for standardisation, prefabrication, off-site manufacture and locally sourced materials. As prefabrication or off site manufacture can be a dichotomy with locally sourced materials
- Encourage innovation of cost-effective low carbon solutions
- Prioritise, as far as practicable, energy efficiency initiatives on site and in design, such as connection to the grid, insulated cabins, fuel efficient plant and vehicles, low carbon concrete.
- Adopt a zero-waste approach
- Make the best of available materials, minimise the volume of materials required, minimise wasted materials (i.e. adopt a zero waste principle and design for passive/efficient operation).

- Seek to use materials that can be sourced locally and reduce the carbon impact of transportation.
- Be compliant with relevant Government Buying Standards, providing evidence of compliance when requested. This is to include the use of environmentally preferable chemical products where they exist (e.g. low-VOC paints).
- **Recycled Aggregates and the WRAP Quality Protocol**
  There is a wide range of aggregates available in the UK for use in construction. Sources include crushed rock won from quarries; sand and gravel extracted from pits; marine dredged aggregates; blast furnace and steel slags, by products of the iron and steel
  industry and other metal processes; and recycled aggregates.
- **For more information, see website -**
  https://mineralproducts.org/documents/Information_Sheet_Recycled_Aggregates_WRAP_QP.pdf

2.14 Waste

Site Waste Management Procedures must be used effectively on all sites, and an approach that reflects the application of the waste hierarchy must be used. The waste management procedures must be reviewed throughout the project to ensure it is current and takes into account any changes in design and construction. An example of a procedure which would require reviewing during a construction project would be the pollution prevention emergency procedure.

2.15 Carbon Management

The reduction in carbon should be a serious consideration for all aspects of a construction project and suppliers must:

- Design, construct and operate assets, developing the lowest impact solutions over their full lifecycle;
- Create innovative low cost solutions that use natural resources wisely and reduce consumption by using materials efficiently across all supply chains to reduce waste, carbon and water use and consider and reduce the embodied impacts;
- Prioritise, as far as practicable energy efficiency initiatives as per the earlier comments in section 2.13.

2.16 Climate Change Risk and Adaption

Suppliers may be required to produce supply chain maps for key and/or vulnerable materials as part of this Framework, and may be selected to work with Defra as part of its work to help understand where the risks currently are for its key and/or vulnerable materials.

2.17 Timber

Timber must be specified, sourced and purchased from legal and sustainable sources, with an audit trail from forest to end use. Recycled timber should be used ahead of virgin where appropriate.

2.18 Defra Health & Safety Assurance

Health, Safety and Environment assurance for construction projects will be undertaken by Defra Group FM. Findings will be communicated to those identified by the project communication plan.

Where an auditor deems an unsafe situation to be of significant concern, they will have the authority to stop the work. This is not restrictive to injury but also to the health risks associated to construction work. The work will not recommence until a review of the Risk Assessments and Method Statements and remedial action has been taken.

Section Three

Principal Designer and Designers

Health, Safety and Environment

Health & Safety Specific

3.1 Construction (Design and Management) Regulations 2015 (CDM 2015)

3.1.1 Principal Designer (PD)

The Principal Designer will be retained for the duration of the Project.

In liaison with the Client, Principal Contractor, Designers and Contractors the Principal Designer has an important role in influencing how the risks to health, safety and the environment should be managed and incorporated into the wider management of a project. The Principal Designer's role involves effective communication and coordination of the work of others in the project team to ensure that significant and foreseeable risks are managed throughout the design process.

3.1.2 Designers

Designers include architects, architectural technologists, consulting engineers, MEICA officers and advisors, landscape architects, quantity surveyors, interior designers, temporary work engineers, chartered surveyors, technicians or anyone who specifies or alters a design. They can include others if they carry out design work, such as Principal Contractors, and specialist contractors, e.g. an engineering contractor providing design, procurement and construction management services. Where Clients become actively involved in designing in relation to their project, they may also be considered to be designers.

3.2 Competence – Principal Designers

Defra utilises a range of contractors for construction work. The competence standard applied for Principal Designer's is that recognised by industry, namely skills, knowledge and experience, for the particular role and specific programme of works in question. Where contractors are available under framework agreements competency checks are carried out as part of the tendering and awarding process for that framework. Once a framework has been awarded, individual project requirements within a wider programme are

again considered reflecting recognised industry standards. By using recognized frameworks, the number of checks required reduces and the Client can be confident that all names on the framework have already been scrutinized and a robust appointment can be made.

3.3 Design Risk Assessments and Buildability Statements

All designers need to address their design risks; site wide and task specific. They will ensure that all foreseeable risks are identified and those which cannot be eliminated are mitigated by design options to reduce the risks. Suitable controls must be identified by the designer for any residual risks. These residual risks or mitigation requiring specific controls, or which may be unusual or not immediately apparent to the contractor shall be clearly identified.

Occupational health issues must be given consideration, as well as safety issues, both in terms of the “buildability” of the design, and also in terms of the ongoing use and maintenance of the asset. For example, construction processes introducing risks from dust, such as respirable silica, should be designed out where possible. For any COSHH substances specified as part of a design a Material Safety Data Sheet, (MSDS) must be made available to identify the specific health risks the substance poses.

A task specific ‘buildability’ statement will be provided by each designer, that identifies the assumptions made in their design, the anticipated controls and demonstrates that the risks incurred by their design can be managed appropriately. This does not dictate methods of work to a contractor, only demonstrates that the designer has complied with their obligations.

Designers must liaise on a regular basis with the Principal Designer to discuss their design risk assessments, buildability statements.

3.4 Design

Designers will use the Red Amber Green (RAG) list when considering options in both design and construction phases. Where work is to be contracted outside the framework, they will ensure that the organisations used also comply with the RAG list requirements.

Designs which require sign off for Amber or Red items need to be identified early and justification provided by the designer, in conjunction with the Principal Designer to allow sign off by the designated person.

The principles of the Principal Designer SHE ‘Stop - Go’ Checklist should also be considered and implemented as appropriate throughout the design phase.

Where work involves potential injury to members of the public an interim change to the RAMS or Traffic Management Plan will need to be considered.

3.5 Project/Public Interface

Designers with appropriate experience and/or qualifications, must assess and control any public safety risks which arise from their design, specifically for the operational asset once construction is complete.
Site hoarding, where used, must be also be designed by suitably competent designers and be subject to regular inspection as with other temporary works. The temporary works forum provides a guide to good practice. This is a checkpoint for the project.

3.6 Traffic and Pedestrian Management

Designers must identify in their designs the assumed access and egress routes to and from sites, with due consideration to the assumed plant to be used including deliveries of materials.

Designers must outline in their design on-site traffic management assumptions on drawings with regards to access points, compound locations, plant and vehicle movements, pedestrian movements, any space constraints. Where required by specific activity, also consider; ground bearing capacities, culverts, cattle grids, bridge weight capacities and height/width restrictions, etc.

3.7 Ground Penetration

This activity is considered to potentially be high risk by Defra. This view is supported by the industry statistics maintained by Zurich Insurance that finds for the electricity network (above and underground) that:

> *"on (long term) average there are twelve deaths and approximately six hundred serious injuries attributed to contact with the electricity network every year" (Ref Zurich Technical Library*)

Further comment on this activity is therefore placed in the schedule to this document. This is to register the fact that it is considered to be high risk by Defra and that there are industry recognised standards that must be applied. Furthermore, the application of those standards is to include agreed "checkpoints" between the Defra PD and the Principal Contractor, involving the Defra Client and PM as required. These checkpoints are to be formally recorded as project planning milestones.

If the project calls for this task activity, please refer to the schedule within this document.

3.8 Working near Overhead Cables

This activity is considered to potentially be high risk by Defra. This view is supported by the industry statistics maintained by Zurich Insurance that finds for the electricity network (above and underground) that:

> *"on (long term) average there are twelve deaths and approximately six hundred serious injuries attributed to contact with the electricity network every year" (Ref Zurich Technical Library)*

This activity is therefore placed in the schedule to this document to register the fact that it is considered to be high risk by Defra and that there are industry recognised standards that must be applied. Furthermore, the application of those standards is to include agreed "checkpoints" between the Defra PD and the Principal Contractor, involving the Defra Client and PM as required. These checkpoints are to be formally recorded as project planning milestones.

3.9 Work at Height

This task is high risk. The statistics speak for themselves. Falls from work at height remain the single greatest cause of death in industry. Half of all fall from height workplace deaths over the last five years were in the construction sector.

Unlike, for example, work near utilities which Defra typically undertakes relatively infrequently, work at height is common and frequent. Consequently this activity is of high concern to Defra due to its typical prominence in facilities management works.

Therefore, this task **has not been extracted to the schedule of high risk tasks to ensure all Defra contractors are clear on the standards required**.

These include the use of checkpoints as part of the systematic management and monitoring arrangements. The forward planning for these should arise from the liaison activities of the principal designer with the principal contractor and should be in proportion to the risk. They should be captured as milestones in the project plans.

The purpose of such checkpoints includes providing a means for the Principal Contractor to confirm that:

- Effective, preventative and protective measures have been put in place on the site to control risks

- The right plant and equipment and tools are provided and they reflect the work at height hierarchy, including being capable of being fully deployed in the work location e.g. a correctly erected tower scaffold inside a building
- Adequate supervision and monitoring has been put in place from the outset and the agreed mechanism to evidence those arrangements is in place e.g. Site managers RAMS review and visual observations on site

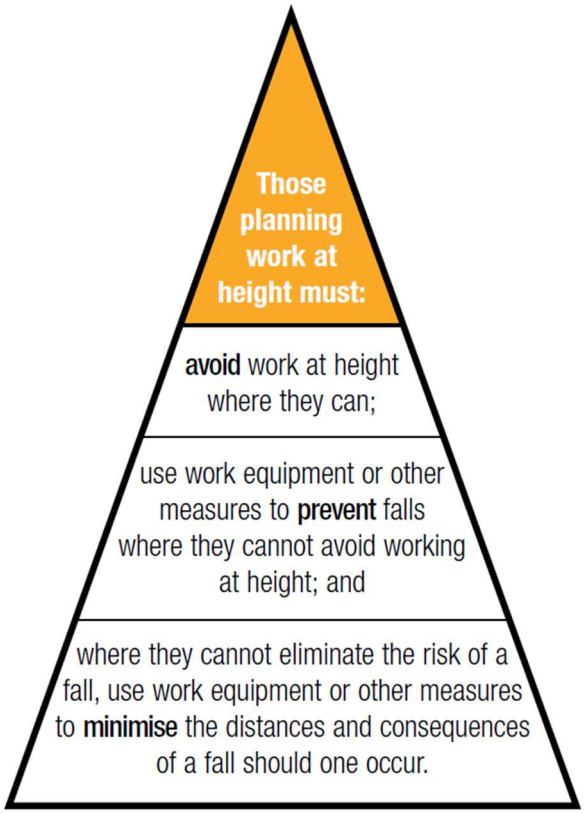
These arrangements for confirming the site is properly set could be described in the project Construction Phase Plan (CPP) or via a linked document if that is preferred. These checkpoints are in addition to any design reviews prompted by the below, which are not an exhaustive list.

Designers involved in work at height are expected to be able to show that they have considered relevant sources of guidance and the project pre-construction information when applying the general principles of prevention. The strict hierarchy of control of the work at height regulations must be applied.

The available guidance includes that provided by HSE and other bodies and includes HSG33 Health and safety in roof work.

Designers need to consider initial construction work as well as future maintenance, cleaning, proposed use and demolition requirements. This will need to include any temporary works arising during the build and following lifecycle stages.

The Work at Height Regulations 2005 (as amended) set out a hierarchy of fall protection measures to be taken when planning work at height. The hierarchy has to be followed systematically and only when one level is not reasonably practicable may the next level down be considered.



- always consider measures that protect everyone who is at risk (ie collective protection systems such as scaffolds, nets or soft landing systems) before measures that only protect the individual (ie personal protection measures such as a harnesses);
- always consider passive systems such as nets (where the individual does not have to do anything to activate the system) before active systems such as harnesses (where the worker has to clip on); and
- make sure work is carried out only when weather conditions do not put the health and safety of workers in danger.

Other aspects include, but are not limited to:

- Prioritising staircase access on scaffolded buildings in accordance with NASC guidance note SG25:14 Access and Egress from Scaffolds, via Ladders and Stair Towers etc.
- Provision of collective prevention measures around excavations
- The measures for fall prevention from form work where work at height is required. In particular, failures often occur on fairly simple structures erected by smaller falsework contractors and all falsework must have a design review for the aspect of preventing falls.
- The proposal to over clad or replace a roof must be subject to a design review to confirm the work plan for; falls into the building, falls through the existing deteriorated roof covering, fall through any know fragile surfaces such as lights

and smoke vents and falls from leading edges are considered. The use of liner panels fixed below a purlin should be recognised as likely fragile.

Short duration work (this is work measured in minutes NOT hours and includes that ahead of a planned larger job) must equally have a checkpoint between Principal Contractor and Principal Designer to agree the method and management arrangements.

The work should also consider the building setting to consider aspects of material choices. For example, such as roof panel sizes in proximity to overhead lines or where site restrictions limit the use of lifting equipment.

The maintenance aspects should include design features that seek to remove the hazard e.g. lighting or CCTV masts that can be lowered for equipment testing / maintenance. Where access to height remains then the provision of permanent stairways for access and collective fall prevention measures prioritised to be able to show the work at height hierarchy has been properly considered.

HSE provides extensive guidance on safe working at height in the publication HSG33. Defra expects that guidance to be properly applied at all times.

The sources of guidance includes HSG 150 Health and safety in construction 2005 and the HSE safe use of ladder guidance HSG 455. The HSE guidance 455 which are appropriate to Defra projects states that:

> "short duration is not the deciding factor in establishing whether use of a ladder is acceptable or not – you should have first considered the risk. As a guide, if your task would require staying up a leaning ladder or stepladder for more than 30 minutes at a time, it is recommended that you consider alternative equipment.

3.10 Temporary Works Design

This activity is considered to potentially be high risk by Defra. This view is endorsed by HSE which notes that:

> "A temporary works failure on a project is almost always a high consequence event" (HSE 2016).

For this reason the activity is to be subject to a checkpoint process with the Principal Designer and Principal Contractor that will utilise a schedule of planned reviews based on the project temporary works planning. These will involve a combination of off and on site reviews in proportion to the complexity.

These arrangements will be in proportion to the risks involved, but in all cases a temporary works written procedure must exist.

This activity is therefore placed in the schedule to this document to register the fact that it is considered to be high risk by Defra and that there are industry recognised standards that must be applied. Furthermore, the application of those standards is to include agreed "checkpoints" between the Defra PD and the Principal Contractor, involving the Defra Client and PM as required. These checkpoints are to be formally recorded as project planning milestones.

3.11 Confined Spaces

Confined space working on the Defra Estate is not common. However, it is a recognised high risk task that demands a high standard of planning of the safe systems of work, competence of those involved and communication and monitoring arrangements.

This activity is therefore placed in the schedule to this document to register the fact that it is considered to be high risk by Defra and that there exists an Approved Code of Practice that brings a legal requirement. Following the guidance is not compulsory unless specifically stated, and Duty holders are free to take other action.
But if a Duty holder follows the guidance then they will normally be doing enough to comply with the law.

Furthermore, the planning and conduct of the work is to include agreed "checkpoints" between the Defra PD and the Principal Contractor, involving the Defra Client and PM as required. These checkpoints are to be formally recorded as project planning milestones.

Environment Specific

3.12 Designer Compliance

Designers will ensure:

They take into account the general principles of prevention and take into account any pre construction information :

a) They demonstrate application of principles of prevention in their design decision making process and compliance with the RAG List.
That environmentally sensitive areas are located and segregated to protect them from harm. These areas must be clearly marked on drawings, and included in site rules.
b) They avoid impact to the environment by planning and managing their activities appropriately, and by maximising environmental opportunities.
e) Suitable information is provided on environmental risks associated with any design
c) Any seeds or plants selected for planting schemes must comply with local *provenance standards stipulated by Flora Locale* or other competent authorities such as Natural England or the Forestry Commission and must not include non-

native species particularly those listed within Schedule 9, Wildlife & Countryside Act 1981

d) Projects are surveyed for invasive non-native animals and plants listed on Schedule 9, Wildlife & Countryside Act 1981Non-Native Species Secretariat, such as Japanese knotweed and giant hogweed. Guidance on identification of these species is available from the Non-Native Species Secretariat.

Section Four - Principal Contractor and Contractors

Health, Safety and Environment

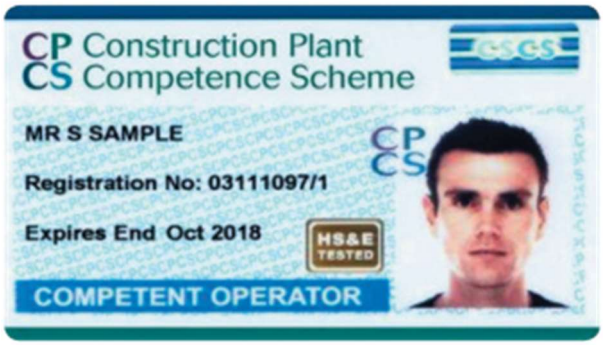
Health, Safety and Wellbeing Specific

4.1 Construction (Design and Management) Regulations 2015 (CDM 2015)

4.1.1 Principal Contractor (Principal Contractor)

The Principal Contractor is expected to take care in the selection and supervision of subcontractors. Particular attention should be given to assessing the competence and experience of labour only subcontractor personnel and of plant operators. Plant operators should be trained, competent and authorised to operate the specific plant in use. Training certificates from recognised schemes help demonstrate competence and certificates should be checked for validity.

An example of a CPCS card for a competent operator would look like this:



The Principal Contractor must plan, manage and monitor the construction phase and coordinate matters relating to health and safety during the construction phase to ensure that, so far as is reasonably practicable, construction work is carried out without risks to health or safety. The effort the principal contractor devotes to carrying out their duties should be in proportion to the size and complexity of the project and the risks involved.

In particular, principal contractors must ensure that:

- those engaged to carry out the work are capable of doing so and have the necessary skills, knowledge and experience and organisational capabilities;
- effective, preventative and protective measures are put in place to control the risks; and
- the right plant, equipment and tools are provided to carry out the work involved.

Managing people to prevent and control risk requires leadership. Principal contractors can demonstrate visible leadership through the actions of their managers. These actions include setting standards for working practices and providing an example by following them.

HSE provides guidance to the legal duties specific to construction work. This guidance discusses in detail the Principal Contractors role in Planning, managing, monitoring and coordinating the construction phase.

Defra will hold both the Principal Contractor accountable for their performance and that of their supply chain in meeting these standards during the construction phase of the project.

4.2 Competence

4.2.1 Management Supervision

Each Framework Partner and CDM duty holder is responsible for strictly ensuring the competence of each organisation, team and individual to carry out their undertaking to recognised standards.

The SMSTS standard for site management and the SSSTS for site supervision are both recognised industry standards. For some small contractor companies who specialise in single trades, for example, scaffolders they can hold equivalent training as alternatives to SMSTS and SSSTS. For some simple tasks it would not be appropriate to the risk of the work to ask for SMSTS. Through discussion and review between the Client and the Resident Principal Designer (RPD) an agreement should be reached on what would be considered as appropriate evidence of competency and recorded for the simpler jobs.

4.2.2 Operative

Everyone working on site, including visiting workers, shall have suitable evidence of competency to fulfil their role.

This does not apply in the case of:

- Infrequent visitors who have been provided with a visitor's site induction and are escorted at all times (typically Defra Client side staff).
- The emergency services and enforcing authorities.

4.3 Project/public Interface

Risks to the public must be assessed and suitably managed on all sites. There must be specific management controls where construction work is adjacent to or affects public highways, footpaths and bridleways. This should include a specific risk assessment, and where appropriate compliance with conditions specified in the licence issued by the relevant highway authority.

The history of the site in terms of previous unauthorised access by members of the public to a site e where construction activities were in progress must be a factor in the control measures chosen. Such previous history will demand the highest standards to prevent such future entry.

Site barriers such as hoarding or fencing to control unauthorised access must be erected according to manufacturers' instructions or follow temporary works design that must consider wind loading. The Principal Contractor must ensure that the necessary steps are taken to prevent access by unauthorised persons to the construction site.

Sites should be suitably gated, which should remain closed or manned when open to receive deliveries. Plant access should be separate from pedestrian access, both of which should be gated. Internal works will naturally change this requirement as needed but a large area or entire floor undergoing refurbishment should prevent inadvertent entry by Defra staff. Fibre board screens with integral doors are available. HSG151 provides useful guidance.

Every effort must be made during the planning and management of activities to reduce the impact on the public and the impression of a 'considerate constructor' should be given at all times. This includes reducing noise, dust and vehicle/plant movements as far as reasonable.

Construction teams should seek to engage with the community and respond promptly to complaints (relating to on and off-site activities), put things right and seek feedback.

4.4 Site Induction

All persons on a Defra construction site must receive a site health, safety and environmental, induction. This must be carried out before being allowed to undertake a work activity. The site specific induction should include site hazards and risks, site rules (such as PPE requirements), emergency action and the accident/incident reporting procedure

Visitors to the site must be escorted at all times, and receive an induction albeit not so detailed as the operatives' induction, (e.g. site rules, PPE requirements, action to take in an emergency, etc.). Defra Client side staff are not required to carry CSCS cards.

4.5 Briefings and Toolbox Talks

A daily briefing should be given by supervisory staff (e.g. roles named at 4.2.1 as Management/ Supervision) to the workforce (including sub-contractors) prior to them commencing work activities to ensure they have a good understanding of the tasks and associated hazards, risks and precautions. Further briefings should be carried out during the day if there are any significant changes that could affect the work activity, (update to risk assessment or method statement, changes in climate conditions, accident/incident on site, etc.). There needs to

be due regard to transient/migrant labour and tailor the materials, briefing and understanding checks accordingly to ensure comprehension. A mechanism should be established to confirm a good understanding of the briefing by the audience, (e.g. a questions and answer session after the briefing). If there are any doubts, issues or concerns related to the briefing, then the works should be delayed until safety can be assured to an acceptable level.

A toolbox talk should be given to the workforce, (including sub-contractors) at regular intervals, (e.g. at least weekly for projects of more than 30 days). The talk should be on one or more health, safety, wellbeing and/or environmental topics, and should be relevant to the work activities on site.

Records of briefings and toolbox talks should be maintained and be readily available for audit purposes.

Any tasks subject to a checkpoint approach that are planned for that day should include review of the relevant checkpoint requirements as part of the briefing and that review must be recorded.

4.6 Site H & S Signage and Security

Appropriate H&S signs must be displayed at the site entrance to warn of the hazard potential and specific site requirements, such as PPE, speed limit, etc. Key H&S documentation in accordance with legislative and company requirements, (e.g. H&S Law poster, F10 when applicable), Employers' Liability (Compulsory Insurance), emergency information, should be displayed where it is clearly visible to the workforce, (e.g. site office and welfare area).

Effective security must be established around the project perimeter and work area, (e.g. double clipped Heras fencing or hoarding) to prevent any unauthorised entry and gated access provided.

4.7 Housekeeping

A good standard of housekeeping must be established on site at the earliest opportunity and maintained throughout the project duration. Methods must be in place to collect rubbish/redundant materials, and suitable containers positioned in strategic places. Adequate, appropriate means for materials and waste storage, and where necessary segregation arrangements must be maintained in accordance with the site waste management procedures.

4.8 Welfare – Shower Facilities

Shower facilities will be provided in line with legislative requirements, based on risk assessment. The inclusion of showers would need to be agreed before the Construction Phase Plan is submitted for review by the Principal Designer. Otherwise shower facilities need not be provided under this Code of Practice.

4.9 Personal Protective Equipment

The task risk assessments and site rules will determine the PPE requirements.

The recognised typical PPE standard for a Defra site is as follows:

- Hard Hat to BS EN397:2012
- Safety Boots with protective toe, mid-sole and ankle support – Rigger Boots are no allowed on Defra sites.
- High visibility jacket or bib or coveralls with reflective banding (Class 2 or 3) complying to BS EN 471
- Light eye protection, suitable for the light levels being experienced to BS EN 166F
- Gloves to BS EN 388 (the required standard is a high protection glove i.e. 4-5-4-4.

Note this is set as a minimum. For specific tasks, for example such as Grinding, Drilling, a higher level of protection will be required for Eye Protection – BS EN 166B

The actual requirement is by risk assessment and by setting site rules which must be followed. The assessment may find requirements are needed beyond the recognised standard eg flame retardant clothing for some tasks, such as welding and working within set distances of a buried gas or electric utility.

In the rare circumstances where a PPE assessment may identify that the minimum PPE would pose a danger to an operative carrying out a specific task, the Contractor must ensure the PPE assessment is adapted accordingly.

Flame retardant clothing must be worn when excavating within 500mm of a known live electric or gas main, unless this requirement is risk assessed out.

A sufficient quantity and variety of PPE, such as gloves, safety glasses, high visibility clothing, hearing protection and hard hats must be available on site to ensure there is a reasonable provision for replacement of damaged or lost items and to provide for visitors attending site.

4.10 Dust Control and Respiratory Protective Equipment

Contractors should avoid work activities that create hazardous dust or fumes. When this cannot be avoided, suitable control measures must be implemented to protect anyone near the exposure location. Suitable extraction/ventilation should be installed as necessary to reduce the level of exposure. When controls cannot eliminate the exposure potential, then Respiratory Protective Equipment, (RPE) must be provided.

A risk assessment should be carried out to identify the type of RPE (respirators or breathing apparatus) required and the findings recorded. RPE has an assigned protection factor (APF) which shows how much protection it gives the wearer. The general level for construction dust is an APF of 20. This means the wearer only breathes one twentieth of the amount of dust in the air.

- RPE with an APF of 20 will have a FFP3 type marked on the mask and is more effective than RPE with an APF of 10 which will have a FFP2 marking.
- FFP3 is the most advisable type to use for work that does or could create high dust levels or involves silica or wood dust

HSE provides clear guidance of the control measures that are typically applied for common construction tasks that create a dust health risk. It is CIS36 available at http://www.hse.gov.uk/pubns/cis36.pdf. Defra expects such measures will be deployed as a minimum.

Woods vary significantly in their harmful effects, but generally RPE with an APF of 20 is appropriate. The FPP rating should therefore be FPP3.

HSE provides specific guidance for wood dust and notes that, wood work may involve a number of quick cuts or short-duration sanding. That does not mean it is low risk. Wood dust can cause serious health problems. Carpenters and Joiners are four times more likely to get asthma compared with other UK workers. This means the controls need to be effective and wood dust exposures need to be controlled to levels as low as is reasonably practicable.

On Defra sites, wood machining tools will always be used as a package with on tool extraction kit such as HEPA rated vacuums and with RPE being used by the worker.

HSE guidance on HEPA vacuums is provided by Construction Information Sheet No 69.
Adequate, appropriate training, (including fitting, use, maintenance, replacement and disposal) must be provided to the wearer of the RPE and records maintained. The RPE supplier should provide information on the training required to use and maintain their products.

Respirators or face masks must therefore generally be to the FFP3 standard as a minimum and the wearer must undergo face fit testing by a competent provider. The testing should be repeated on a regular basis and also if the users face changes through, for example, weight loss/gain, scars etc.

The Construction Dust Partnership is an industry initiative and provides a single point to access guidance. It is hosted by the CITB website.

4.11 Risk Assessment and Method Statement

The Principal Contractor is ultimately responsible for safety, health and environmental management on site during construction. Risk assessments and method statements must be produced in a style, language and level of detail suitable for the employees who will be working in accordance with them.

All operatives must be briefed on the hazards, risks and precautions related to their work activity. Further briefings should be carried out as the work progresses. In particular, when hazards and risks increase, such as the introduction to site of plant/machinery, other contracting companies, extreme weather conditions or on any significant change to the content of a risk assessment or method statement.

Construction Phase Plans must identify where a schedule of risk assessments and method statements for significant activities during construction are held. The documents must be updated when changes occur on site or new hazards/activities come to light. Revised version must be forwarded to the Client, Defra Project Manager, Principal Designer and the Site.

The Client in conjunction with the Principal Contractor and Principal Designer will periodically review arrangements for the identification and management of risk. They may comment upon and offer suggestions regarding risk

assessments, method statements and permits, but the Principal Contractor or Contractor for single-contractor projects retains ultimate responsibility and may choose to accept or not accept any suggestions made.

If any reviewers are concerned that the documented systems will lead to undue risk, they will advise the contractor of their concerns and inform the Client, Principal Designer, and Defra Project Manager. Appropriate remedial action should be agreed and taken before the associated work activity takes place.

4.12 Method Statement Briefings

Operatives undertaking physical work will be briefed on the related method statement by the relevant supervisor. Method statements will be debriefed ('brief back') to operatives before the second use of that method to ensure that staff have:

a) Understood the method statement.
b) Any defects in the method statement discovered during the first period of use can be raised and remedied before work continues.
c) Any changes to the method of works can be added to the method statement and re-briefed to the operatives before starting works.

4.13 Control of Substances Hazardous to Health (COSHH)

COSHH covers substances that are hazardous to health and they can take many forms, including: chemicals, products containing chemicals, fumes, dusts, vapours, mists, nanotechnology, gases and asphyxiating gases, biological agents, and include banned substances such as Triclosan (floor adhesive).

All substances must be purchased from reputable suppliers, and be used, stored and disposed of in accordance with the supplier/manufacturer's recommendation and the Site Waste Management Plan (SWMP). Someone with the relevant competency should complete a COSHH assessment using details taken from the substance's Material Safety Data Sheet (MSDS). Prior to use the user of the substance should be made aware of the COSHH assessment and the MSDS and both documents should be kept readily available at the job site.

When selecting products due consideration should be given to the relative health risks arising from their application and use. Preference should be given to specifying non-hazardous or least hazardous products to reduce the risk of harm to health.

4.14 Permits

A permit system should be implemented to control hazardous activities whenever there is a significant risk, (typical examples include Hot Work, Confined Space, Excavations, Electrical, etc.). This would also include 'live' structures, e.g. a pumping station where equipment could start up

automatically. The arrangements must be clear and properly implemented, so that all concerned fully understand its purpose, their roles and responsibilities, and the various related forms. Evidence should be available that those issuing a permit and those receiving a permit have received adequate, appropriate awareness training in the permit system should be operated (as a minimum a toolbox talk or briefing). The importance of adhering to the permit system must be communicated to all concerned and permit violations must be avoided.

Specific named individuals responsible for issuing a permit must be identified in the Construction Phase Plan along with the procedure for obtaining and closing the permit.

4.15 Hand Arm Vibration (HAV)

Contractors must assess and identify measures to eliminate or reduce risks from exposure to HAV so that employees are protected from risks to their health. Equipment with the potential to cause HAV must be provided by a reputable supplier. The exposure time limit for use must be documented, and the user made fully aware of the hazard, risks and precautions. The time limitation details should be specified on a tag on the equipment, usually provided by the supplier. Reducing the time spent operating the equipment or finding an alternative method of doing the work should be considered in preference to providing additional, specific PPE.

4.16 Lone Working

Defra would not normally expect contractors, designers or visitors to undertake any lone working except where the risk involved is no greater than for a member of the public in a non-construction environment, (e.g. very low risk activities, whilst travelling to sites, inspecting completed works from a public access, etc.). The potential for lone working must be identified in a risk assessment and appropriate precautions implemented. In all instances where contractors elect to undertake lone working, suitable documented arrangements including monitoring and emergency arrangements must be in place.

4.17 Ground Penetration

This activity is considered to potentially be high risk by Defra. This view is supported by the industry statistics maintained by Zurich Insurance that finds for the electricity network that:

“on (long term) average there are twelve deaths and approximately six hundred serious injuries attributed to contact with the electricity network every year” (Ref Zurich Technical Library)

This activity is therefore placed in the schedule to this document to register the fact that it is considered to be high risk by Defra and that there are industry recognised standards that must be applied. Furthermore, the application of those standards is to include agreed “checkpoints” between the Defra PD and

the Principal Contractor, involving the Defra Client and PM as required. These checkpoints are to be formally recorded as project planning milestones.

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This activity is considered to potentially be high risk by Defra. This view is supported by the industry statistics maintained by Zurich Insurance that finds for the electricity network that:

> *"on (long term) average there are twelve deaths and approximately six hundred serious injuries attributed to contact with the electricity network every year" (Ref Zurich Technical Library*)

This activity is therefore placed in the schedule to this document to register the fact that it is considered to be high risk by Defra and that there are industry recognised standards that must be applied. Furthermore, the application of those standards is to include agreed "checkpoints" between the Defra PD and the Principal Contractor, involving the Defra Client and PM as required. These checkpoints are to be formally recorded as project planning milestones.

4.19 Working at Height

Roof work is high risk and requires close attention to detail at all stages. Rigorous supervision is needed to make sure that the agreed method is followed in practice.

The use of working at height equipment must be captured on a risk assessment, and the hazards, risks and precautions shared with the user prior to use. The check of arrangements, even for limited work at height, must take place prior to the work activity starting. This check to involve the Principal contractor and where the risk demands, the Principal designer in combination. A record of these checks must be made and the basis of the checking noted, such as visual check by site manager in conjunction with method statements and checklists.
For the first instance of work at height involving a new location or newly introduced or adapted working at height equipment, the monitoring and supervision arrangements will involve a visual check by the site management prior to work commencing.

Mobile towers should only be erected and inspected by personnel trained to a suitable standard e.g. PASMA training specification. The SSOW to be used for the tower erection and dismantling should be stated in the RAMS and for internal work a visual check made that the tower can be fully assembled in the available space. i.e. the working platform must be fully edge protected.

Scaffold should be assembled to a generally recognised standard configuration, e.g. National Access and Scaffolding Confederation (NASC) Technical Guidance TG20 for tube and fitting scaffolds or similar guidance from manufacturers of system scaffolds. Non-standard configurations must be

subject to temporary works design and compliant with the European standard for scaffolding: BS EN 12811. This work must only be undertaken by competent workers evidenced by suitable current scaffolders CISRS cards. The requirements of SG4 latest edition must be observed.

A 'Scafftag', (plastic card inside a holder) should be placed in a prominent position on scaffold or mobile tower with relevant details, including the date of the last seven-day inspection. This is in addition to the scaffold inspection register which should be included site documentation system.
When constructing temporary work platforms, access ways, excavations, etc. a stairway system will be prioritised over ladders. Where ladder access is used it will follow the NASC hierarchy for configuration.

Mobile Elevated Working Platform (MEWP) will only be sourced from a reputable supplier, and will be operated by someone with the Principal Contractor or IPAF standard training and in accordance with manufacturer's instructions. An emergency rescue plan must be established for any MEWP operation.

Podium steps should be prioritised over 'A' frame steps or ladders whenever possible. They should be inspected by the user prior to use, and included in a regular documented inspection programme.

The use of a ladder on site will be avoided whenever possible. If this is unavoidable then the ladder must have a unique identification mark or 'Ladder Tag' that corresponds with a Ladder Register and a regular documented ladder inspection programme implemented. HSE provides guidance (INDG455 and a mini website http://www.hse.gov.uk/work-at-height/index.htm) on ladder use and this must be followed.

Short duration work (this is work measured in minutes NOT hours and includes that ahead of a planned larger job) must equally have a checkpoint between Principal Contractor and Principal Designer to agree the method and management arrangements.

The HSE guidance HSG33 notes that the minimum requirements for short-duration work on a roof are:

- a safe means of access to the roof level;
- safe means of working on the roof, eg:
    - on a sloping roof, a properly constructed and supported roof ladder;
    - on a flat roof without edge protection, a harness with a sufficiently short lanyard, attached to a secured anchorage, that it prevents the wearer from reaching a position from which they could fall.

These are minimum standards and where reasonably practicable a full independent scaffold / edge protection will be provided.

Mobile access equipment or proprietary access systems can provide a suitable working platform in some situations and can be particularly appropriate for short-duration minor work.

4.20 Confined Spaces

Confined space working on the Defra Estate is not common. However, it is a recognised high risk task that demands a high standard of planning of the safe systems of work, competence of those involved and communication and monitoring arrangements.

This activity is therefore placed in the schedule to this document to register the fact that it is considered to be high risk by Defra and that there exists an Approved Code of Practice that brings a legal requirement. Following the guidance is not compulsory unless specifically stated, and Duty holders are free to take other action.

But if Duty holders follow the guidance then they will normally be doing enough to comply with the law.

Furthermore, the planning and conduct of the work is to include agreed "checkpoints" between the Duty Holder, Principal Designer and the Principal Contractor, involving the Defra Client and PM as required. These checkpoints are to be formally recorded as project planning milestones.

A confined space is a place which is substantially enclosed (though not always entirely) and where serious injury can occur from hazardous substances or conditions within the space or nearby (e.g. oxygen deficient, toxic or explosive atmospheres, high temperatures, drowning or entrapment). Whenever possible entry into a confined space should be avoided and only considered when all other options have been eliminated. Consideration must be given as to whether the work location and/or work environment constitutes a 'statutory' confined space. If it does, then the confined space activities must be carried out in accordance with the Confined Space Regulations and the relevant HSE guidance which includes and approved code of practice.

There must also be evidence available that persons undertaking work in a confined space have the adequate training, equipment, supervision and authorization to enter.

4.21 Temporary Works

This activity is considered to potentially be high risk by Defra. This view is endorsed by HSE which notes that :

> *A temporary works failure on a project is almost always a high consequence event" (HSE 2016).*

For this reason the activity is to be subject to a checkpoint process with the Principal Designer and Principal Contractor that will utilise a schedule of planned reviews based on the project temporary works planning. These will involve a combination of off and on site reviews in proportion to the complexity.

These arrangements will be in proportion to the risks involved, but in all cases a temporary works written procedure must exist.

This activity is therefore placed in the schedule to this document to register the fact that it is considered to be high risk by Defra and that there are industry recognised standards that must be applied. Furthermore, the application of those standards is to include agreed “checkpoints” between the Defra Principal Designer and the Principal Contractor, involving the Defra Client and PM as required. These checkpoints are to be formally recorded as project planning milestones.

4.22 Site Plant and Equipment

All plant and equipment on site must comply with the Provision and Use of Work Equipment Regulations and be:

- Sourced from a reputable supplier
- Operated only by someone with adequate, appropriate training
- Operated and maintained in accordance with manufacturer’s instructions.
- Designed to use either a manual (traditional fixed) or fully automatic quick hitch where relevant.

Plant must be inspected after delivery for any obvious defects. Particular attention should be made to the condition of hydraulic systems including hoses and the presence and condition of safety critical devices such as interlocks and ROPS and aids such as mirrors and proximity sensors. All plant inspections must be recorded. All work equipment must be inspected by the competent user prior to use for any damage or wear and tear that may result in not being fit for purpose. A more formal inspection must be carried out at least weekly and must be recorded. A machine with defects must be taken out of service with physical key control until the defect is remedied.

Planned inspection and maintenance needs to follow manufacturer’s instructions and include, where appropriate:

- braking systems
- seat belts
- tyres, including condition and pressures
- steering
- convex mirrors, CCTV and other visibility aids – these are safety critical
- lights and indicators
- safety devices such as interlocks and warning signals
- windscreen washers and wipers
- firefighting equipment

- condition of cab and operator protection devices, e.g. ROPS and FOPS and telehandler side glasses
- functional checks on the vehicle, including controls and starting systems
- correct location of guards and panels on the vehicle; and other accessories, such as quick couplers and (if applicable) their locating pins are correctly fitted and in place. (Ref HSG 144)

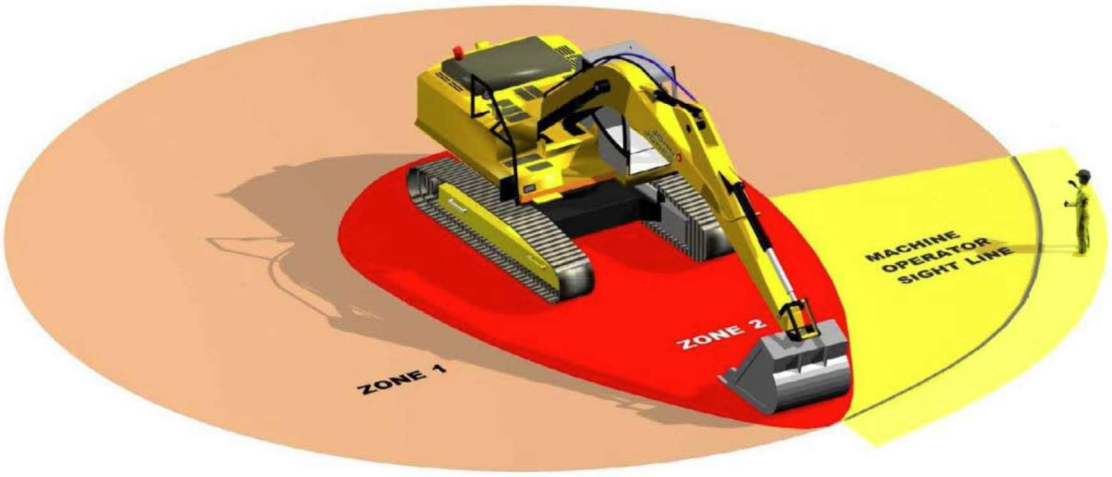
People and plant interface is of prime concern and construction teams must ensure adequate segregation between plant/vehicles and pedestrians. Appropriate arrangements must be in place to prevent persons being put at risk from operated plant. All task specific risk assessments must detail the safety control measures for keeping people safe when there is a legitimate need to work near plant. Whenever practicable pedestrian access to site must be separate from that used by plant or vehicles. Pedestrian walkways, with appropriate barrier protection, should be established wherever reasonably practicable, (especially in the site office, welfare and compound areas)

In terms of plant and machinery movement, a hierarchy of control measures should be implemented, as follows:

- Total segregation of plant and people
- Eliminate the need for reversing
- Providing segregated reversing/turning areas
- Providing trained Vehicle Marshal

If drivers/operators lose sight of the Vehicle Marshal they must stop all movements immediately. Suitable communication arrangements must be implemented to ensure operators of plant are aware of any persons wishing to be in close proximity to the machine, (e.g. ‘thumbs-up’, ‘say hello and wave goodbye’).

All operatives, supervisors and other persons on site (including archaeological teams) must stay outside of the danger zone of excavators when they are operating.



Arrangements should be that a person is not allowed to encroach inside the RED zone area until the machine has been hydraulically isolated. Everyone is expected to follow these arrangements, or alternatives with similar controls. The Construction Plant Association (www.cpa.uk.net) has published a guidance document entitled 'Reducing Unintended Movement of Plant - and managing exposure to consequential risks'

Dumpers of 4T or above used on the highway as part of our projects will have proximity sensors or an alternative means of eliminating blind spots fitted as standard. A Vehicle Collision Avoidance System (VCAS) should be fitted unless there is a risk assessment which identifies that these controls are not necessary.

By the end of 2018, 360 excavators over 6T must be fitted with seat-belt interlock devices to isolate hydraulics when not engaged (this is to allow for a phased upgrade).

Recognising that a range of technology is now available for all construction plant, driver aids should be fitted to eliminate the potential for blind spots during operation, to ensure 360 visibility. Assessment and installation of upgrades must be completed by the end of 2019. In the interim period, alternative site risk management arrangements must be in place.

Seat belts, where fitted on plant/vehicles, must be worn all the times the vehicle is occupied, - without exception.

4.23 Traffic Management Plans (TMP)

Principal Contractors or Contractor for single-contractor projects should ensure a Traffic Management Plan (TMP) is created for the project. It must take into account the existing traffic risk assessment for the occupied Defra site.

The TMP should identify the specific controls related to highway activities and people/plant interface at the point of work. Consideration must also be given to the precautions required to protect pedestrians, including designated walkways on site and in the compound area.

The TMP should be referenced in the Construction Phase Plan prior to commencement of work on site, be displayed on site during construction and referenced in the site induction. It should be regularly reviewed and updated whenever vehicle routes or movement conditions change. All associated operatives must be briefed on the content of the updated TMP and records maintained of the briefing.

4.24 Emergency Arrangements

When work is in progress, framework partners and CDM duty holders will ensure there are effective arrangements for managing safety, health or environmental emergency incidents. Emergency practice drills for fire and evacuation will be planned and undertaken regularly. Where the site is occupied by the Client the plans and practices will be in consultation with the site client.

Other drills where demanded by the type of project, such as water rescue, confined space rescue, harness recovery, etc. will be required within two weeks from commencement of work on site or other period as agreed in the Construction Phase Plan.

4.25 Accidents and Incidents

All accidents and incidents resulting in or having the potential for significant harm must be investigated to identify the root cause and actions to prevent a recurrence. Contractors are required to investigate their own accidents and incidents; the depth and detail of the investigation must be proportionate to the severity or potential severity of the event. The accident investigation should consider the guidance contained in the HSE publication HSG 245, 'Investigating Accidents and Incidents'.

All incidents including near misses must be reported to the Defra Client without delay and in any event within 24 hours. That initial communication must include a statement of the immediate corrective actions taken. Specifically, the initial communication must state any revised monitoring and supervision arrangements that are to be applied to the site whilst the incident is more fully investigated.

A process to follow for this reporting is provided at Appendix 1.

Environment Specific

4.26 Environmental Compliance

Whilst undertaking their work activities contractors must:

a) Avoid adverse impact to the environment by planning and managing their activities appropriately and by maximising environmental opportunities.
b) Ensure inductions contain relevant site specific environmental information and rules.
c) Where relevant, contribute to the Environmental Impact Assessment (EIA) process as agreed with the Client to minimise environmental damage through careful design and construction methodology, including protective or remedial actions where damage is unavoidable.
d) Deliver the actions assigned to them in the Environmental Action Plan, (Environmental risk assessment) and work with the Environmental Clerk of Works, or others to ensure this is done effectively and that actions are completed and signed off.
e) Locate sensitive areas and segregate or protect them from harm. These areas must be clearly marked on drawings, site rules and included in the induction.
f) Not store materials under the canopy or within the sensitive root zone of trees and will erect tree protection fencing in areas of high risk, such as traffic routes.

4.27 Pollution Prevention

Before starting works, contractors must ensure site drainage, pathways, watercourses and groundwater source protection zones have been identified. This information, together with site specific measures to prevent spread of pollution, must be included in the site environmental emergency plan or site pack. This will include actions to be taken in the event of silt, concrete and other chemical incidents where these risks exist.

Particular attention should be given where risks such as grout/concrete and silt exist on the site formal site specific arrangements including mitigation checks, communications lines and emergency actions must be developed and operatives must be trained in these. This should include a suitable arrangement for wash out of equipment, taking best practice into account to avoid pollution. Actions to take in the event of changes that could occur on site should also be identified.

Suitable pollution prevention measures, (e.g. ‘nappies’) should be put in place under attachments, parked plant or static equipment, (e.g. generator, pump) whenever there is a risk of fluid leaks or spillages, especially during refuelling operations or within 10m of a watercourse.

Evidence must be readily available that operatives have received training in the use of spill kits within the previous six-month period. Where works are

anticipated to last more than 30 days or are being carried out in an environmentally sensitive site, where the risk of spills have the potential for significant impact, a mock exercise for each risk will be undertaken. This will be within 2 weeks of starting on site, unless otherwise defined in the CPP.

Spill kits must be appropriate to the risk and amount of fuel and oils on site, and located to be readily available should there be a spillage. Suitable PPE, (such as goggles and impermeable gauntlet gloves) must be included in the spill kits. Suitable provision must be provided on site for storage of hazardous waste, (e.g. following a spill) prior to its removal from site by a licensed carrier.

Contractors must minimise in-channel works as far as practicable and implement suitable mitigation measures where required, considering active spawning seasons and other restrictions on the site.

Maintenance of site plant will be done in a way to minimise the environmental risk, with appropriate control measures in place.

All hydraulic oils supplied in plant under this Code of Practice must be defined as "Readily Biodegradable" and meet OECD 301B. Any exceptions must be agreed by the Principal Designer, Principal Contractor and Client.

4.28 Biosecurity, Invasive and Non-native species

Diseases, parasites and invasive non-native species can cause serious harm to the environment and our economy. Good biosecurity is essential to reduce the risk that we spread these damaging organisms.

Contractors must:

Ensure that all clothing/PPE, plant and equipment will comply with the Check, Clean, Dry approach specifically following the guidance for Biosecurity in the Field website. The non-native species secretariat has a variety of resources including identification sheets that may assist you.

- **Check** - Check your plant, equipment and clothing for living organisms. Pay particular attention to areas that are damp or hard to inspect.
- **Clean** - Clean and wash all plant, equipment, footwear and clothes thoroughly, preferably with hot water. If you do come across any organisms, leave them at the location where you found them.
- **Dry** - Dry all plant, equipment and clothing - some species can live for many days in moist conditions. Make sure you don't transfer them elsewhere.

Any waste or soil containing propagules of invasive non-native species must either be managed appropriately on site, or taken to an appropriate waste

facility. Invasive non-native plant material should be managed in accordance with Treatment and disposal of invasive non-native plants: RPS 178 - GOV.UK

Invasive non-native flora species (e.g. Japanese Knotweed, Himalayan Balsam, Giant Hogweed, etc.) in the work locations will be identified and managed.

The American Signal Crayfish, '*Dikerogammarus villosus'* and '*Dikerogammarus haemobaphes'*, sometimes known as 'killer shrimps' are invasive non-native species. If invasive non-native species are present, they must not be spread. All sites will follow the relevant bio-security advice with site specific arrangements formally documented, briefed to staff and followed.

4.29 Environmental Incidents

All accidents and incidents resulting in or having the potential for significant harm must be investigated to identify the root cause and actions to prevent a recurrence. Contractors are required to investigate their own accidents and incidents; the depth and detail of the investigation must be proportionate to the severity or potential severity of the event. The accident investigation should consider the guidance contained in the HSE publication HSG 245, 'Investigating Accidents and Incidents'.

All incidents including near misses must be reported to the Defra Client without delay and in any event within 24 hours. That initial communication must include a statement of the immediate corrective actions taken. Specifically, the initial communication must state any revised monitoring and supervision arrangements that are to be applied to the site whilst the incident is more fully investigated.

A process for this reporting is provided at Appendix 1.

4.30 Contractor Health, Safety and Environmental Monitoring

For supplier delivered works the following requirements apply:

All projects lasting between 7 and 30 days will be inspected by the Contractor's own competent management staff and the findings recorded.

Projects lasting for 30 days or more must be inspected by the Contractor's own competent HS&E Advisor twice per calendar month, with at least one visit being for the purposes of an inspection which will be recorded.

Following each recorded inspection, and within four working days of the visit, the HS&E Advisor's report will be provided to the following as appropriate:

- Client

- Principal Designer
- Estates Project Manager
- Site Supervisor

Schedule of High Risk tasks

Introduction

The following tasks are considered to be high risk by Defra. They are generally not performed with great frequency on Defra sites.

The tasks are expected to use a checkpoint approach that involves formally confirming the approach to be taken and the checks to be made that the approach is being properly applied.

This checkpoint approach is typically enabled by a proportionate collaboration between the Project Principal Designer and the project Principal Contractor and Contractor on the job, with involvement of the Defra PM and Client.

The checkpoints are to be formally scheduled in the project plan as milestone events and their completion formally recorded.

Each task listed below typically has a design part and a construction part. There is inevitably some repetition, but it is important that the two parts are recognised as being necessary for effective arrangements to result.

These checkpoints do not replace the contractor's management arrangements for these tasks. Their purpose is only to act as a reporting system to provide assurance to Defra as a Client that effective, preventative and protective measures are in place to control the risks and the right plant, equipment and tools have been provided to carry out the work involved. Where an industry developed checklist is suggested then it is purely for this aspect of assurance. The choice of management tools to be used by the contractor for the actual task management as part of the contractor's safety management system are a matter for the contractor as Defra does not as a Client take an active role in managing the work.

If a task is included in the main part of this SHEWCoP then this does not automatically mean it is a low risk activity. An example of this is working at height, which is contained in the core of the SHEWCoP under section 3.9 but happens on a frequent basis at our sites. Similarly there are other frequent activities such as transport, asbestos management which again happens on a frequent basis. Whilst "temporary works" appear in the schedule, it also includes scaffolding for example which is common.

The following activities are very rarely (if at all) undertaken on Defra Estates sites

- Piling and Drilling
- Work over or near water
- Work in and with excavations
- Tower Crane / heavy lift operations on site

And as such are not discussed by this SHEWCoP. Where a Defra Estates project envisages such works then they must be addressed by the project and involve competent advisors.

The CDM2015 regulations identifies the following further high risk tasks.

- Work exposing workers to the risk of drowning.
- Work on wells, underground earthworks and tunnels.
- Work carried out by divers having a system of air supply.
- Work carried out by workers in caissons with a compressed air atmosphere.
- Work involving the use of explosives.
- Work involving the assembly or dismantling of heavy prefabricated components

These works are typically not present on Defra estates projects and are not discussed by this SHEWCoP. Should a project call for such work then they must be addressed by the project and involve competent advisors.

Ground Penetration (3.7)

Introduction

This activity is considered to potentially be high risk by Defra. This view is supported by the industry statistics maintained by Zurich Insurance that finds for the electricity network that:

"on (long term) average there are twelve deaths and approximately six hundred serious injuries attributed to contact with the electricity network every year" (Ref Zurich Technical Library)

This activity is therefore placed here in this schedule to the SHEWCoP to register the fact that it is considered to be high risk and that there are industry recognised standards that must be applied. Furthermore, the application of those standards is to include agreed "checkpoints" between the Defra Principal Designer and the Principal Contractor, involving the Defra Client and PM as required. These checkpoints are to be formally recorded as project planning milestones.

Design Aspects

Defra expects design work to reflect recognised good practice in applying the general principles of prevention. In particular the guidance set out by HSE in HSG47 should be applied by a designer competent to do so where ground penetration is planned. The competence required may be demonstrated through training such as that covered by the Training Framework for Designers and Planners as set out by the Utility Strike Avoidance Group (USAG) or other equivalent schemes.

HSG47 notes that service re-siting is often reasonably practicable with alternatives being revised structure position / design changes, isolation of the

supply during the work or if none of these are possible applying construction methods such as ground beams.

Design decisions and reviews of those decisions must show a consideration of these approaches has taken place and the reason why an approach has not been adopted recorded. This requirement is set out by USAG as BPAUS 03, The Responsibilities Process Map. The use of a checklist is recommended by USAG and provided as the BPAUS Client, Designer and Contractor Opportunities, Responsibilities and Checklists. This or an equivalent technique should be used.

Information provision must include as a minimum that obtained through application of PAS 128:2014, The Specification for underground utility detection, verification and location. A desktop search of statutory utility supplier services information, (Survey Category Type D) must be available at project business case initiation to inform early decision making, by indicating the relative risk of options and, where practicable, elimination of those risks.

Projects will be subject to an on-site services survey compliant to PAS 128 stages A-D carried out by a competent supplier. The requirement for Survey type B using GPR can be risk assessed out where this is deemed not reasonably practicable. This decision must be recorded and approved by the Client and Lead Designer. Surveys can be commissioned by framework suppliers. Service searches and on-site surveys must be included in the project programme for completion in sufficient time for review prior to any intrusive works on site.

Defra expects the designer(s) and principal designer in a particular project to set checkpoints for the confirmation of the suitability of the planned work arrangements. Hold points are provided by the BPAUS 03 Responsibilities Process Map and the inclusion of similar in the monitoring arrangements during the project is required.

The Principal designer will assist the Defra Client to complete the Client component of the BPAUS Client, Designer and Contractor Opportunities, Responsibilities and Checklist (or an equivalent).

The construction phase should include checkpoints as part of the systematic management and monitoring arrangements. The forward planning for these should arise from the liaison activities of the principal designer with the principal contractor.

The purpose of such checkpoints includes providing a means for the Principal Contractor to confirm that:

- Effective, preventative and protective measures have been put in place on the site to control risks
- The right plant and equipment and tools are provided.

These arrangements could be described in the project Construction Phase Plan (CPP) or via a linked document if that is preferred. The CPP should include a schedule of the proposed work involving underground utility risks.

Principal Contractor and Contractors

This activity is high risk. There must be strong arrangements between all parties (Client, Principal Designer and contractors for the effective communication around the work. These arrangements will involve checkpoint reviews and the use of suitable checklists. Change management formalities must be strictly observed with regards this work activity. These arrangements are outlined in the Design section of this document.

Ground penetration activities must be carried out in accordance with HSE guidance document HSG47 - 'Avoiding danger from underground services'. Before breaking ground, checks must be carried out that there are no underground services, (electricity, gas, water, telecommunication, etc.) that will be damaged during the work activity. Service plans/drawings should be viewed beforehand, but these should not be considered as conclusive evidence that no services are in the excavation location.

PAS 128:2014 Specification for underground utility detection, verification and location must be applied to projects that foreseeably involve ground penetration. This is to provide a high degree of confidence of presence and position of underground services to inform the application of the risk management hierarchy to avoid service strikes. Service searches and on-site surveys must be included in the project programme for completion in sufficient time for review prior to any intrusive works on site.

PAS 128 Survey Category Type B requires geophysical detection, by electromagnetic and Ground Penetrating Radar surveys, to obtain greater positional accuracy for the services present. The requirement for GPR can be risk assessed out where this is deemed not reasonably practicable. This decision must be recorded and approved by the Client and lead Designer.

Electromagnetic service detection equipment, such as Cable Avoidance Tools (CAT), can only be used by competent people. Competence can be demonstrated through completion of Energy & Utility Skills Register (EUSR) or equivalent approved training on utility avoidance (use of locating equipment and techniques). The effectiveness of the CAT should first be confirmed by use on known live services. CAT's must have a current calibration certificate and a data logging facility which records how the detection equipment was used. Monitoring of usage data must be done to confirm these important detection tools are being used appropriately and to provide an opportunity for management intervention where equipment is not utilised properly. A signal generator must always be used in conjunction with the CAT to allow detection of pot ended electricity cables and telemetry.

As specified in PAS 128 Survey Type A, on-site verification through intrusive inspection must be undertaken to confirm the position of known services. This

may be achieved through strategically positioned vacuum excavation, hand dug trial pitting or visual inspection within a utility chamber. When reasonably practicable construction teams should use soil picks and vacuum excavation, or other minimal risk techniques. Where this is not practicable hand-digging techniques should be applied using non-conductive or insulated tools.

Site managers and construction teams must be able to recognise and manage the risk to safely detect and avoid services. This includes capability to interpret utility drawings, use locating equipment and safe digging techniques. Competence can be demonstrated through completion of EUSR or equivalent approved training on safe digging techniques. The general management arrangements should involve a suitable check of the work and should be capable of being shown to be equivalent to that of the USAG document BPAUS 04 Client, Designer and Contractor Opportunities, Responsibilities and Checklists.

If ground investigation works involve drilling, then the competency requirements of BS EN 22475: Part 2 recommendations should be followed. The British Drilling Association (BDA) provides information and clarification on the competency requirements of drilling operatives. For more information visit: www.britishdrillingassociation.co.uk

In particular Lead Drillers should be competent to the 'National Vocational Qualification', (NVQ) level 2 – 'Land Drilling', or equivalent, (RCF, QCF, etc.).

Support Operatives should be competent to the NVQ level 2 – 'Drilling Support Operative', or equivalent, (Vocational qualification). *Note: All Support Operatives should be registered onto a scheme and then be fully compliant within two years.*

Flame retardant PPE, (in particular jacket and trousers) must be worn when excavating within 500mm of a known live electric or gas main unless risk assessed out. If the wearing of flame retardant PPE is not deemed necessary, it should still be kept readily available in case the risk changes.

Whilst the penetration work is in progress there should be an on-site supervisory capability and a properly trained operative in the use of detection equipment which must also be on site for the duration of the work activity. It must not be shared across multiple penetration activities. The frequent and repeated use of locators during the course of the work is a feature of the guidance. Service location is likely to become more accurate as cover is removed. The people and equipment to do it must be readily available to the work activity.

No cable should be assumed to be dead even if terminated e.g. in a pot seal. Assume it is live.

Overhead services (3.8)

Introduction

This activity is considered to potentially be high risk by Defra. This view is supported by the industry statistics maintained by Zurich Insurance that finds for the electricity network that:

> *"on (long term) average there are twelve deaths and approximately six hundred serious injuries attributed to contact with the electricity network every year" (Ref Zurich Technical Library*)

This activity is therefore placed here in this schedule to this document to register the fact that it is considered to be high risk by Defra and that there are industry recognised standards that must be applied. Furthermore, the application of those standards is to include agreed "checkpoints" between the Defra Principal Designer and the Principal Contractor, involving the Defra Client and PM as required. These checkpoints are to be formally recorded as project planning milestones.

Design Aspects

Consideration must be given at the design phase to eliminate the potential to come into contact with overhead cables, in particular power lines, (e.g. consider diversion, isolation and/or the use of physical controls such as 'goal posts', zones and physical restraints on machines with a reach capability etc.).

These design discussions, including the contact made with the network operator to discuss options of diversion and isolation should be recorded to demonstrate the general principles of prevention has been systematically applied.

All overhead services crossing or adjacent to the works area and access routes should be clearly highlighted on suitable documents so that the Principal Contractor or Contractor for single-contractor projects is made aware the potential for contact exists.

Where applicable all designs must be prepared in accordance with the HSE Guidance Note GS6 – 'Avoiding danger from overhead power lines'.

The designs, including the location of and the approach to the establishment of the safe zones and passage ways, must be subject to a design review. A checkpoint for the confirmation of the suitability of the planned work arrangements, as for underground services, is required. No materials are to be stored in the area between the overhead lines and the ground-level barriers. The site plan should show this prohibition rule.

The construction phase should include checkpoints as part of the systematic management and monitoring arrangements. The forward planning for these should arise from the liaison activities of the principal designer with the principal contractor.

The purpose of such checkpoints includes providing a means for the Principal Contractor to confirm that:

- Effective, preventative and protective measures have been put in place on the site to control risks
- The right plant and equipment and tools are provided.

These arrangements could be described in the project Construction Phase Plan (CPP) or via a linked document if that is preferred.

Principal Contractor and Contractors

All construction related activities near an overhead cable, in particular power lines, should be carried out in accordance with the HSE Guidance Note GS6 – 'Avoiding danger from overhead power lines'.

Consideration must be given at the design and construction phases to eliminate the potential to come into contact with overhead power lines, (e.g. diversion, isolation and/or the use of 'goal posts', etc.).

When 'goal posts' are implemented, they must have adequate clearance from the overhead services, and warning signs should be in place where vehicles and plant pass under or parallel to the services. No materials are to be stored in the area between the overhead lines and the ground-level barriers. The site plan should show this prohibition.

The application of the standards is to include agreed "checkpoints" between the Defra Principal Designer and the Principal Contractor, involving the Defra Client and PM as required. These checkpoints are to be formally recorded as project planning milestones.

Work at Height (3.9)

This task is high risk. The statistics speak for themselves. Falls from work at height remain the single greatest cause of death in industry. Half of all fall from height deaths over the last five years were in the construction sector.

Unlike, for example, work near utilities which Defra typically undertakes relatively infrequently, work at height is common and frequent. Consequently this activity is of high concern to Defra due to its typical prominence in facilities management works.

Therefore, this task has not been extracted to this schedule of high risk tasks. It remains in the core part of this document to ensure all Defra contractors are clear on the standards required.

These include the use of checkpoints as part of the systematic management and monitoring arrangements. The forward planning for these should arise from

the liaison activities of the principal designer with the principal contractor and should be in proportion to the risk. They should be captured as milestones in the project plans

Temp works (3.10)

Introduction

This activity is considered to potentially be high risk by Defra. This view is endorsed by HSE which notes that

> A temporary works failure on a project is almost always a high consequence event" (HSE 2016).

For this reason the activity is to be subject to a checkpoint process with the Principal Designer and Principal Contractor that will utilise a schedule of planned reviews based on the project temporary works planning. These will involve a combination of off and on site reviews in proportion to the complexity.

These arrangements will be in proportion to the risks involved, but in all cases a temporary works written procedure must exist.

This activity is therefore placed in the schedule to this document to register the fact that it is considered to be high risk by Defra and that there are industry recognised standards that must be applied. Furthermore, the application of those standards is to include agreed "checkpoints" between the Defra Principal Designer and the Principal Contractor, involving the Defra Client and PM as required. These checkpoints are to be formally recorded as project planning milestones.

Design Aspects

Temporary works (TW) are the parts of a construction project needed to enable the permanent works to be built. Usually the TW are removed after use (e.g. access scaffolds, props, shoring, excavation support, falsework and formwork, etc.). It is important that the same degree of care and attention is given to the design of the TW as to the design of the permanent works. The principles of BS5975 Code of Practice for temporary works procedures and the permissible stress design of falsework, must be applied to the design, installation, alteration and removal.

HSE provides information in sector minutes (SIM 02/2010/04 "The management of temporary works in the construction industry") and provides guidance for different risk profiles of temporary works and examples of works that fit the different risk categories. It discusses proportionate arrangements for low risk situations.

The TW Designer (TWD) should have undertaken TW training and have experience appropriate to the associated hazards and risks. TW designs shall comply with requirements for design risk assessments, buildability statements and RAG List in the same manner as for permanent works. A temporary works

schedule should be produced early in the project to identify information and surveys required and included in the CPP.

The TWD must liaise on a regular basis with the Principal Designer to discuss the design risk assessments, buildability statements and RAG List.

The temporary works schedule in the CPP should be used to drive reviews with the Principal Contractor as part of a series of checkpoints to ensure the arrangements are adequate and being appropriately applied

For temporary works management arrangements involving small contractors the principles of BS5975 should be in place if not the formal and specific procedures, in particular:

- ensuring a suitably competent temporary works designer/adviser is in place to supply an engineered solution,
- adequate information flow,
- design checking to an appropriate level,
- suitable verification of correct erection of the temporary works and someone overseeing and co-ordinating the whole process.

Smaller contractors may not have anyone sufficiently experienced to plan effectively all but the simplest temporary works. There should be clear evidence that appropriate external expertise has been engaged. This includes obtaining the services of a suitably competent TWC and temporary works designer to ensure temporary works are effectively designed, constructed, inspected, loaded and managed. On some projects, particularly smaller jobs involving low risk temporary works, it may be appropriate for the TWC and designer roles to be carried out by the same person.

Principal Contractor and Contractors

Temporary works (TW) are the parts of a construction related project that are needed to enable the permanent works to be built. Usually the TW are removed after use, (e.g. access scaffolds, props, shoring, excavation support, falsework, formwork, etc.). The principles of BS5975 Code of practice for temporary works procedures and the permissible stress design of falsework, must be applied to the design, installation, alteration and removal.

It is very important that the same degree of care and attention is given to the construction of the TW as to the construction of the permanent works. Any plant, materials or equipment used in the construction of TW must be installed in accordance with the manufacturer's instructions.

The management of TW requires the involvement of individuals with specific responsibilities. They include the Temporary Works Designer (TWD), Temporary Works Co-ordinator (TWC) and the Temporary Works Supervisor (TWS). The appointments must be made in writing.

This activity is to be subject to a checkpoint process with the Principal Designer and Principal Contractor that will utilise a schedule of planned reviews based on the project temporary works planning. These will involve a combination of off and/or on site reviews in proportion to the complexity.

These arrangements will be in proportion to the risks involved, but in all cases a temporary works written procedure must exist.

The detail of the role holder responsibilities is provided by BS 5975:2008+A1:2011. This standard discusses CDM 2007 roles and the HSE guidance "The management of temporary works in the construction industry - SIM 02/2010/04" clarifies the role aspects for CDM 2015. Falsework is discussed by BS EN 12812.

A forum for temporary works exists and it is a recognised source of guidance. The HSE SIM above is also a source of guidance and makes points relevant to lower risk / smaller contractor situations and what proportionate arrangements might look like to ensure proportionality for Defra temporary works.

Confined Spaces (4.20)

Confined space working on the Defra Estate is not common. However, it is a recognised high risk task that demands a high standard of planning of the safe systems of work, competence of those involved and communication and monitoring arrangements.

A confined space is a place which is substantially enclosed (though not always entirely) and where serious injury can occur from hazardous substances or conditions within the space or nearby (e.g. oxygen deficient, toxic or explosive atmospheres, high temperatures, drowning or entrapment).

Whenever possible entry into a confined space should be avoided and only considered when all other options have been eliminated. Consideration must be given as to whether the work location and/or work environment constitutes a 'statutory' confined space. If it does, then the confined space activities must be carried out in accordance with the Confined Space Regulations and the relevant HSE guidance which includes and approved code of practice.

There must also be evidence available that persons undertaking work in a confined space have the adequate training, equipment, supervision and authorization to enter.

This activity is therefore placed in the schedule to this document to register the fact that it is considered to be high risk by Defra and that there exists an Approved Code of Practice that brings a legal requirement. Following the guidance is not compulsory unless specifically stated, and duty holders are free to take other action.

But if duty holders follow the guidance then they will normally be doing enough to comply with the law.

Furthermore, the planning and conduct of the work is to include agreed “checkpoints” between the Defra Principal Designer and the Principal Contractor, involving the Defra Client and PM as required. These checkpoints are to be formally recorded as project planning milestones.

Further High risk tasks

The CDM2015 regulations identifies the following further high risk tasks.

- Work exposing workers to the risk of drowning.
- Work on wells, underground earthworks and tunnels.
- Work carried out by divers having a system of air supply.
- Work carried out by workers in caissons with a compressed air atmosphere.
- Work involving the use of explosives.
- Work involving the assembly or dismantling of heavy prefabricated components

These works are typically not present on Defra estates projects and are not discussed by this SHEWCoP. Should a project call for such work then they must be addressed by the project and involve competent advisors.

SHEWCoP Sources

Note - *The following sources are not said to be comprehensive and are not provided in place of the contractor's management system. They are however drawn from recognised industry sources and may be helpful to contractors as a result.*

Ref	Title	author	Date or version	location
Services / utilities				
HSG47	Avoiding danger from underground services	HSE	HSG47 (Third edition), Published 2014	http://www.hse.gov.uk/pubns/priced/hsg47.pdf
BPAUS 05	Training Framework for Designers and Planners "Avoiding Services and Utility Plant"	USAG	BPAUS 05 Version 01 November 2013	https://www.utilitystrikeavoidancegroup.org/uploads/1/3/6/6/13667105/05_bpaus_avoiding_services_training_12nov_rev_01.pdf
BPAUS 03	BPAUS 03 Responsibilities Process Map	USAG	BPAUS 03 Version 02 July 2018	https://www.utilitystrikeavoidancegroup.org/uploads/1/3/6/6/13667105/bpaus_03_-_jan19.pdf
BPAUS 04	Client, Designer and Contractor Opportunities, Responsibilities and Checklists	USAG	BPAUS 04 Version 01 November 2013	https://www.utilitystrikeavoidancegroup.org/uploads/1/3/6/6/13667105/04_bpaus_client_designer_contrractor_opportunities_responsibilities__checklists_12november_rev01.pdf
USAG Training Spec	minimum training and assessment specification for Utility Excavations (Category 1) - Locate Utility Services	USAG	Version 2.2 14th March 2013	https://www.utilitystrikeavoidancegroup.org/uploads/1/3/6/6/13667105/1._locate_utility_services_specification.pdf
USAG Training Spec	minimum training and assessment specification Utility Excavations (Category 2) Implement Safe (Digging) Excavating Practices	USAG	Version 2.2 14th March 2012	https://www.utilitystrikeavoidancegroup.org/uploads/1/3/6/6/13667105/2._utility_excavation_specification.pdf
PAS128:2014	PAS 128:2014 Specification for underground utility detection, verification and location	BSOL	2014	BSOL

Ref	Title	author	Date or version	location
HSE Note GS6 4th edition	Note GS6 – 'Avoiding danger from overhead power lines	HSE	2013	HSE
Temporary works				
BS 5975:2008+A1:2011	BS 5975:2008+A1:2011 Code of practice for temporary works procedures and the permissible stress design of falsework	BSOL	2008 plus 2011 revision	BSOL
TW16.005	TWf Information Sheet No. 2 Temporary Works Training	TWF	2016	https://www.twforum.org.uk/media/77890/tw16_005_twf_temporary_works_training.pdf
TW16.106	TWf INFORMATION SHEET No. 3 The Construction (Design & Management) Regulations 2015 Principal Designer: Guidance on Temporary Works	TWF	2017	https://www.twforum.org.uk Resources page
TW17.037	Principles for the management of temporary loads, temporary conditions and temporary works during the construction process	TWF	2017	https://www.twforum.org.uk resources page
HSE SIM 02/2010/04	The management of temporary works in the construction industry	HSE	2004 – under review but on hold pending next version of BS5975.	http://www.hse.gov.uk/foi/internalops/sims/constrct/2_10_04.htm#summary
Work at height				
HSE HSG33	Health and safety in roof work	HSE	Fourth edition, 2012	HSE
NASC SG25:14	SG25:14 Access and Egress from Scaffolds, via Ladders and Stair Towers etc	NASC	2014	https://www.nasc.org.uk/shop/health-and-safety-guidance/sg25-access-and-egress-from-scaffolds-via-ladders-stair-towers-etc/

Ref	Title	author	Date or version	location
CITB GE700 Companion	GD02 Scaffold planning and work at height activities checklist	CITB with NASC	2019	https://www.citb.co.uk/documents/publications/companion-pages/checklists-forms/2019/gd/csk-ge700-2019-gd02.pdf
Policy				
	Defra H+S Policy			https://intranet.defra.gov.uk/documents/2014/09/health-safety-policy-hs.pdf
Vehicles and other topics				
HSG 144	The safe use of vehicles on construction sites: A guide for clients, designers, contractors, managers and workers involved with construction transport	HSE	2009	HSE Website
CPA 1101	Safe Use of Telehandlers in Construction Second Revision	CPA	2015	https://www.cpa.uk.net/sfpsgpublications/#Telehandlers
CIG 0801	Lifting Operations with 180° and 360° Excavators – 4th revision	CPA	2018	https://www.cpa.uk.net/sfpsgpublications/#Telehandlers
HSG 107	Maintaining Portable Electrical Equipment	HSE	2013	HSE Website
HSG 245	Investigating accidents and incidents: A workbook for employers, unions, safety representatives and safety professionals	HSE	2004	HSE Website

Appendix 1

Accident/Incident and Near Miss Notification Form

- Defra health and safety accident and incident site reporting

Near misses are a type of 'incident'. They are important indicators that 'all is not right' on the site. They must be reported so we can jointly 'get it right' before a near miss becomes an accident and someone is harmed

Report accidents and near misses

Tell the Defra Client and Defra PM on the project

Defra Client

Defra PM:

Names and phone numbers to be added and this form posted on the site cabin board and the Defra office boards

Defra report form: https://intranet.defra.gov.uk/forms/health-safety-accident-report-hs/

Defra Client or PM to complete and email form to

shaw@defra.gov.uk

Defra Client to confirm the Principal Contractor has started to investigate

Defra Client to receive the Contractor report and review with the allocated Defra staff

Within 14 days

If you are a contractor follow your internal procedures and legal duties for reporting under RIDDOR

The Principal Contractor to arrange their investigation

The contractor(s) involved in the incident should separately commence their own investigation. Defra requires the PC to provide a report to Defra of the incident within 14 days.

Identify the immediate, underlying and root causes along with the actions to be taken to prevent recurrence.

The potential consequences and the likelihood of the event recurring that should **determine the level of investigation**, not simply the injury or ill health suffered on this occasion.

The Principal Contractor to supply the investigation report to the Defra Client

Code of practice for electrical safety (CoPES): Part 2

Instruction LIT 13133 **Issued 22/7/2020**

What's this document about?

This document is part 2 of the Environment Agency's code of practice for electrical safety. It outlines:

- responsibilities of the Environment Agency's Supra-Area Mechanical, Electrical, Instrumentation, Control and Automation (MEICA) team leaders;

responsibilities of those who work on or near Environment Agency electrical systems or equipment be they employees or contractors.

Who does this apply to?

Anyone required to work on or near Environment Agency electrical systems or equipment must read and understand this part of the code of practice.

Anyone called on to procure, manage or accept any work on or near Environment Agency electrical systems or equipment must read and understand the code of practice.

Contact for queries and feedback

- Neil Terry Head Office Senior FCRM Adviser
- Please give anonymous feedback for this document.

Contents

Introduction

Employer duties

As an employer, the Environment Agency has a duty to comply with The Electricity at Work Regulations 1989 and other related legislation regarding the safety of its employees.

The Environment Agency has produced this code of practice for electrical safety with the aim of further minimising the risk to its employees and business from electrical systems and equipment.

Special circumstances

As with all codes of practice, special circumstances can occur that fall outside the scope of the main document. This could include:

- working in hazardous environments;
- working with specialist equipment;
- working with third party electrical equipment.

If you are in any doubt or wish to seek further guidance, you must refer to your Supra-Area MEICA Team Leader before proceeding.

Legislation

This document embodies the following legislation:

- Health and Safety at Work etc. Act 1974
- The Workplace (Health, Safety and Welfare) Regulations 1992
- The Provision and Use of Work Equipment Regulations (PUWER) 1998
- The Electricity at Work Regulations 1989
- The Management of Health and Safety at Work Regulations 1999
- The Regulatory Reform (Fire Safety) Order 2005
- The Construction (Design and Management) Regulations 2015

MEICA responsibilities

Supra-Area MEICA team leaders responsibilities and duties

Each area of the Environment Agency has a Supra-Area MEICA team leader, appointed by the Area Manager, who is responsible for:

- ensuring compliance with this code of practice for of all electrical work undertaken by, or on behalf of, the Environment Agency within the area;
- ensuring legal compliance with all legislation that applies to the asset management of all national and area MEICA systems and equipment;
- assisting employees in ensuring compliance with this document.

It is the duty of the Supra-Area MEICA Team Leader to:

- assess the competence and authorise in writing all those who are to carry out work on Environment Agency electrical systems and equipment;
- give guidance on the competency levels required to become authorised to carry out electrical work.

Note: The Thames Tidal Defences Engineering Manager holds these responsibilities for the Thames barrier and associated gates.

Electrical Authorisation

Certification and training to undertake electrical work

Before an Environment Agency employee carries out any work on electrical systems or equipment (or manages work being carried out by others), they must be authorised in writing by the Supra-Area MEICA Team Leader for any type of work they will be undertaking on Environment Agency sites.

It is the responsibility of line managers and team leaders to notify the Supra-Area MEICA Team Leader of:

- any member of their team who requires authorisation;
- the specific task for which they require authorisation.

Specific training is available to the holders of certain posts within the Environment Agency to allow them to undertake limited electrical work.

Employees with relevant electrical qualifications and/or experience may also be permitted to undertake electrical work, but this must be assessed by the Supra-Area MEICA team leader and if appropriate they can be authorised.

Further details including guidance for staff and the Supra-Area MEICA Team Leader can be found in SD12 – Electrical authorisation.

Outside the scope of this document

The following are not covered within the scope of this code of practice:

- authorisation for high voltage work;
- voltages exceeding 1,000 volts a.c. or 1,500 volts d.c. between conductors or, 600 volts a.c. or 900 volts d.c. between conductors and earth;
- authorisation for electric fishing.

Please refer to the Supra-Area MEICA Team Leader for advice.

Duty of authorised persons

It is the duty of authorised persons to ensure they only undertake electrical work that falls within the limits set out in their certificate of authorisation. If there is any doubt as to whether work is covered by an electrical authorisation, advice must be sought from the Supra-Area MEICA Team Leader or the FCRM Directorate, FCRM Manager - MEICA before proceeding.

Electrical work must be carried out in such a manner as to avoid danger.

Drawings and documentation

Record drawings

It is essential that the Environment Agency holds and maintains accurate record drawings and documentation for all its systems and equipment.

The Site Responsible Officer (SRO) must ensure that:

- documentation and drawings are available to those working on electrical systems or equipment;
- all documentation and drawings are current.

Incorrect or missing drawings

It is the duty of the SRO to ensure they have a complete and accurate set of record drawings for all systems and equipment under their control.

If any system or equipment is found to have incorrect or missing drawings, they must be updated as soon as possible and before any further work is carried out. The Supra-Area MEICA Team Leader can provide further guidance.

Further detailed guidance for drawing and documentation requirements can be found in SD09 – Drawings and documentation.

Contractors or consultants working on low voltage systems

Appointment

The following operational instruction must be followed when appointing a contractor/consultant to carry out work:

- 44_07 The management of external contractors

Conditions

The following conditions apply in addition to the mandatory operational instructions when contractors are required to carry out electrical work:

- Where contractors have their own electrical safety rules, these may be used where the contractor can demonstrate to the Supra-Area MEICA Team Leader that these rules are to an equal or better standard.
- A copy of this document must be made available to anyone required to undertake work on or near to electrical systems and equipment. This includes, but is not limited to, design, installation, commissioning, maintenance, inspection and testing.
- All electrical works must comply with:
- The Electricity at Work Regulations 1989;
- BS 7671: 2008 (2011) Incorporating latest amendments. Requirements for electrical installations. IET Wiring Regulations.
- the requirements of this document;
- the engineering specification and any standards issued for the work.
- All contractors' staff undertaking electrical works on any Environment Agency site must first be approved to undertake these works by the Supra-Area MEICA Team Leader. To gain approval contractors must demonstrate that they:
- are registered with the Joint Industry Board or equivalent;
- employ staff who possess sufficient experience, training and knowledge to carry out the electrical works in a safe and efficient manner;
- they are members of NICEIC (National Inspection Council for Electrical Installation Contracting), ECA (Electrical Contractors Association) or NAPIT (National Association of Professional Inspectors and Testers
- are registered under the appropriate category by the NICEIC or ECA for the works to be undertaken.
- Note: The Supra-Area MEICA Team Leader may require further information to assess the competence of a contractor before approval is given.
- All contractors' or consultants staff undertaking electrical design work must be members of a relevant professional body or authorised by the Supra-Area MEICA Team Leader.
- The Environment Agency reserves the right to audit (at regular intervals) the training and competency levels of contractor's staff and their sub-contractors working on its systems or equipment.

Electrical safety agreements

Before commencing any electrical works on Environment Agency sites, an electrical safety agreement must be issued by an authorised person and completed by a competent person designated by the contractor. SD02 – Electrical safety agreement contains a form that must be completed when work is required.

Electrical safety agreements will be required in order to carry out any electrical works. These will be issued in operational areas by the supra area MEICA team leader, or in the circumstances of a national MEICA contract that includes electrical works, authorisation may be provided by the FCRM Directorate, FCRM Manager - MEICA

Contractors responsibilities

Contractors working on Environment Agency sites must sign the electrical safety agreement provided in SD02 – Electrical safety agreement.

The contractor is required to ensure that only suitably qualified and experienced personnel carry out work on Environment Agency equipment on the sites listed in the agreement.

Contractors are responsible for training their staff to undertake all necessary works to ensure compliance with this code of practice and all other legal regulations and standards in the execution of their duty.

Procurement

To ensure that we use competent electrical contractors and consultants, you must only engage framework electrical contractors, who will have been assessed and meet the requirements of this Code of Practice for Electrical Safety. For specialist electrical work, where no framework exists, you must procure electrical suppliers in accordance with Environment Agency's procurement requirements for non-framework suppliers and ensure that they meet all the requirements of this code

Conduct

If you have any personal relationship with a contractor/consultant being used to carry out work for the Environment Agency you must declare this in the Declaration of Interests section in SOP. If required, your line manager will agree with you how any potential conflicts of interest will be managed.

As set out in our Code of Conduct, you must apply the "seven principles of public life" when appointing any contractor/consultant.

Supplementary procedures

Where deemed appropriate, the Supra-Area MEICA Team Leader may develop additional procedures to supplement this code of practice.

Working procedure

Safe working procedure for MEICA works

Anyone carrying out MEICA works on any Environment Agency site must produce detailed working procedures, in the form of risk assessments and method statements that will ensure safe working on any system or piece of equipment.

Procedures must follow guidelines as set out in HSG85 Electricity at Work - Safe working practices.

If you are in any doubt with respect to this, you must consult the Supra-Area MEICA Team Leader for advice.

Low voltage permit to work

Introduction

- A permit is required where control of a risk is provided by one party to ensure the safety of another party.
- Responsibility for the control of the risk remains with the person issuing the permit subject to the permit conditions.
- When a low voltage permit to work (PTW) is required, it must be issued by the party that is in control of the risk. If the risk is controlled by the Environment Agency only an Environment Agency authorised person may issue the PTW.

Elements of a low voltage PTW

Permits are required for works:

- on electrical systems that have multiple points of supply or where remote operation can be implemented;
- on low voltage distribution systems, switchboards and busbar systems where the hazards and risks require additional control;
- on low voltage systems that have a point of isolation on a high voltage system for example transformers;
- where isolation for works is being done for a third party to carry out the works;
- where local MEICA procedures dictate.

The person issuing the PTW retains responsibility for the works and is responsible for the storage and retention of the PTW after completion of the works.

An example low voltage PTW work showing the elements it should contain is given in SD03 – Low voltage permit to work.

If you are in any doubt with respect to this, you must consult the Supra-Area MEICA Team Leader advice.

Live working

Introduction

There may be circumstances where it is unreasonable to make equipment dead because of the difficulties it would cause (refer to EAWR – reg 14).

Important!: When a situation is recognised that may require live working the Supra-Area MEICA Team Leader must be consulted immediately and their permission is required BEFORE work commences.

Carrying out live works

Anyone carrying out live works on any Environment Agency systems or equipment must produce detailed working procedures, in the form of risk assessments and method statements that will ensure safe working on any system or piece of equipment.

Procedures for working live must follow guidelines as set out in HSG85, Electricity at Work - Safe working practices and The Electricity at Work Regulations 1989

The person carrying out the risk assessment must have extensive knowledge and experience of the factors to consider and of the competence of the people who will be carrying out the work and their ability to avoid danger whilst working live. On completion of this stage, the Supra-Area MEICA Team Leader must review its contents and decide whether it is reasonable in all circumstances to work live.

Further details can also be found in SD13 – Live working.

The Supra-Area MEICA Team Leader must provide further technical advice if you need to implement any live working.

Functional isolation of machinery and equipment for mechanical maintenance

Definition

Functional isolation is the term used to describe the isolation of equipment such that the equipment is disabled from operation. It allows for work to take place near that equipment. It does not allow for:

- work on that equipment;
- work within the fixed guards of that equipment;
- work with other energy sources such as gravity, hydraulic, and so on
- Typical examples include:
- functional isolation of a pump in order to access the wet well;
- functional isolation of a sluice gate in order to work downstream of the sluice.

Safe system of work

You must follow the detailed guidance and instruction given in 153_10 Functional isolation of machinery and equipment.

If you are carrying out functional isolation you must have first been trained and authorised on the systems you are isolating.

The required detail of the safe system of work is defined by:

- the complexity of the task;
- the number of people involved.

If you are in any doubt with respect to this, you must consult the Supra-Area MEICA Team Leader for advice.

Electrical equipment inspection and testing

Scope

All electrical equipment in an installation whether permanently connected or connected by a plug and socket outlet is covered by this code of practice.

- The Institution of Engineering and Technology, Code of Practice for In-service inspection and testing of electrical equipment (4th Edition) contains detailed advice on in-service inspection and testing to determine whether electrical equipment is fit for continued service or maintenance or replacement is necessary.
- Details of the process requirements can be found in SD11 – Electrical equipment testing. Supra-Area MEICA Team Leader can provide further technical advice if required to support electrical equipment testing.

Fixed electrical installation inspection and testing

Inspection and testing

All fixed electrical installations, for example building wiring, must be inspected and tested in accordance with Part 6 of BS 7671 (IEE Wiring Regulations) and IET Guidance Note 3 Inspection and testing (latest edition).

Details can also be found in SD10 – Fixed electrical installations. The Supra-Area MEICA Team Leader can provide further technical advice if required to support electrical installation testing.

Electrical work in confined spaces and hazardous areas

Confined spaces

The SRO must undertake a hazard identification and confined space assessment at each site. This assessment must be made available in the site health and safety file.

Electrical work undertaken in confined spaces will require a method statement and risk assessment. It must comply with:

- 983 14 Working in Confined Spaces

Explosive atmospheres

Where electrical work is required on a site that has hazardous areas for explosive atmospheres, it is a legal requirement for the SRO to:

- carry out a hazardous area study;
- document the study's conclusions in the form of the zones into which each part of the site falls.

These zones are defined in the Dangerous Substances and Explosive Atmospheres Regulations 2002 (DSEAR) and are referred to as Zones 1, 2 and 3.

This assessment must be undertaken by trained personnel or an external accredited body. The SRO should seek advice from the Supra-Area MEICA Team Leader.

In order to comply with current legislation, all electrical and electronic equipment located within the zone must:

- be suitable for operation within that zone;
- comply with the ATEX Directive (94/9/EC).

Guidance

Safety instrumentation is used within potentially explosive atmospheres to reduce the risk of a hazard causing harm. The risk mitigation is provided by installing safety-related instrumentation that has an appropriate safety integrity level (SIL).

Design, construction, installation, use of apparatus, inspection and testing must comply with BS EN 60079-17: 2007.

Advice on contractor competence and management of electrical risks in Hazardous areas must be sought from the Supra-Area MEICA Team Leader if there are any works required to mechanical or electrical equipment located within or adjacent to a hazardous area.

Computer and communications rooms

Introduction

Computer rooms are controlled areas with a known environment containing corporate computers, servers, communications and other information technology equipment.

These areas are the joint responsibility of Corporate Information Services (CIS) and the SRO.

Entry into a computer room is restricted to specialist staff.

Annual visual inspections must be carried out by the Supra-Area MEICA Team Leader in accordance with SD08 – Computer and communications rooms.

Generators

Introduction

Generators fall into three groups used in a variety of circumstances to provide electrical power supplies, these are:

- portable and transportable;
- mobile;
- fixed.

General guidance

Staff installing and operating generator systems and equipment must be authorised in writing by the Supra-Area MEICA Team Leader.

Chapter 55 (Section 551) of BS 7671 (IET Wiring Regulations) defines requirements specifically related to generating sets.

- **! Important** When connecting and using any type of generator, you must also follow the guidance given in HSE Information Document 482/2 Electrical safety of independent low-voltage AC portable and mobile generators and connected systems.
- Details can also be found in SD04 - Generators. The Supra-Area MEICA Team Leader can provide further technical advice if required to support generator installations.

Temporary electrical supplies

Introduction

A temporary electrical supply is normally associated with the temporary electrical installation of a construction site. They have a specific testing and inspection regime that must be followed.

BS 7671 makes no distinction between temporary or permanent electrical installations in terms of safety. The fact that an electrical installation is of a temporary nature does not permit a lower standard of installation work – If anything, the requirements for temporary electrical installations are more stringent than those for permanent installations as the operating conditions are more onerous.

The definition and scope of temporary supplies can be found in SD07 – Temporary electrical supplies. The Supra-Area MEICA Team Leader can provide further technical advice to support the installation and maintenance of temporary electrical installations.

Testing of fire alarm and emergency lighting systems

Environment Agency responsibility

Under The Regulatory Reform (Fire Safety) Order 2005, the Environment Agency is responsible for ensuring its building and structures are covered by an adequate fire safety procedure whose elements comply with BS 5839 and for testing, inspecting and maintaining emergency lighting systems to ensure the means of escape in the event of a fire is secured. The SRO has the responsibility for ensuring compliance with these statutory requirements.

Responsible person

The site responsible officer must:

- carry out a fire risk assessment;
- keep up all fire precautions and maintenance routines;
- maintain fire alarm and emergency lighting systems in accordance with 282_10 Fire prevention, alert and escape for occupied premises;
- ensure that testing and inspection of the emergency lighting systems are carried out.
- The Supra-Area MEICA Team Leader will provide further technical advice and support if required.

Overhead lines

Requirements

Overhead lines can be supported on a number of differing structures made of various materials such as concrete, timber or steel. The type of supporting structure is no indication of the voltage passing through the supported cables. The cables are often un-insulated and systems operating at high voltage are a particular hazard in that electrocution can occur without direct contact with the cable.

Treat all overhead lines as hazardous. Where work is to take place near overhead lines, follow the requirements set out in 728_06 Travelling under and working near overhead lines and 230_10 Safe working and travelling under or near overhead cables. These documents are based on HSE Guidance Note GS6 Avoidance of danger from overhead electric power lines.

The Supra-Area MEICA Team Leader will provide further technical advice and support if required.

Underground cables

Requirements

Conduct all excavations on new or existing underground cable routes in accordance with 727_06 The dangers of underground services and how to avoid them. This document is based on HSE Guidance Note HSG47 Avoiding danger from underground services.

In all cases, follow the detailed Environment Agency procedures for ground penetration specified in 1137_08 Avoiding underground services.

Guidance

- Take particular care when excavating close to an earthing system. Should the earthing system be exposed, assess the risk to the electrical installation that it protects and, if necessary, put in place mitigating measures. Test the earthing installation when work is complete.
- Repair effectively earthing damaged during the excavation immediately and test the earth installation.
- Position cable markers at sufficiently frequent intervals and at changes of direction to ensure all routes are defined clearly.
- Mark underground cable routes clearly on the 'as built' drawings for submission into the health and safety file.
- The Supra-Area MEICA Team Leader will provide further technical advice and support if required.

Office desk wiring

Background

The use of information technology (IT) equipment can result in relatively high levels of protective conductor currents. A final circuit can accept many items of IT equipment and remain within its rating, but the resulting protective conductor currents can be high causing problems to connected devices.

- SD05 – office desk wiring provides technical details for desk electrical systems. The Supra-Area MEICA Team Leader will provide advice and technical support if any office desk wiring is required.

Lightning protection

What is lightning protection?

Lightning protection is an electrically conductive system attached to the exterior of a building or structure that is bonded to the general mass of earth to allow any lightning strike to dissipate its energy safely.

Assessment of buildings

All buildings and structures owned or leased by the Environment Agency must be assessed against the requirements of BS EN 62305 by the SRO.

Where deemed necessary, a compliant lightning protection system must be designed, installed and tested at regular intervals.

SD06 – lightning protection provides technical details for lightning protection systems. The Supra-Area MEICA Team Leader will provide advice and technical support with respect to lightning protection of any building or structure if required.

Related documents

Legislation

- Health and Safety at Work etc. Act 1974
- The Electricity at Work Regulations 1989
- The Management of Health and Safety at Work Regulations 1999
- Dangerous Substances and Explosive Atmospheres Regulations 2002 (DSEAR)
- The Regulatory Reform (Fire Safety) Order 2005
- The Construction (Design and Management) Regulations 2015
- Directive 94/9/EC (ATEX Directive)
- Directive 93/68/EEC CE Marking Directive

British standards

- BS EN 60079-17: 2007 Explosive atmospheres. Electrical installations inspection and maintenance.
- BS EN 60309 Plugs, socket-outlets and couplers for industrial purposes.
- BS EN 60309-2: 1999 Plugs, socket-outlets and couplers for industrial purposes. Dimensional interchangeability requirements for pin and contact-tube accessories.
- BS EN 60950 Information technology equipment. Safety.
- BS EN 61010 Safety requirements for electrical equipment for measurement, control and laboratory use.
- BS EN 61241-17: 2005 Electrical apparatus for use in the presence of combustible dust. Inspection and maintenance of electrical installations in hazardous areas (other than mines).
- BS EN 61508-2: 2002 Functional safety of electrical/ electronic/ programmable electronic safety-related systems. Requirements for electrical/electronic/programmable electronic safety-related systems.
- BS EN 61557-1: 2007 Electrical safety in low voltage distribution systems up to 1000 V a.c. and 1500 V d.c. Equipment for testing, measuring or monitoring of protective measures. General requirements.
- BS EN 61558 Safety of power transformers, power supply units and similar products.
- BS EN 62305-1: 2006 Protection against lightning. General principles
- BS EN 62305-2: 2006 Protection against lightning. Risk management
- BS EN 62305-3: 2006 Protection against lightning. Physical damage to structures and life hazard.
- BS EN 62305-4: 2006 Protection against lightning. Electrical and electronic systems within structures
- BS 1363: 1995 13 A plugs, socket-outlets, adaptors and connection units. Specification for rewirable and non-rewirable 13 A fused plugs.
- BS 5266 Emergency lighting.
- BS 5389 Fire detection and fire alarm systems for buildings.
- BS 5446 Fire detection and fire alarm devices for dwellings.
- BS 6396: 2008 Electrical systems in office furniture and educational furniture. Specification.
- BS 7671: 2008 (2011) Incorporating latest amendments. Requirements for electrical installations. IET Wiring Regulations.
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Guidance

- ATEX guidelines (3rd edition), European Commission, June 2009.
- Guidance Note 1: Selection and erection of equipment (5th edition), Institution of Engineering and Technology, 2009.
- Guidance Note 3: Inspection and testing (latest edition), Institution of Engineering and Technology, 2008.
- Guidance Note 7: Special locations (latest edition), Institution of Engineering and Technology, 2009.
- Code of practice for in-service inspection and testing of electrical equipment (latest edition), Institution of Engineering and Technology, 2008.
- Avoidance of danger from overhead electric power lines, HSE Guidance Note GS6, HSE Books, 1997
- Electrical test equipment for use by electricians, HSE Guidance Note GS38, HSE Books, 1995.
- Avoiding danger from underground services, HSE Guidance Note HSG47, HSE Books, 2000.
- Electricity at work: safe working practices, HSE Guidance Note **HSG85,** HSE Books, 2003.
- 482/2 Electrical safety of independent low-voltage AC portable and mobile generators and connected systems.HSE Information Document 482/2, HSE, 2004.
- 983_14 Working in Confined Spaces
- 727_06 The dangers of underground services and how to avoid them
- 728_06 Travelling under and working near overhead lines
- 230_10 Safe working and travelling under or near overhead cables

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Operational instructions

- Code of practice for electrical safety (CoPES): Part 1
- 44_07 The management of external contractors
- 153_10 Functional isolation of machinery and equipment
- 300_10_SD06 SD11 Health and safety file
- 263_05 Electrical authorisation of environmental monitoring teams
- 282_10 Fire prevention, alert and escape for Occupied Premises
- 414_09 Providing and managing work equipment - supporting information for office equipment
- 08_05 Providing and managing work equipment
- 1137_08 Safe working near underground services

Supporting documents

- 13_13_SD01 – Certificate of appointment as an authorised person
- 13_13_SD02 – Electrical safety agreement
- 13_13_SD03 – Low voltage permit to work
- 13_13_SD04 – Generators
- 13_13_SD05 – Office desk wiring
- 13_13_SD06 – Lightning protection
- 13_13_SD07 – Temporary electrical supplies
- 13_13_SD08 – Computer and communications rooms
- 13_13_SD09 – Drawings and documentation
- 13_13_SD10 – Fixed electrical installations
- 13_13_SD11 – Electrical equipment testing
- 13_13_SD12 – Electrical authorisation
- 13_13_SD13 – Live working
- 13_13_SD14 – Electrical Safety in Offices and Laboratories

SUPPORTING DOCUMENT 1: Category A checklist (certified timber)

This checklist details how to verify Category A (certified timber) evidence. **SECTION 1: Five checks**

Checks	Yes	No	Comments and actions
Is the supplier a chain of custody (COC) certificate holder?			*If yes, obtain a copy of the certificate/ check the details on the certificate database.* FSC - http://info.fsc.org/ PEFC - http://www.pefc.org/find-certified/certified-certificates
Is the name on the certificate that of the company you wish to purchase from / set up a framework contract with?			*If yes, proceed to the next check.*
Is the certification scheme one of these:			
Forest Stewardship Council (FSC)			*If yes, proceed to the next check.*
Programme for the Endorsement of Forest Certification (PEFC), incorporating SFI and CSA			
Is the certificate valid?			*If yes, proceed to the next check.*
Is the product(s) you want to purchase / make available under a framework contract covered by the registration schedule?			*If yes, proceed with the purchase / score the tender evaluation appropriately.*
If the answer to any of these questions is "No", this supplier can not provide certified timber and one of two subsequent actions should be taken: • If you are undertaking a formal tendering exercise, this doesn't mean that the supplier needs to be necessarily discounted as they might be able to provide Category B evidence which is also acceptable. The tender evaluation should be scored appropriately. • If you are making a one-off direct purchase of timber from a local supplier, contact a Sustainable Procurement Advisor for further advice. We have a strong preference for timber with Category A evidence (i.e. FSC/PEFC certified timber), it is likely that the supplier will have to be discounted, and however queries will be reviewed on a case by case basis.			

Answers to some of these questions can be checked by typing the supplier's COC certificate number (e.g. TT-COC-1234) into a database on the following websites:

- FSC - http://info.fsc.org/
- PEFC - http://www.pefc.org/find-certified/certified-certificates
- These databases will confirm the supplier's name, COC number, certificate validity and scope.

SECTION 2: Submitting a requisition

- Ensure that the requisition includes the following information:
  - the correct SOP category code for the type of timber you are buying (if timber is one element of a wider requisition it should be captured as a separate line under the requisition).
  - a completed "information template" [Note: there are mandatory fields requiring the supplier's COC number, confirmation that the five checks have been completed etc]
- Submit the requisition and await approval before placing the order.

SECTION 3: Placing the order:

- It must be specified that certified timber is required, otherwise the supplier could supply non-certified timber (they may stock both). This should be clearly referenced on any quotes.

SECTION 4: Receiving the timber:

- Check the delivery note states that certified timber has been delivered (this is a certification scheme requirement). If this statement is missing, the timber should be rejected as certified timber has not been supplied. Retain a copy of this as it will be requested as part of the audit process.

24 May 2019

Briefing Note on the use of plastic products in EA assets

Position Statement

In line with our environmental leadership and commitment to ensuring we run our business in a sustainable way, we carefully review materials we use holistically to achieve the most sustainable outcome. This includes a focus on reducing our carbon footprint, reducing the potential to cause pollution and other environmental impacts. We will now also consider the risk of pollution to the aquatic environment from plastic construction products as part of the holistic evaluation of the sustainability of the materials we use and the engineering solutions we deliver. This will be alongside the other important sustainability requirements including using natural resources more sustainably, reducing carbon emissions and improving habitat and biodiversity.

We have developed a set of principles (see Appendix A) to help teams make decisions they need to make now on the use of materials that support this approach. In many cases this will be a qualitative assessment but there may be some quantitative information available (e.g. carbon footprint through the ERIC tool), that can help guide decisions.

Background

Our 25 Year Environment Plan "A Green Future" includes a commitment to significantly reduce and where possible prevent all types of marine plastic pollution, in particular material that came originally from land and eliminate avoidable plastics as a waste stream. The Sustainable Business Team within the EA is working on a range of initiatives in this area across all our work activities. This includes working with our supply chain partners to reduce single use plastic waste from our construction activities. Further information on these initiatives is available on the Easinet.

We are also committed to ensuring we minimise our impact through our asset creation and management practices by taking account of the sustainability impacts of the materials we use to build and maintain assets. The risk of pollution from plastic products is one factor, but we will also consider a wide range of factors that also contribute to our commitments in the '25 Year Plan' e.g. using resources from nature more sustainably, reducing our carbon footprint, improving habitat and biodiversity.

We recognise that there are benefits and disbenefits from using plastic products compared with other materials. For example, some plastic products enable softer and more natural engineering solutions whilst giving confidence in long-term performance. In other cases, they allow solutions with a lower carbon footprint through replacement of other higher embodied carbon materials. In some cases we will be able to identify better solutions that avoid use of plastics.

Construction products made from plastic products should be considered alongside more conventional materials for the relative benefits/ disbenefits. All construction materials will have sustainability impacts and this needs to be considered holistically and across their lifecycle.

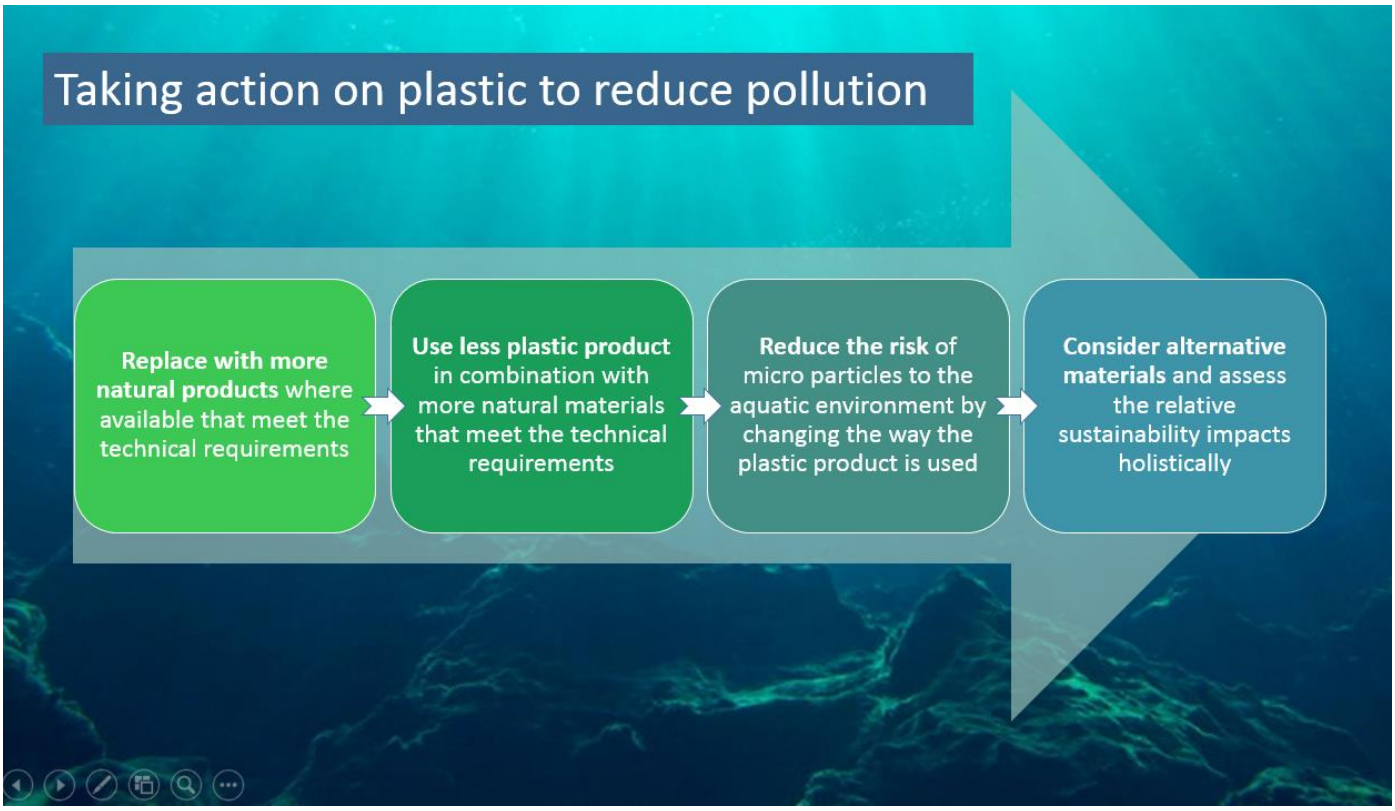
Next steps

Over the coming months we will be looking at our most significant uses of plastic products, evaluating the risk posed to the aquatic environment and understanding the alternative solutions available. This will inform decisions we can make nationally, such as through our engineering standards, and we will also be able to provide more detailed guidance to teams. It will also help to stimulate manufacturers to improve products and developing alternatives to reduce or avoid the impact from plastic pollution.

Please contact andrew.powell@environment-agency.gov.uk to share examples of innovative products that reduce the use of plastic and examples of assessments between products where they may be of use to others.

Appendix A - Principles to aid decision making

These principles have been developed to aid decision-making pending further work to understand the sustainability impacts and alternatives. The principles should be considered within the overall holistic approach to assessing sustainability of materials described above and as part of design risk assessments. Key considerations should be the likelihood of micro particles entering the aquatic environment and whether there is a better alternative available that can reduce or avoid the risk with a lesser overall sustainability impact.



CONSIDER THE RISK

Environmental factors - abrasion

Avoid the use of plastic products that will be exposed to high-energy environments and subject to significant abrasion, particularly where there are alternative products with a lower overall sustainability impact.

Environmental factors influence the degradation of plastic materials and the likelihood of micro particles entering the aquatic environment. Abrasion of exposed plastic materials is more likely in high-energy environments e.g. on the foreshore. This should be avoided in such locations where alternative materials are available e.g. certified timber for groynes. There may be situations where plastic products remain the best overall sustainability option even in these situations, replacing materials with greater sustainability impact and subject to corrosion e.g. flap valves.

Susceptibility to the release of plastic material

Use plastic products that are robust and will maintain their integrity over the long-term. Avoid using products that could easily release plastic materials.

In most cases, plastic products used in construction are manufactured to achieve long-term performance in use. However, some products have fine plastic fibres that are relatively loosely contained within an overall matric structure. These can be more susceptible to releasing plastic materials into the aquatic environment either in the construction process or during routine maintenance activities and may be more susceptible to environmental factors (see environmental factors).

OTHER FACTORS TO CONSIDER

Carbon Footprint / Resource efficiency

Where the plastic product significantly reduces the carbon footprint of the solution, this should be judged against the likelihood and quantity of plastic that will enter the aquatic environment over the design life of the asset.

Our commitment to reducing our carbon footprint is a key objective. Some products allow the efficient use of on-site natural materials and contain a very small amount of plastic compared to the other materials within/contained by them. Other products directly replace other materials with a much higher carbon footprint. For example, an assessed could be undertaken on the amount of plastic released from abrasion of fibre reinforced concrete on a coastal concrete structure over the life of the asset compared to the tonnes of embodied carbon saved by using polymer fibres as an alternative of using steel reinforcement.

Cost of alternative products/solutions

Where there are alternative products/solutions that are clearly more sustainable within reasonably comparable cost, these should be used where feasible. As a principle, these decisions should not jeopardise the financial viability of the delivery of the works.

Reasonable cost will be a judgement based on the impact of the decision in terms of cost verses the benefit from using an alternative product. Modest cost increases for alternative products may well be acceptable based on this judgement, particularly as we want to stimulate the market to innovate and produce more sustainable products.

Soft engineering solutions using natural/sustainable materials

Plastic products that enable soft engineering solutions that meet engineering requirements are generally preferred to hard engineering solutions. Products made from natural and sustainable materials that meet the engineering requirements should be considered.

Some plastic products enable softer and more natural engineering solutions (e.g. rock rolls for erosion protection) by providing confidence in long-term performance that is required. This type of solution can improve habitat and biodiversity (through accretion of sediment, colonisation by plants and insects etc). Improved habitat may be one of the top outcomes we seek in a particular locations e.g. WFD requirements. Harder engineered solutions can have a more significant sustainability impact and often provide little or no habitat benefit. Products made from natural and sustainable materials (e.g. coir/jute and timber) may be suitable in lower energy environments, taking account of energy levels, flows, shear stress, abrasion issues and design life etc. These should be considered in such cases.

Design life / longevity

Use products that are resistant to UV, have sufficient UV protection and are manufactured to meet long-term engineering requirements. Avoid the use of plastic products for short-term applications where they will not be reused elsewhere or at least recycled.

There are a wide range of plastic materials with different levels of performance. In most cases, plastic products used in construction are manufactured to achieve long-term performance. However, some examples of plastic products are designed for short-term use and are not reused/recycled after. These should be avoided, particularly where there is a suitable alternative product on the market with a lower sustainability impact - check for information in Environmental Product Declarations. An exception to this would be solutions with plastic materials that effect repairs to existing assets, thereby prolonging the life of the asset at a fraction of the sustainability impact of demolition and construction of a new asset.

Recycled Content

Use plastic products with recycled content where possible.

Construction products made from plastic products should be considered alongside more conventional materials for the relative benefits/ disbenefits. Where plastic is the most sustainable material, we'll seek products with a high recycled content and that are recyclable at their end of life where possible. This increases the value in secondary plastics and helps to drive a circular economy approach for plastics.