

**PROPERTY
NOTE**

Handover procedures for property projects

STATUS

This note is mandatory.

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PN 14042010

SUMMARY

This note describes the procedures that will assist in ensuring a consistent standard is achieved for the provision of handover information together with the procedures to be followed for managing defects arising.

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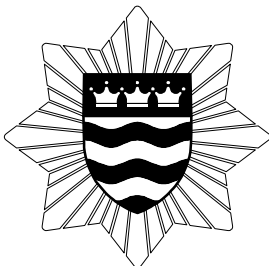
Contents

Page no

- | | | |
|---|---|--|
| 1 | Scope | |
| 2 | Introduction | |
| 3 | Handover information requirements | |
| 4 | Information to be provided before practical completion | |
| 5 | Induction requirements | |
| 6 | Defects during the liability period | |
| 7 | Property Department filing structure/system | |

Appendices

- 1 **Handover information structure**
- 2 **Premises Abbreviations**
- 3 **Defects liability and reporting procedures**
- 4 **Asset information requirements**
- 5 **Submitting Cad Drawings to LFB**



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1.1 SCOPE

This procedure applies to all London Fire Brigade (LFB) establishments where property related works have been undertaken and information is required to be updated as a result of the works.

1.2 INTRODUCTION

This document sets out the LFB Property Department requirements for the production and handover of technical information at the end of the works, or at practical completion..

The purpose of this Property Note is to ensure that a consistent standard of key project data is captured from the design and construction phase of a project and is presented and included in a coherent structure which is compatible with the information required by the Property Department.

The provision of data in the format specified will enable the data to be integrated into the Property Department Filing Structure which will ultimately ensure that the equipment can be maintained in the subsequent operational phase and statutory requirements met.

This procedure also details:

- the information to be provided before the end of the works/or at practical completion to enable any specialist service contracts to be established
- induction requirements
- fault handling during the defects liability period
- defects reporting procedures

The term 'Project Lead Officer' as used in this document is the person in the Property Department who is co-ordinating delivery of the project/scheme.

1.3 HANDOVER INFORMATION REQUIREMENTS

The Property Department filing system for technical records is titled: Premises Health and Safety File.

The aim of this system is to ensure that all technical information and documents are received and recorded in a consistent format.

Existing hard copy information will be phased out wherever possible as the information is scanned and stored electronically.

A Health and Safety File in an electronic form has been created for each of the London Fire Brigade premises and comprises a 7 volume system as below:

H&S FILE STRUCTURE	Volume A	Project H&S File
	Volume B	Asbestos File
	Volume C	Electrical O&Ms, test, commissioning/warranty certificates & drawings
	Volume D	Mechanical O&Ms, test, commissioning/warranty certificates & drawings
	Volume E	Building Fabric Manual
	Volume F	Premises (day to day) Operation File
	Volume G	Premises Log Book (site based)

Each volume contents are detailed within the specification for handover information and all documents files received must be named in accordance with the details set out at Appendix 1 and be in the format specified.

Documents shall be provided on a readable CD.

All documents shall be in PDF format, except for drawings that shall be submitted in both PDF and DWG formats- version 2004 or a more recent version.

NOTE: All PDF documents shall be of such quality that the information is legible. The document's orientation shall be "Portrait" to facilitate reading.

NOTE: When the information involves CCTV footage i.e. sewage surveys, etc, the files shall be submitted in "AVI" format.

The specification for CAD drawings is at Appendix 5.

Handover information will normally be provided for Volumes A, C, D & E as applicable. Volumes B, F and G will normally be updated by processes within the Property Department.

Determining the scope of handover information for a particular project

The last column of Appendix 1 shall be used by the consultant and 'ticked' to indicate which item of information will be applicable for a particular project.

At the handover meeting the Project Lead Officer shall check Appendix 1 to ensure all appropriate information has been supplied.

1.4 INFORMATION TO BE PROVIDED BEFORE PRACTICAL COMPLETION

- 1.5 Service contracts are generally administered by Property Services' Facilities Management Team. It is essential that, in advance of practical completion, the team is given sufficient information about any operationally important item of equipment or plant requiring responsive maintenance or servicing during the defects liability period. This information is required to seek quotations and make arrangements for servicing and responsive maintenance.
- 1.6 Advance notice must be provided to the Energy Manager for inclusion of properties in the LFB Energy Contracts or details of any proposed change in supply details.
- 1.7 It is the responsibility of the Project Lead Officers to ensure that handover information provided complies with the H&S File structure and the content of this policy.

5. INDUCTION REQUIREMENTS

- 5.1 All necessary personnel shall receive appropriate training to enable the handover and continued safe and efficient operation of equipment.
- 5.2 Where necessary encapsulated instructions shall be posted during the familiarisation period advising users of how to operate equipment.

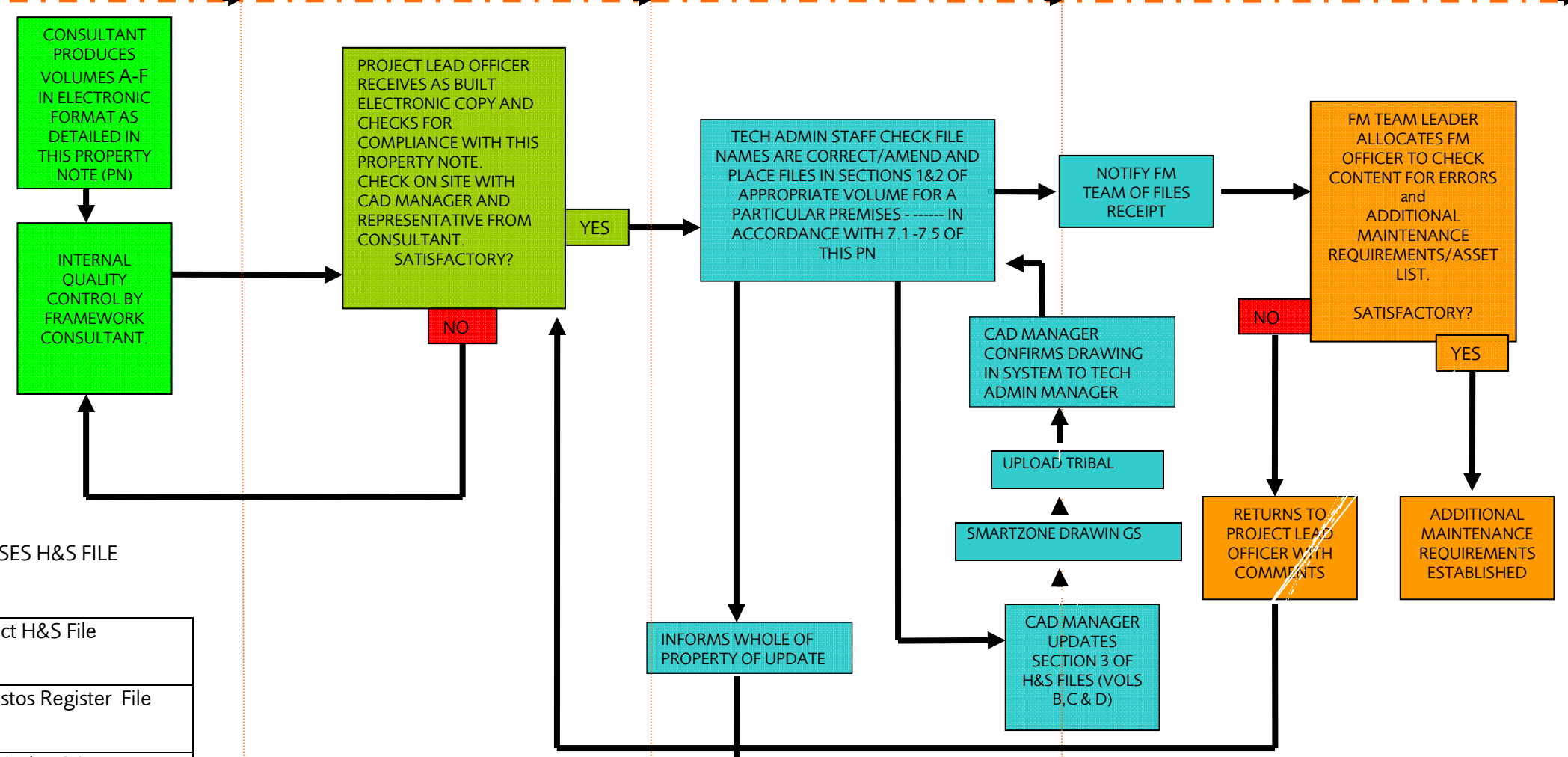
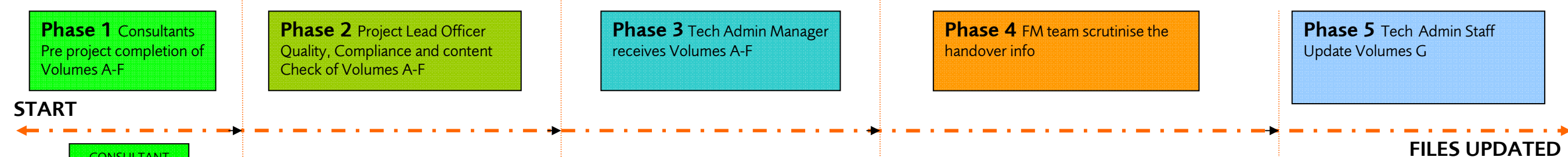
- 5.3 The telephone contact point details of the contractor responsible for the maintenance during the defects liability period shall be provided to the Property Help Desk together with the date of expiry of the arrangements.

6. DEFECTS DURING THE LIABILITY PERIOD

The procedures to be followed for defects during the liability period are detailed at Appendix 3.

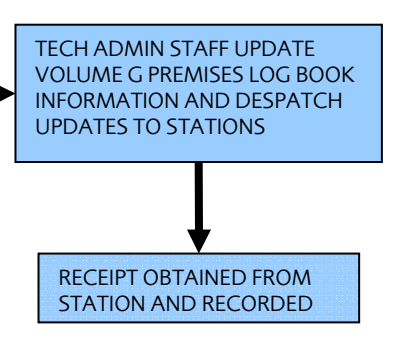
7. PROPERTY DEPARTMENT FILING STRUCTURE/SYSTEM

The Department filing procedures for managing and updating technical information in files for which Property Department has responsibility are detailed in this section and illustrated on the following flowchart.



PREMISES H&S FILE

Volume A	Project H&S File
Volume B	Asbestos Register File
Volume C	Electrical O&Ms, test, commissioning/warranty certificates & drawings
Volume D	Mechanical O&Ms, test, commissioning/warranty certificates & drawings
Volume E	Building Fabric Manual
Volume F	Premises (day to day) Operation File
Volume G	Premises Log Book (site based)



7.1 INTRODUCTION

The Premises Health and Safety File structure has been developed within the Property Services Department (PSD) from the existing file structures, with enhancements to produce one common Health and Safety file structure for each premise. This will fulfil the needs of receiving, managing and recording technical and Health and Safety information within PSD in a controlled manner.

In particular this document is aimed at moving towards an integrated Department wide electronic file keeping system.

The structure and detail requirements fulfil the following:

- To allow end users (FM team) to quickly reference current mechanical, electrical, building and health and safety information for each premise.
- To allow Property staff to quickly reference current mechanical, electrical, building and health and safety information for each premise.
- To maintain accurate premise information in a structured and controlled manner.
- To receive accurate premise information in a structured way following completion of project works (minor and major projects).
- To enable Client compliance with the CDM regulations by facilitating the supply of accurate pre-construction information for each premise.
- Provide an electronic framework for receiving and maintaining electronic records

7.2 STATUTORY AND REGULATORY REQUIREMENTS:

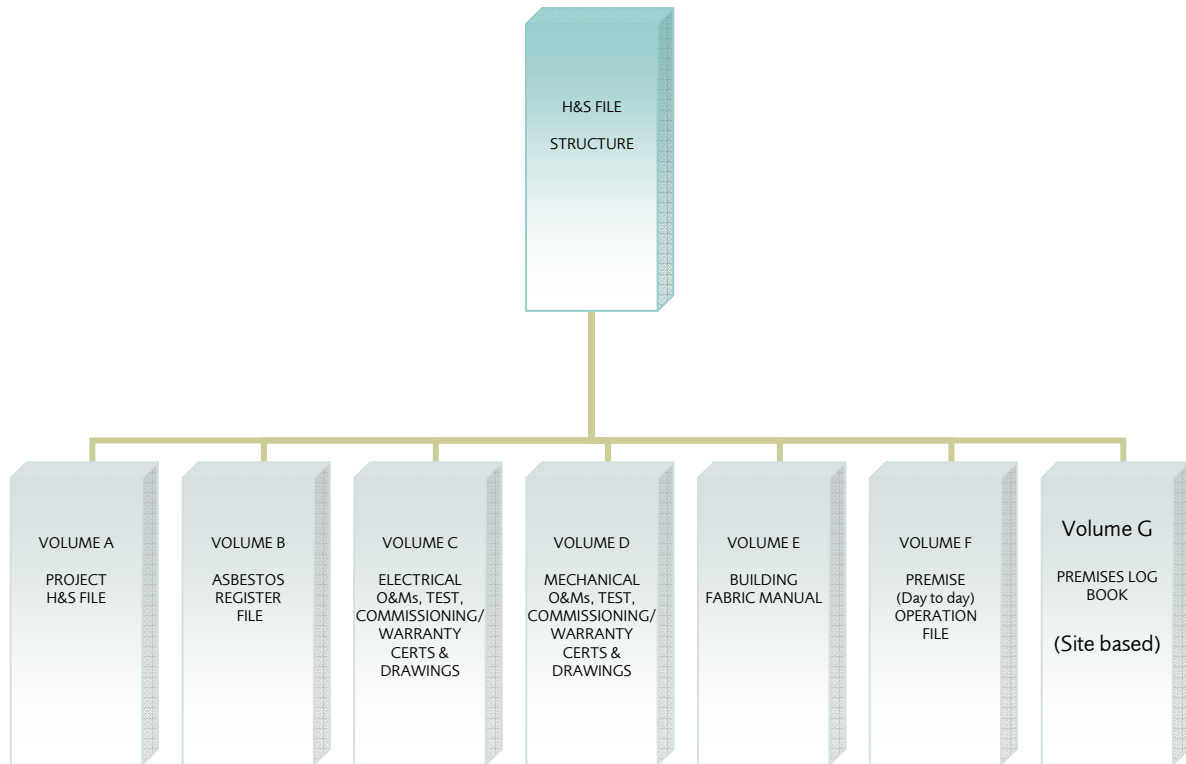
The following Statutory notices and regulations have been taken into account to ensure records are kept and maintained in compliance with client side obligations.

- Construction (Design and Management) Regulations 2007
- The Health and Safety at Work etc. Act 1974
- The Regulatory Reform (Fire Safety) Order 2005
- Asbestos Management Regulations 2006
- Building Regulations and Amendments
- The Gas Safety (Installation and Use) Regulations 1998.
- The Management of Health and Safety at Work Regulations 1999.

7.3 PREMISES H&S FILE STRUCTURE (ELECTRONIC)

The Premises H&S File system shall be held predominately in an electronic format with some of the volumes held in both electronic format and paper based, until processes have been put in place to enable these to be also electronically received. Organisation of the files/documents is detailed at Appendix 1.

Each Premises Health and Safety (PH&S) file consists of seven volumes, uniquely indexed to form detailed information covering the requirements required within PSD to deliver its core services of property maintenance, estate procurement and disposal and major project refurbishment. The physical structure of the PH&S files system is as detailed below.



7.4 MAINTAINING AND USING THE H&S FILE STRUCTURE

The Premises H&S file system has replaced all existing premise file records and ad-hoc health and safety databases. The file structure within each volume will be maintained in general by the Technical Administration Manager and by key staff with designated responsibilities for health and safety or that of given record responsibilities.

The contents of each volume are detailed within Appendix 1. This table details the contents of each volume electronically along with the file title/name, format, contents description and a tick-box to use to indicate whether the specific information is required for the particular project. The electronic records database can be found at <X:\Non-EDMS\PHS>

Some existing records will need to be kept in a physical format until such a time as the business process involved in generating the records have been transferred to an electronic processes. Staff using the system will have access to all current records for each premise with the ability to update the record, copy the technical file or drawing and email them electronically to external staff. This system will considerably improve the accessibility and retrieval of the technical information for each premise.

7.5 HANDOVER OF NEW HEALTH AND SAFETY FILE RECORDS

All files supplied as part of the handover information must use the referencing format detailed in Appendix 1. This will facilitate the supply of CDM Client side information for future projects.

Handover of new records to PSD arises from three main activities:

- Major refurbishment projects
- Minor refurbishment project works
- Procurement of new premises.

In preparing handover documents Project Lead Officers should ensure that electronic documents are obtained as detailed in the PH&S premise file system at Appendix 1.

All major projects should include a complete new set of electronic records. Minor projects should replace or update those parts of the H&S file Volume as necessary and only relevant parts of the other volumes as is deemed necessary by the Project Lead Officer under his client duties.

Records should be presented on a readable CD for copying to the relevant parts of the PH&S file structure.

REQUIRED FORMAT/ORGANISATION OF THE FILES/DOCUMENTS

VOLUME A - PROJECT H&S FILE			
File Reference	CONTENT DESCRIPTION	FILE FORMAT	Applicable Yes/No
SECTION ONE:	H&S FILE INSTRUCTIONS		
VOL-A-1.1.1	H&S FILE DESCRIPTION (Client document ref....)		no
SECTION TWO:	PREMISE PROJECT HISTORY.		
VOL-A-2-2.1	Premise Project History Sheet. (Excel table of brief description of projects carried out by location, consultant, contractor, client details project name and dates.)		
VOL-A-2-2.2	Project Directory: details of the Project Team. (Excel table for each project undertaken, by date.)		
VOL-A-2-2.3	Project Description: summary of the works undertaken, design criteria and construction methods employed. (One new page for each project carried out in date order.)		
VOL-A-2-2.4	Project Timescales. (One per page per project carried out.)		
VOL-A-2-2.5	SPARE. (USE AS NECESSARY IN INCREASING NUMBERS)		
SECTION THREE:	PROJECT RELATED RESIDUAL HAZARDS AND ENVIRONMENTAL CONTROLS' TABLES.		
VOL-A-3-3.1	Excel Table of COSHH data sheets and assessment of all hazardous materials with residual hazards in the permanent works.		
VOL-A-3-3.2	Excel Table of material hazards identified. (Land and utilities.)		
VOL-A-3-3.3	Soil and site investigation report.		
VOL-A-3-3.4	Excel Table of structure hazards (Asbestos, lead paint etc.) and information on removing or dismantling installed plant and equipment		
VOL-A-3-3.5	Excel Table of service hazards. (Buried cables, water main, electrical and gas.)		
VOL-A-3-3.6	Excel Table of chemicals, ozone depleting substances and used refrigerants used during the project.		

VOL-A-3-3.7	Excel Table of fragile material by location.		
VOL-A-3-3.8	Excel Table of working at height hazards identified and future access controls for maintenance requirements.		
VOL-A-3-3.9	Health and safety information about in built safety features/equipment for maintaining and cleaning the structure.		
VOL-A-3-3.10	Information about ground conditions, underground water courses, underground structures (including fuel tanks) where these may affect the safety of ground works or the safe use of plant.		
VOL-A-3-3.11	HSE F10 notification form.		
VOL-A-3-3.12	SPARE.		
SECTION FOUR:	PLANNING/ BUILDING REGULATIONS AND STRUCTURAL INFORMATION.		
VOL-A-4-4.1	Planning details and consent forms.		
VOL-A-4-4.2	Building regulation application form and approval notification form.		
VOL-A-4-4.3	Details of DDA assessments and access routes.		
VOL-A-4-4.4	Details of the fire risk strategy forming part of the submission to Building Control.		
VOL-A-4-4.5	Building Control Completion Certificate. Certificates of Practical Completion.		
VOL-A-4-4.6	Details of key structural principles, structural stability, structural modifications, structural form and methods of construction. Health and safety information contained in earlier design, construction or 'as-built' drawings, such as details of pre-stressed or post-tensioned structures		
VOL-A-4-4.7	SPARE.		

VOLUME B - ASBESTOS REGISTER (DYNAMIC FILE.)

File Reference	CONTENT DESCRIPTION	FILE FORMAT	Applicable Yes/No
SECTION ONE:	CORRESPONDENCE.		
VOL-B-1-1.1	Record of requests for asbestos inspections and sampling.		
VOL-B-1-1.2	Asbestos purchase orders and invoice data.		
VOL-B-1-1.3	General correspondence.		
VOL-B-1-1.4	SPARE.		
SECTION TWO:	TYPE III SURVEYS AND PRE-PROJECT ASBESTOS SURVEYS.		
VOL-B-2-2.1	Type III Surveys.		
VOL-B-2-2.2	Pre-Project Asbestos Surveys. (PPAS.)		
VOL-B-2-2.3	SPARE.		
SECTION THREE:	TYPE II SURVEYS.		
VOL-B-3-3.1	Type II Surveys.		
VOL-B-3-3.2	Premise updates' records.		
VOL-B-3-3.3	Premise log book: Excel spreadsheet. (Tribal Master copy.)		
VOL-B-3-3.4	Premise log book: Drawings. (Master copy.)		
VOL-B-3-3.5	SPARE.		
SECTION FOUR:	REMOVAL PROJECTS.		
VOL-B-4-4.1	Pre-contract details.		
VOL-B-4-4.2	Contract documents.		
VOL-B-4-4.3	Tender analysis.		
VOL-B-4-4.4	Purchase order.		
VOL-B-4-4.5	Method statement.		

VOL-B-4-4.6	HSE notification.		
VOL-B-4-4.7	Site meetings.		
VOL-B-4-4.8	Invoice payments.		
VOL-B-4-4.9	Completion certificates.		
VOL-B-4-4.10	SPARE.		
SECTION FIVE:	ENVIRONMENTAL WASTE CONSIGNMENT NOTE.		
VOL-B-5-5.1	Waste consignment notes per premise area.		
VOL-B-5-5.2	Air clearance certificates per premise area.		
VOL-B-5-5.3	SPARE.		
SECTION SIX:	EMERGENCY ASBESTOS SAMPLES.		
VOL-B-6-6.1	Asbestos sample analysis per premise area.		
VOL-B-6-6.2	SPARE.		

**VOLUME C- ELECTRICAL OPERATION & MAINTENANCE MANUAL, TEST,
COMMISSIONING/WARRANTY CERTIFICATES & DRAWINGS**

File Reference	CONTENT DESCRIPTION	FILE FORMAT	Applicable Yes/No
SECTION ONE:	MANUFACTURER'S OPERATING AND MAINTENANCE INSTRUCTIONS. (CONTAINS DESCRIPTIONS OF AUTOMATIC OPERATION, ROUTINE INSPECTIONS, FAULT FINDING, FAULT CONDITIONS, EMERGENCY PROCEDURES AND GENERIC MAINTENANCE PROCEDURES AND MAINTENANCE TASK MATRIX, AND SPARES LIST.)		
VOL-C-1-1.1	HV, LV Mains incomer details, Meters and isolation switch details.		
VOL-C-1-1.2	General HV, LV ELV and SELV details including electrical accessories details e.g. switch, socket outlet types etc.		
VOL-C-1-1.3	Standby generator details.		
VOL-C-1-1.4	Uninterruptible Power Supply details.		
VOL-C-1-1.5	General Luminaire and control details. (Call lighting details.)		
VOL-C-1-1.6	Emergency lighting system, test points' details.		
VOL-C-1-1.7	Earthing and bonding system details.		
VOL-C-1-1.8	Lightning protection system details.		
VOL-C-1-1.9	Fire alarm detection system details.		
VOL-C-1-1.10	Public address and Tannoy system details.		
VOL-C-1-1.11	CCTV system details.		
VOL-C-1-1.12	Appliance battery charging and cable winding system.		
VOL-C-1-1.13	Gas suppression system details.		
VOL-C-1-1.14	Clock systems details.		
VOL-C-1-1.15	Radio communications system details.		
VOL-C-1-1.16	TV/Satellite system details.		
VOL-C-1-1.17	Security/access control system details.		
VOL-C-1-1.18	Portable appliances. (In alphabetical order.)		
VOL-C-1-1.19	Trace heating system details.		
VOL-C-1-1.20	Building energy management details.		
VOL-C-1-1.21	Spares' List. (Table Format.)		
VOL-C-1-1.22	Asset number list. (By Room.)		
VOL-C-1-1.23	Disabled toilet alarm system		
VOL-C-1-1.24	Renewable Energy (PV) Systems		
VOL-C-1-1.25	Renewable Energy (CHP) Systems		
VOL-C-1-1.26	SPARE.		

SECTION TWO:	TESTING AND COMMISSIONING/WARRANTY CERTIFICATES.		
VOL-C-2-2.1	Inspection and commissioning test list. (Table format with dates.)		
VOL-C-2-2.2	HV, LV, ELV and SELV Electrical system test certificates.		
VOL-C-2-2.3	Standby generator, commissioning certificates and load test results.		
VOL-C-2-2.4	Uninterruptible Power Supply commissioning certificates.		
VOL-C-2-2.5	General Luminaire and lighting control (call lighting) test certificates and Lux readings.		
VOL-C-2-2.6	Emergency lighting system, Lux readings and electrical test certification.		
VOL-C-2-2.7	Earthing and bonding system electrical continuity test results.		
VOL-C-2-2.8	Lightning protection system resistance tests and earth pit readings.		
VOL-C-2-2.9	Fire alarm detection system electrical test certificates, sound tests and point commissioning test results.		
VOL-C-2-2.10	Public address and Tannoy electrical test certificates and sound level records.		
VOL-C-2-2.11	CCTV system electrical tests and commission certificates.		
VOL-C-2-2.12	Appliance battery charging and cable winders' commissioning certificates.		
VOL-C-2-2.13	Gas suppression system electrical test results and commission certification.		
VOL-C-2-2.14	Clock systems electrical test certificates and commissioning certificates.		
VOL-C-2-2.15	Radio communications systems, electrical test certificates and commissioning documentation.		
VOL-C-2-2.16	TV / Satellite system electrical test certification and commissioning documentation.		
VOL-C-2-2.17	Security / access control system, electrical test certificates and commissioning certificates.		
VOL-C-2-2.18	Portable appliance test certificates.		
VOL-C-2-2.19	Trace heating test certificates.		
VOL-C-2-2.20	Building energy management commissioning certificates.		
VOL-C-2-2.21	Renewable Energy (PV) Systems		
VOL-C-2-2.22	Renewable Energy (CHP) Systems		
VOL-C-2-2.23	SPARE.		

SECTION THREE:	AS INSTALLED DRAWINGS. (The following is a list of minimal information required in the form of "As Built" drawings. All drawings shall be submitted by floor. For "File naming" , "Cad layer System" ,etc see Appendix 5 "Submitting Cad Drawings to LFB")		
	CONTENT DESCRIPTION		
	HV, LV Mains incoming details and isolation schematic's and as installed drawings.	FILE FORMAT	Applicable Yes/No
	HV Mains incoming details		
	HV Mains incoming isolation schematic's		
	HV Mains incoming details - as installed drawings.		
	LV Mains incoming		
	LV Mains incoming isolation schematic's		
	LV Mains incoming details - as installed drawings.		
	General HV, LV ELV and SELV schematics and as installed drawings.		
	General HV schematics		
	General LV schematics		
	General ELV		
	General SELV schematics		
	General HV as installed drawings.		
	General LV as installed drawings.		
	General ELV as installed drawings.		
	General SELV as installed drawings.		
	Standby generation schematics and as installed drawings.		
	Standby generation schematics		
	as installed drawings.		
	Uninterruptible Power Supply's schematics and as installed drawings.		
	Uninterruptible Power Supply schematics		
	as installed drawings.		
	General luminaries and control schematic and as installed drawings.		
	General luminaries and control schematic		
	as installed drawings.		
	Emergency lighting schematic and as installed drawings.		
	Emergency lighting schematic		
	as installed drawings.		
	Earthing and bonding schematic and as installed drawings.		
	Earthing and bonding schematic		
	as installed drawings.		
	Lightning protection schematic and as installed drawings.		
	Lightning protection schematic		
	as installed drawings.		

	Fire alarm detection schematic and as installed drawings		
	Fire alarm detection schematic		
	As installed drawings.		
	Public address and Tannoy schematic and as installed drawings.		
	Public address and Tannoy schematic		
	as installed drawings.		
	CCTV system schematic and as installed drawings.		
	CCTV system schematic		
	as installed drawings.		
	Appliance battery charging and cable winders schematic and as installed drawings.		
	Appliance battery charging and cable winders schematic		
	as installed drawings.		
	Gas suppression schematic and as installed drawings.		
	Gas suppression schematic		
	as installed drawings.		
	Clock systems schematic and as installed drawings.		
	Clock systems schematic		
	as installed drawings.		
	Radio communications schematic and as installed drawings.		
	Radio communications schematic		
	as installed drawings.		
	TV/Satellite system schematic and as installed drawings.		
	TV/Satellite system schematic		
	as installed drawings.		
	Security/access control system schematic and as installed.		
	Security/access control system schematic		
	as installed drawings.		
	Portable appliance drawings if applicable.		
	Trace heating test schematic and as installed drawings.		
	Portable appliance drawings		
	as installed drawings.		
	Building energy management systems schematic and as installed drawings.		
	Building energy management systems schematic		
	as installed drawings.		
	SPARE		

**VOLUME D -MECHANICAL OPERATION & MAINTENANCE MANUAL, TEST,
COMMISSIONING/WARRANTY CERTIFICATES & DRAWINGS**

File Reference	CONTENT DESCRIPTION	FILE FORMAT	Applicable Yes/No
SECTION ONE:	MANUFACTURER'S OPERATING AND MAINTENANCE INSTRUCTIONS. (TO CONTAIN DESCRIPTIONS OF AUTOMATIC OPERATION, ROUTINE INSPECTIONS, FAULT FINDING, FAULT CONDITIONS, EMERGENCY PROCEDURES AND GENERIC MAINTENANCE PROCEDURES AND MAINTENANCE TASK MATRIX, AND SPARES' LIST.)		
VOL-D-1-1.1	Gas system and boosters and meter installation details.		
VOL-D-1-1.2	Mains water intake, tanks, pumps and meter details.		
VOL-D-1-1.3	Sewage systems' (holding tanks and sewage pumps) details.		
VOL-D-1-1.4	Wet and dry fire fighting system details.		
VOL-D-1-1.5	Combined Heating and Power system.		
VOL-D-1-1.6	Boiler heating system. (Pumps, pressurisation, flue installations, de-aerators.)		
VOL-D-1-1.7	Gas space heaters' details.		
VOL-D-1-1.8	Domestic hot water systems (direct fired and storage systems).		
VOL-D-1-1.9	Domestic cold water system details.		
VOL-D-1-1.10	Low, medium, high temperature heating installation (including heat emitting devices).		
VOL-D-1-1.11	Chilled water installation details.		
VOL-D-1-1.12	Refrigeration system. (Pumps, pressurisation.)		
VOL-D-1-1.13	Fuel storage and pipe distribution installation.		
VOL-D-1-1.14	DX units, heat pumps and stand alone ACU's details.		
VOL-D-1-1.15	Thermal hot water system.		
VOL-D-1-1.16	Air Conditioning Units (including heat pumps).		
VOL-D-1-1.17	Mechanical ventilation systems. (Ductwork, dampers, heater/cooler batteries, grilles, fans, terminal devices, filters and controls.)		
VOL-D-1-1.18	Water treatment and dosing system details.		
VOL-D-1-1.19	Spare parts' list.		
VOL-D-1-1.20	Asset list (by room) -see Appendix 4 for level of detail required which should be included in an excel spreadsheet.		
VOL-D-1-1.21	Lift systems and lifting equipment/systems		
VOL-D-1-1.22	Sanitary ware , toilets, urinals, wash basins, taps, shower controls and cubicle equipment		
VOL-D-1-1.23	Kitchen equipment		
VOL-D-1-1.24	Building Log Book –TM31		
VOL-D-1-1.25	Energy Performance Certificate (EPC)		
VOL-D-1-1.26	Solar Heating Systems		
VOL-D-1-1.27	SPARE.		

SECTION TWO:	TESTING AND COMMISSIONING/WARRANTY CERTIFICATES.		
VOL-D-2-2.1	Gas system and meter and boosters commissioning certificates.		
VOL-D-2-2.2	Mains water intake, tanks, pumps and meter commissioning certificates.		
VOL-D-2-2.3	Sewage systems. (Holding tanks and sewage pumps commissioning certificates.)		
VOL-D-2-2.4	Wet and dry Fire fighting system commissioning certificates.		
VOL-D-2-2.5	Combined heating and power system commissioning certificates.		
VOL-D-2-2.6	Boilers heating system (pumps, pressurisation, flue installations, de-aerators) commissioning certificates.		
VOL-D-2-2.7	Gas space heaters details commissioning certificates.		
VOL-D-2-2.8	Domestic hot water systems' (direct fired and storage systems) commissioning certificates.		
VOL-D-2-2.9	Domestic cold water system details commissioning certificates.		
VOL-D-2-2.10	Low, medium, high temperature heating installation (including heat emitting devices) commissioning certificates.		
VOL-D-2-2.11	Chilled water commissioning certificates.		
VOL-D-2-2.12	Refrigeration system (pumps, pressurisation) commissioning certificates.		
VOL-D-2-2.13	Fuel storage and pipe distribution installation commissioning certificates.		
VOL-D-2-2.14	DX units, heat pumps and stand alone ACU details. Commissioning certificates.		
VOL-D-2-2.15	Thermal hot water system commissioning certificates.		
VOL-D-2-2.16	Air Conditioning Units' (including heat pumps) commissioning certificates.		
VOL-D-2-2.17	Mechanical ventilation systems' (ductwork, dampers, heater/cooler batteries, grilles, fans, terminal devices, filters and controls) commissioning certificates.		
VOL-D-2-2.18	Water treatment and dosing system details commissioning certificates.		
VOL-D-2-2.19	Lift systems' test, maintenance, safety and commissioning certificates.		
VOL-D-2-2.20	Lifting equipment including appliances, eyebolts and safety rope systems		
VOL-D-2-2.21	Solar Heating Systems		
VOL-D-2-2.22	SPARE.		

SECTION THREE:	AS INSTALLED DRAWINGS (The following is a list of minimal information required in the form of "As Built" drawings. All drawings shall be submitted by floor. For "File naming" , "Cad layer System" ,etc see Appendix 5 "Submitting Cad Drawings to LFB")		
	CONTENT DESCRIPTION		
	Gas system and meter boosters commissioning schematics and as installed drawings.	FILE FORMAT	Applicable Yes/No
	Gas system and meter boosters commissioning schematics		
	as installed drawings.		
	Mains water intake, tanks, pumps and meter schematics and as installed drawings.		
	Mains water intake schematics		
	Tanks schematic		
	Pumps schematic		
	Meter schematic		
	Mains water intake as installed drawings.		
	Tanks as installed drawings.		
	Pumps as installed drawings.		
	Meter as installed drawings.		
	Sewage systems. (Holding tanks and sewage pumps schematics and as installed drawings.)		
	Sewage system holding tanks schematics		
	Sewage system sewage pumps schematics		
	Sewage system holding tanks as installed drawings.		
	Sewage system sewage pumps as installed drawings.		
	Wet and dry Fire fighting system schematics and as installed drawings.		
	Wet Fire fighting system schematics		
	dry Fire fighting system schematics		
	Wet Fire fighting system as installed drawings		
	dry Fire fighting system as installed drawings		
	Combined Heating and Power system schematics and as installed drawings.		
	Combined Heating and Power system schematics		
	Combined Heating and Power system as installed drawings		
	Boiler heating system (pumps, pressurisation, flue installations, de-aerators) schematics and as installed drawings.		
	Boiler heating system pumps schematics		
	Boiler heating system pressurisation schematics		
	Boiler heating system flue installations schematics		
	Boiler heating system de-aerators schematics		
	Boiler heating system pumps as installed drawings		

		Boiler heating system pressurisation as installed drawings		
		Boiler heating system flue installations as installed drawings		
		Boiler heating system de-aerators as installed drawings		

	Gas space heaters details schematics and as installed drawings.			
		Gas space heaters details schematics		
		Gas space heaters details as installed drawings		
	Domestic hot water systems' (direct fired and storage systems) schematics and as installed drawings.			
		Direct fired domestic hot water systems' schematics		
		Storage system domestic hot water systems' schematics		
		Direct fired domestic hot water systems' as installed drawings		
		Storage system domestic hot water systems' as installed drawings		
	Domestic cold water system schematics and as installed drawings.			
		Domestic cold water system schematics		
		Domestic cold water system as installed drawings		
	Low, medium, high temperature heating installation (including heat emitting devices) schematics and as installed drawings.			
		Low temperature heating installation (including heat emitting devices) schematics		
		Medium temperature heating installation (including heat emitting devices) schematics		
		High temperature heating installation (including heat emitting devices) schematics		
		Low temperature heating installation (including heat emitting devices) as installed drawings		
		Medium temperature heating installation (including heat emitting devices) as installed drawings		
		High temperature heating installation (including heat emitting devices) as installed drawings		
	Chilled water schematics and as installed drawings.			
		Chilled water schematics		
		Chilled water as installed drawings		
	Refrigeration system (pumps, pressurisation) schematics and as installed drawings.			
		Refrigeration system pumps' schematics		
		Refrigeration system pressurisation schematics		
		Refrigeration system pumps' as installed drawings		
		Refrigeration system pressurisation as installed drawings		
	Fuel storage and pipe distribution schematics and as installed drawings.			
		Fuel storage schematics.		
		Fuel pipe distribution schematics		
		Fuel storage as installed drawings.		
		Fuel pipe distribution as installed drawings.		

	DX units, heat pumps and stand alone ACU's schematics and as installed drawings.		
	DX units' schematics		
	heat pumps schematics		
	stand alone ACU's schematics		
	DX units' as installed drawings		
	heat pumps as installed drawings		
	stand alone ACU's as installed drawings		
	Thermal hot water system schematics and as installed drawings.		
	Thermal hot water system schematics		
	Thermal hot water system as installed drawings.		
	Air conditioning units' (including heat pumps) schematics and as installed drawings.		
	Air conditioning units' (including heat pumps) schematics		
	Air conditioning units' (including heat pumps) as installed drawings.		
	Mechanical ventilation systems (ductwork, dampers, heater/cooler batteries, grilles, fans, terminal devices, filters and controls) schematics' and as installed drawings.		
	Mechanical ventilation systems ductwork schematics		
	Mechanical ventilation systems dampers schematics		
	Mechanical ventilation systems heater/cooler batteries schematics		
	Mechanical ventilation systems grilles schematics		
	Mechanical ventilation systems fans schematics		
	Mechanical ventilation systems terminal devices schematics		
	Mechanical ventilation systems filters schematics		
	Mechanical ventilation systems controls as installed drawings.		
	Mechanical ventilation systems ductwork as installed drawings.		
	Mechanical ventilation systems dampers as installed drawings.		
	Mechanical ventilation systems heater/cooler batteries as installed drawings.		
	Mechanical ventilation systems grilles as installed drawings.		
	Mechanical ventilation systems fans as installed drawings.		
	Mechanical ventilation systems terminal devices as installed drawings.		
	Mechanical ventilation systems filters as installed drawings.		
	Mechanical ventilation systems controls as installed drawings.		
	Water treatment and dosing system schematics and as installed drawings.		
	Water treatment and dosing system schematics		
	Water treatment and dosing system as installed drawings.		

	Lift systems schematics and as installed drawings		
		Lift systems schematics	
		Lift systems as installed drawings	
	SPARE.		

VOLUME E- BUILDING FABRIC MANUAL

SECTION ONE:	<p style="text-align: center;">EXTERNAL BUILDING ELEMENTS</p> <p>(To contain details of each building element, product description, COSHH details, Industry standards and approvals, technical details, fire rating standards and maintenance and projected life cycle details).</p>
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SECTION NUMBER	CONTENT DESCRIPTION	FILE FORMAT	
VOL-E-1_1.1	Foundations- Type, depth of footing, material.		
VOL-E-1_1.2	Walls- Bricks, blocks, timber framed, concrete, batten & tiled and profiled walls.		
VOL-E-1_1.3	Windows- Roof lights sash units, metal, uPVC, wooden and specialist glazing units.		
VOL-E-1_1.4	Doors- Entrance doors, appliance bay door fire exit wicket doors, security doors, glazed doors, roller shutters, and appliance bay shutters.		
VOL-E-1_1.5	Floors- Suspended grid, solid concrete/screed, wooden, tiled or marble. Cube test results.		
VOL-E-1_1.6	Walkways- Paving, block, tarmac, concrete, protected barriers.		
VOL-E-1_1.7	Stairs/ladders- Metal, concrete, wooden, Jacobs ladders.		
VOL-E-1_1.8	Roofs- Pitched roofs, flat roofs (inverted), exterior glazed roofs, lead/copper roofs.		
VOL-E-1_1.9	Yard- appliance yards, concrete, block, screed, tarmac.		
VOL-E-1_1.10	Gutters- all types; Drainage – surface and foul water.		
VOL-E-1_1.11	Roads- concrete, block, tarmac.		
VOL-E-1_1.12	Security- Road barriers, gates, security fencing, security rails. Other security devices.		
VOL-E-1_1.13	Drill Tower- Building towers, steel training towers, other drill towers.		
VOL-E-1_1.14	Surface finishes- paints, other surface finishes.		
VOL-E-1_1.15	Table of safe working floor loads. (Before and after construction.)		
VOL-E-1_1.16	Structural calculation sheets. (If applicable.)		
VOL-E-1_1.17	Sustainable timber certificates and copy of linked invoices		
VOL-E-1_1.18	SPARE.		

SECTION TWO:	<p align="center">INTERIOR BUILDING ELEMENTS</p> <p>(To contain details of each interior building element, product description, COSHH details, Industry standards and approvals, technical details, fire rating standards and maintenance and projected life cycle details).</p>		
VOL-E-2_2.1	Partitions- wooden, metal, block work, glazed and other types.		
VOL-E-2_2.2	Floors- substrate details, carpets, marble, ceramic tiles, raised floors and other types.		
VOL-E-2_2.3	Stairs- steel, wooden, concrete, glazed or other types.		
VOL-E-2_2.4	Ceilings- suspended all types, solid, acoustic, wooden, chilled ceilings, grid format and other types.		
VOL-E-2_2.5	Doors- fire exit doors, security doors, glazed doors, wooden doors, other types.		
VOL-E-2_2.6	Surface finishes- paints, other surface finishes and surface protection.		
VOL-E-2_2.7	Sustainable timber certificates and copy of linked invoices		
VOL-E-2_2.8	Window blinds		
VOL-E-2_2.9	SPARE.		

SECTION THREE:	AS INSTALLED DRAWINGS (The following is a list of minimal information required in the form of "As Built" drawings. All drawings shall be submitted by floor. For "File naming" , "Cad layer System" ,etc see Appendix 5 "Submitting Cad Drawings to LFB")		
	Architectural building details.		
		Flooring details	
		Partition details	
		Door details	
		Appliance bay door details	
		Window details	
		(non-structural) ceiling details	
		Stair details	
	Room Details (A) : Operational Room Details		
		Appliance Bays	
		Covered Wash Down	
		Slide Poles	
		Fire Gear (Uniform) Store	
		Operational Equipment Store	
		Operational Equipment Cleaning	
		Drying Room	
		Breathing Apparatus (BA) Room	
		Forecourt	
		Oil/Paraffin/Propane Store	
		Dry Cleaning Store	
		Specialist Equipment Store	
	Training and drill (B)		
		Drill Yard	
		Drill Yard Pumping Well	
		Drill Yard Foam Diverter Valve	
		Drill Tower and Training Roof	
		Fuel Storage/Pump	
	Control and Administration (C)		
		Station office	
		Stationery Store	
		Reception/waiting	
		Station Manager's Office	
		Watch Manager's room	
		Call out equipment	
	Amenity (D)		
		Fire fighters' Lockers and changing areas (male)	
		Fire fighters' Lockers and changing areas (female)	
		Bathroom (male)	
		Bathroom (female)	
		Bathroom (unisex)	

		Bathroom (unisex accessible)		
		Lecture/TV room/Rest area		
		Lecture Storage		
		Rest area for females		
		Gymnasium		
		Kitchen		
		Mess Area		
		Cleaner's Store		
		Consumables Store		
		Equalities/First Aid Room	AutoCAD 2007 & PDF	
		Quiet Study Room		
		Services (E)		
		Electrical Intake		
		Standby Generator		
		Boiler Room		
		Bins		
		Gas meter		
		Comms. room		
		Water meter		
		Community engagement facilities (F)		
		Meeting Room		
		Kitchenette		
		Accessible wc		
		WC (Unisex)		
		Circulation areas (G)		
		Circulation areas		
		Fixtures and fittings details (if presented separately from the room they furnish)		
		General Arrangements		
		Other		
		Spare		
		External building elevations; Sections		
		External building elevations		
		Elevations- sheet 1		
		Elevations- sheet 2		
		Elevations- sheet 3		
		Elevations- sheet 4		
		Elevations- sheet 5		
		Elevations- sheet 6		
		Elevations- sheet 7		
		Elevations- sheet 8		
		Elevations- sheet 9		
		Elevations- sheet 10		
		Appliance bay sections		
		Sections -other		
		Sections- sheet 1		

			Sections- sheet 2			
			Sections- sheet 3			
			Sections- sheet 4			
			Sections- sheet 5			
			Sections- sheet 6			
			Sections- sheet 7			
			Sections- sheet 8			
			Sections- sheet 9			
			Sections- sheet 10			
		Floor layouts.				
		Site layouts, o/s and topographical details.				
		Structural details.				
		Foundation details				
		Yard details				
		Road details				
		Drainage, foul and surface water, details				
		Floor details				
		Wall details				
		(Structural) Ceiling details				
		(Structural) Window details				
		Lintel, Beam details				
		Column details				
		Operational Room Details (A)				
		Appliance Bays				
		Covered Wash Down				
		Slide Poles				
		Fire Gear (Uniform) Store				
		Operational Equipment Store				
		Operational Equipment Cleaning				
		Drying Room				
		Breathing Apparatus (BA) Room				
		Forecourt				
		Oil/Paraffin/Propane Store				
		Dry Cleaning Store				
		Specialist Equipment Store				
		Training and drill (B)				
		Drill Yard				
		Drill Yard Pumping Well				
		Drill Yard Foam Diverter Valve				
		Drill Tower and Training Roof				
		Fuel Storage/Pump				
		Control and Administration (C)				
		Station office				
		Stationery Store				
		Reception/waiting				
		Station Manager's Office				
		Watch Manager's room				
		Call out equipment				

		Amenity (D)		
		Fire fighters' Lockers and changing areas (male)		
		Fire fighters' Lockers and changing areas (female)		
		Bathroom (male)		
		Bathroom (female)		
		Bathroom (unisex)		
		Bathroom (unisex accessible)		
		Lecture/TV room/Rest area		
		Lecture Storage		
		Rest area for females		
		Gymnasium		
		Kitchen		
		Mess Area		
		Cleaner's Store		
		Consumables Store		
		Equalities/First Aid Room		
		Quiet Study Room		
		Services (E)		
		Electrical Intake		
		Standby Generator		
		Boiler Room		
		Bins		
		Gas meter		
		Comms. room		
		Water meter		
		Community engagement facilities (F)		
		Meeting Room		
		Kitchenette		
		Accessible wc		
		WC (Unisex)		
		Circulation areas (G)		
		Circulation areas		
		Stair details		
		Roof details		
		Steelwork details (if not identified already)		
		Structural security measures (Barriers, fencing, gates etc)		
		General Arrangements		
		Other		
		Spare		
	SPARE.			

VOLUME F- FM DAY TO DAY PREMISE RECORDS (DYNAMIC FILE)

SECTION ONE:	BUILDING INFORMATION		
VOL-F-1_1.1	BUILDING CONDITION REPORTS		
VOL-F-1_1.2	PROFESSIONAL SERVICES REQUEST FORMS		
VOL-F-1_1.3	ESTATE BUILDING ISSUES (Residential Property)		
VOL-F-1_1.4	DRAIN CLEANING AND CCTV CHECKS		
VOL-F-1_1.5	FOUL WATER INSPECTION AND CCTV CHECKS		
VOL-F-1_1.6	GUTTER CLEANING RECORDS		
VOL-F-1_1.7	HAZARDOUS WASTE CERTIFICATES AND CONSIGNMENT NOTES AND WASTE TRANSFER NOTES.		
VOL-F-1_1.8	SPARE		
SECTION TWO	FIRE PREVENTION INFORMATION		
VOL-F-2_2.1	PROFESSIONAL SERVICES REQUEST FORMS		
VOL-F-2_2.2	MONTHLY EMERGENCY LIGHTING TEST CERTIFICATES		
VOL-F-2_2.3	FIRE ALARM INSPECTION AND TESTING		
VOL-F-2_2.4	EXTINGUISHER INSPECTION CERTIFICATION		
VOL-F-2_2.5	HOSE REEL TESTING		
VOL-F-2_2.6	SPRINKLER SYSTEM TESTING		
VOL-F-2_2.7	GAS SUPPRESSION SYSTEMS		
VOL-F-2_2.8	DEEP LIFT PITS		
VOL-F-2_2.9	SPARE		
SECTION THREE	ELECTRICAL INFORMATION		
VOL-F-3_3.1	PROFESSIONAL SERVICES REQUEST FORMS		
VOL-F-3_3.2	LIGHTNING CONDUCTOR REPORT AND TEST CERTIFICATES		
VOL-F-3_3.3	PORTABLE APPLIANCE TESTING CERTIFICATES		
VOL-F-3_3.4	MICROWAVE EMISSIONS SAFETY CERTIFICATES		
VOL-F-3_3.5	5 YEAR ELECTRICAL FIXED INSTALLATION CERTIFICATES		
VOL-F-3_3.6	MINOR ELECTRICAL WORKS CERTIFICATE		
VOL-F-3_3.7	GENERATOR AND UPS TEST CERTIFICATES AND REPORTS		
VOL-F-3_3.8	CCTV AND SECURITY SYSTEM INSPECTION REPORTS		
VOL-F-3_3.9	SOLAR PANEL INSPECTION REPORTS		
VOL-F-3_3.10	DOOR SAFETY REPORTS (APPLIANCE AND SECURITY DOORS)		
VOL-F-3_3.11	BA SENSOR MAINTENANCE		
VOL-F-3_3.12	SPARE		

SECTION FOUR	MECHANICAL INFORMATION		
VOL-F-4_4.1	PROFESSIONAL SERVICES REQUEST FORMS		
VOL-F-4_4.2	GAS SOUNDNESS CERTIFICATES (MAIN INCOMING SERVICE)		
VOL-F-4_4.3	HEATING & HWS, PUMPS, CONTROLLERS (MAINTENANCE CERTIFICATES)		
VOL-F-4_4.4	HTG & COOLING SYSTEMS (WATER DOSAGE TREATMENT CERTIFICATES)		
VOL-F-4_4.5	DIRECT GAS FIRES HEATING UNITS SERVICE CERTIFICATES (APPLIANCE BAYS)		
VOL-F-4_4.6	COMBINED HEAT AND POWERED GAS SAFETY CERTIFICATES		
VOL-F-4_4.7	L8 WATER SURVEY ADUIT REPORTS AND CHLORINATION CERTIFICATION (MONTHLY)		
VOL-F-4_4.8	PRESSURISATION UNITS REPORTS AND INSURANCE CERTIFICATION		
VOL-F-4_4.9	WIND TURBINE MAINTENANCE/REPAIR CERTIFICATES		
VOL-F-4_4.10	SOLAR THERMAL POWER MAINTENANCE/REPAIR CERTIFICATES (Hot water)		
VOL-F-4_4.11	SUPPLY/EXTRACT AND AHU INSPECTION REPORTS		
VOL-F-4_4.12	AIR CONDITIONING UNITS, DEHUMIDIFIERS INSPECTION REPORT		
VOL-F-4_4.13	KITCHEN EXTRACT FANS/HOODS, FILTERS MAINTENANCE REPORTS		
VOL-F-4_4.14	CATERING APPLIANCES (GAS) MAINTENANCE AND INSPECTION REPORTS		
VOL-F-4_4.15	LIFT AND LIFTING GEAR SAFETY REPORTS AND INSURANCE CERTIFICATION		
VOL-F-4_4.16	LIFTING GEAR TESTING AND INSPECTION (EYEBOLTS)		
VOL-F-4_4.17	DERV AND PETROL PUMPS MAINTENANCE AND INSPECTION REPORTS		
VOL-F-4_4.18	SPARE		

VOLUME G- PREMISE LOG BOOK (SITE BASED)

(INFORMATION FOR THIS BOOK IS CARRIED FORWARD FROM VOLUMES A TO F OF THE HEALTH AND SAFETY FILES)

SHADED AREAS INDICATE NO UPDATE REQUIRED

SECTION ONE:	RECORD OF CONTRACTOR ATTENDANCE		
VOL-G-1-1.1	RECORD OF CONTRACTOR ATTENDANCE – STANDARD FORM		
SECTION TWO	CONTRACTOR SAFETY BRIEFING NOTES		
VOL-G-2-2.1	CONTRACTOR BRIEFING NOTES - STANDARD BRIEFING DOCUMENT		
SECTION THREE	ASBESTOS		
VOL-G-3-3.1	ASBESTOS REGISTER		
VOL-G-3-3.2	ASBESTOS FLOWCHART 1		
VOL-G-3-3.3	ENCAPSULATED COLOUR CODED FLOOR PLANS SHOWING LOCATION OF ASBESTOS.		
SECTION FOUR	HAZARD CHECKLIST		Detail any changes
VOL-G-4-4.0	HAZARD CHECKLIST, IN ITS ENTIRETY.		
VOL-G-4-4.1	ASBESTOS ✓ OR X AND RISK H/M/L		
VOL-G-4-4.2	FRAGILE ROOF AREAS ✓ OR X AND RISK H/M/L		
VOL-G-4-4.3	FALLS FROM HEIGHTS ✓ OR X AND RISK H/M/L		
VOL-G-4-4.4	CALL LIGHTING ✓ OR X AND RISK H/M/L		
VOL-G-4-4.5	TELECOMMUNICATIONS ANTENNAE ✓ OR X AND RISK H/M/L		
VOL-G-4-4.6	SLIDING POLES ✓ OR X		
VOL-G-4-4.7	GLAZING RISKS ✓ OR X AND RISK H/M/L		
VOL-G-4-4.8	TELECOMMUNICATIONS ANTENNAE ENCAPSULATED EXCLUSION ZONE MAP		
SECTION FIVE	ISOLATION POINT DETAILS FOR GAS, WATER & ELECTRICITY		
VOL-F-5-5.1	DETAILS OF INCOMING ISOLATION POINTS FOR GAS WATER AND ELECTRICITY		
SECTION SIX	WORKPLACE H&S INSPECTIONS		
VOL-G-6-6.1	WORKPLACE HEALTH AND SAFETY INSPECTIONS		

SECTION SEVEN	ENVIRONMENTAL INFORMATION		
VOL-G-7-7.1	AUTHORITY ENVIRONMENTAL STATEMENT		
VOL-G-7-7.2	SITE COPIES OF WASTE TRANSFER AND CONSIGNMENT NOTES		
SECTION EIGHT	CONTRACTORS RISK ASSESSMENTS AND SAFETY METHOD STATEMENTS		
VOL-G-7-8.1	CONTRACTORS RISK ASSESSMENTS AND SAFETY METHOD STATEMENTS.		
SECTION NINE	PREMISES RELATED INSTRUCTIONS		
VOL-G-7-9.1	PREMISES RELATED INSTRUCTIONS		
SECTION TEN	FIRE SAFETY INFORMATION		
VOL-G-7-10.1	RECORD OF FIRE ALARM WEEKLY TEST – FORM 1		
VOL-G-7-10.2	RECORD OF FIRE EVACUATION DRILLS – FORM 2		
VOL-G-7-10.3	RECORD OF FIRE SAFETY STAFF INSTRUCTION/TRAINING – FORM 3		
VOL-G-7-10.4	HOT WORK PERMIT – FORM 4		
SECTION ELEVEN	FURTHER INFORMATION		
VOL-G-7-11.1	PROPERTY GUIDE		
VOL-G-7-11.2	SAFETY RULES FOR CONTRACTORS WORKING AT LFB PREMISES.		

PREMISES ABBREVIATIONS

SCHEDULE 02 APPENDIX 01 CAD FILE NAME FIELDS 1 & 2

LFB- London Fire Brigade Property Review - Address Information

CAD FILE NAME FIELDS 1 & 2

FIELD 1	Site	FIELD 2
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FIRE STATIONS

FS001	Acton	ACT
FS002	Addington	ADD
FS003	Barking (WS)	BRK
FS004	Barnet	BRN
FS005	Battersea	BTT
FS006	Beckenham	BCK
FS007	Belsize	BLS
FS008	Bethnal Green	BTH
FS009	Bexley	BXL
FS010	Biggin Hill	BGH
FS011	Bow	BOW
FS012	Brixton	BRX
FS013	Bromley	BRM
FS014	Chelsea	CHL
FS015	Chingford	CHN
FS016	Chiswick	CHS
FS017	Clapham (HQ)	CLP
FS018	Clerkenwell	CLW
FS019	Croydon (HQ/TC)	CRY
FS020	Dagenham	DGH
FS021	Deptford	DPT
FS022	Dockhead	DCK
FS023	Dowgate	DWG
FS024	Downham	DWH

FS025	Ealing	EAL
FS026	East Greenwich	EGR
FS027	East Ham	EHM
FS028	Edmonton	EDM
FS029	Eltham	ELT
FS030	Enfield	ENF
FS031	Erith (TC)	ERT
FS032	Euston	EUS
FS033	Feltham	FLT
FS034	Finchley	FCH
FS035	Forest Hill	FHL
FS036	Fulham	FLH
FS037	Greenwich	GRW
FS038	Hainault	HNT
FS039	Hammersmith	HMH
FS040	Harrow (TC)	HRR
FS041	Hayes	HAY
FS042	Heathrow	HTH
FS043	Hendon	HDN
FS044	Heston	HSN
FS045	Hillingdon	HLN
FS046	Holloway	HLY
FS047	Homerton	HMN
FS048	Hornchurch	HCH
FS049	Hornsey	HNY
FS050	Ilford	ILF
FS051	Islington	ISL
FS052	Kensington	KNS
FS053	Kentish Town	KHT
FS054	Kingsland	KGD
FS055	Kingston	KGN
FS056	Knightsbridge	KBR
FS057	Lambeth (HQ/WS)	BHQ
FS058	Lambeth River Station	LRS
FS059	Lee Green	LGR
FS060	Lewisham (HQ)	LWM
FS061	Leyton	LYN
FS062	Leytonstone	LTE
FS063	Mill Hill	MLH
FS064	Millwall	MLW
FS065	Mitcham	MTM
FS066	New Cross	NCS
FS067	New Malden (TC)	NMN
FS068	Norbury	NBY

FS069	North Kensington	NKN
FS070	Northolt	NHT
FS071	Old Kent Road	OKR
FS072	Orpington	ORN
FS073	Paddington (HQ)	PDN
FS074	Park Royal	PKR
FS075	Peckham	PKM
FS076	Plaistow (TC)	PTW
FS077	Plumstead	PLD
FS078	Poplar	PLR
FS079	Purley	PLY
FS080	Richmond	RMD
FS081	Romford	RMF
FS082	Ruislip	RLP
FS083	Shadwell (TC)	SDW
FS084	Shoreditch (HQ)	SHH
FS085	Sidcup	SCP
FS086	Silvertown	SLN
FS087	Soho	SOH
FS088	Southall	STL
FS089	Southgate	STG
FS090	Southwark (TC)	SWK
FS091	Stanmore	SNM
FS092	Stoke Newington	SKN
FS093	Stratford (HQ)	STF
FS094	Surbiton	SBN
FS095	Sutton	STT
FS096	Tooting	TTG
FS097	Tottenham (TC)	THM
FS098	Twickenham	TWM
FS099	Wallington	WLL
FS100	Walthamstow	WMW
FS101	Wandsworth	WNH
FS102	Wembley (HQ)	WBY
FS103	Wennington	WNN
FS104	West Hampstead	WHD
FS105	West Norwood	WND
FS106	Westminster	WSR
FS107	Whitechapel	WCL
FS108	Willesden	WSN
FS109	Wimbledon	WMB
FS110	Woodford	WDF
FS111	Woodside	WDS
FS112	Woolwich	WCH

FS113

Harold Hill

LEASEHOLD OFFICES

HQ009	City Forum - Unit 5	CF5
HQ010	City Forum - Unit 6	CF6
HQ002	2 Greenwich View	2GV
HQ001	Union Street	NHQ
HQ008	Skyline House (part)	SKY
HQ016	Alperton House (part)	ALP

**VEHICLE WORKSHOPS
(STAND ALONE)**

HQ011	Ruislip	RUI
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**LEASEHOLD RADIO
FACILITIES - Radio Mast (RM)
Paging Site (PS)**

RF001	Davidson Tower (PS)	DAV
RF002	Fenton House (PS)	FEN
RF003	Gravelly Hill Mast (RM)	GRA
RF004	Harrow on the Hill (RM)	HAR
RF006	Lunar House (PS)	LUN
RF007	Millbank Tower (PS)	MIL
RF010	Tolworth Tower (PS)	TOL

**FREEHOLD RADIO
FACILITIES - Radio Mast (RM)**

RF005	Hillingdon (RM)	HIL
RF008	Shooters Hill (RM)	SHO
RF009	St Columba (RM)	COL

OTHER PREMISES

HQ19	Wapping Disaster Recovery Room	WPP
RP014	7 Eltham Road, Lee Green	7EL

SURPLUS PROPERTIES

HQ018 **Old Bounds Green Fire Station** OBG

TRAINING CENTRE

HQ004 **Grotto Place** GRP

HQ003 **Southwark Training Centre** STC

HQ006 **Royal Docks Site (LFEPA training facility)** ROY

COMMAND CENTRES

HQ017 **NW Emergency Control Centre** ECC

SKID TRAINING SITES

HQ005 **Wethersfield Skid Training Site** WST

OCCUPIED RESIDENTIAL PROPERTY

RP001 **Flat - Acton Fire St**

RP002 **Flat - Belsize Fire St**

RP003 **Clapham FS
3 Braidwood Court**

RP004 **4 Braidwood Court**

RP005 **Knightsbridge FS
Court House:
Flat 1 Court House**

RP006 **Flat 2 Court House**

RP007 **Flat 3 Court House**

RP008 **Flat 4 Court House**

RP009 **Flat 5 Court House**

RP010 **Flat 6 Court House**

RP011 **Flat 7 Court House**

Westminster Fire St :

RP012

Flat 5 Westminster FS

RP012

Flat 11 Westminster FS

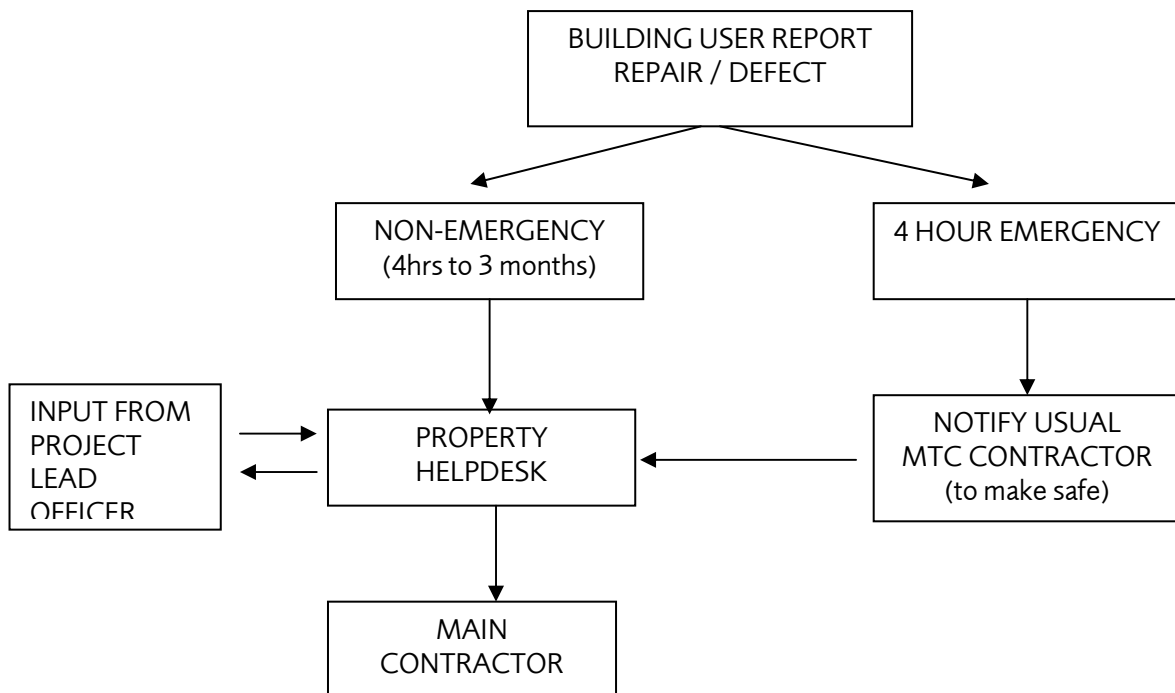
- 1 It is standard practice for new build properties to have a defects liability period (running from the date of practical completion). The period is individually specified for each contract, but is normally up to 12 months. During this time the contractor is liable to make good defects that become apparent in the construction of the property / project. This does not include damage attributable to the occupier or wear and tear.
- 2 The contractor is required to attend to defects within certain time scales and these depend on what has been included within the original contract documents that would have incorporated the requirements of the employer's brief.
- 3 For some properties (usually those with substantial quantities of specialist plant) it may be appropriate to include within the contract documents for a bespoke responsive maintenance and servicing agreement, obliging either the main contractor or specialist sub-contractors to respond within specified target times. The need for such an arrangement must be given due consideration during the design stage, so that where such an arrangement is decided to be appropriate, the required relevant clauses can be incorporated into the tender to enable the contractor to provide a separate price that can be assessed alongside the main tender.
- 4 For the majority of smaller contracts, it may be the case that such an arrangement would not be cost effective or provide the required level of service. It may be preferable to use the LFB's term contractors to carry out any servicing and emergency breakdown attendance that may be required, leaving the development contractor responsible for attending to defects that can be attended to within reasonable time scales. Consideration must be given to establishing a suitable method to contra-charge the development contractor where appropriate whilst maintaining the effectiveness of warranties.

DEFECTS REPORTING PROCEDURE

- 5 Where a bespoke maintenance and servicing agreement is included in the contract, separate guidance will be issued at the time of handover by the Project Lead Officer, detailing the arrangements in place for reporting defects.
- 6 Where there is no bespoke maintenance and servicing agreement within the contract the following procedure for reporting defects is to apply:
 - Under the defects liability period defects that affect the enjoyment of the property (plumbing, roof leaks etc.) are required to be dealt with within a reasonable timescale, there is normally no obligation to attend to the more minor defects until immediately before the end of the defects liability period. The introduction of such an obligation would give rise to a corresponding increase in price of a project.
 - The contractor will provide attendance in a reasonable timescale for those items of specialist equipment or materials which become defective in order to maintain the property and the associated specialist warranties.

- Building users report repairs / defects to the Property Help Desk (by email to Property Helpdesk or telephone #89150).
- The standard of information the Helpdesk has been provided with will assist them in determining whether the main contractor is responsible for resolving the defect reported.
- Where the Helpdesk has been provided with insufficient information to determine responsibility they will revert to the Project Lead Officer for guidance. Where the repair is deemed not to be the responsibility of the new build contractor, the Property Help Desk will instruct one of the Authority's Measured Term Contractors to attend.

FLOWCHART OF DEFECTS REPORTING PROCEDURE



Appendix 5 - Submitting Cad Drawings to LFB

1 INTRODUCTION

This Standard describes the requirements of the London Fire Brigade for the submission any Computer Aided Design –CAD drawings related to building works.

2 SCOPE

Due to the specific nature of some building works some projects can not fully comply with this Cad Standards, in this case, alternative solutions should be agreed defining clearly the nature of the drawings to be produced and the level of information to be contained.

If necessary the Cad Manager would attend pre-starting meetings in order to establish Cad protocols and agree procedures.

This Cad standard is an adaptation of both the British Standards 1192 part 5 and the CPIC - Construction Project Information Committee guidance. Any Cad matter not covered on this standard shall refer to the above documents .

3 CAD STANDARDS

3.1 Cad Template:

A Cad Template File -or “Current” Cad drawing, will be provided to Consultants / Contractors at contract commencing stage. This Cad template will contain a key to plan symbols, a list of abbreviations and the most frequent Cad layers used in a typical LFB Cad drawing. Please see “Handover-Cad Template” file - attached to this handover document.

3.2 Cad Issue Sheet:

An electronic “Cad issue sheet “ template has been included onto the handover package so that consultants/ contractors include this Cad sheet each time they submit Cad drawings to the authority. Please see “Handover –Cad Issue Sheet” file- attached to this Handover document

3.3 Cad Format:

“DWG” or compatible “DXF”. Also, every “DWG” file shall be accompanied by a “PDF” version. The “PDF” version of the drawing will be the legal document whereas the “DWG” version will be re-utilised on future projects.

3.4 Cad Version:

AutoCad LT 2002 or newer.

Earlier versions of AutoCad may be used - for smaller projects, providing the consultant / contractor seeks advice from the Authority prior drawing production .

3.5 Drawing Scale:

The drawings to be drawn in Model Space and on scale 1:1 .

On Paper space the issued drawing should indicate clearly the scale and the paper size in use i.e. 100@A1. The recommended scales in paper space are:

Scale	Drawings
1:1250	Location Plans i.e. OS Maps, etc
1:200, 1:500	Detailed location plans and site survey drawings
1:100, 1:50	Floor Plans and Elevations
1:50, 1:20, 1:10, 1:5	Details and sections

3.6 Drawing Units: Millimetres.

Note: One cad unit equals one millimetre on real life.

3.7 Dimensioning

As the drawings are to scale, dimensions should be shown only on the drawings where it is specifically required to do so by the conditions of engagement, or where they are necessary for the interpretation of the design intent. Plant and equipment location dimensions should be shown only if specifically requested.

If dimensions are required, it is important that they be shown only once, so that changes on one drawing do not lead to conflicts if another drawing is not updated.

For example:

If a layout drawing shows pipe sizes and the same elements are shown in a schematic drawing, it is possible that only one of these drawings may be edited, causing a conflict between the two sets of information. In this case the sizes should be shown on the layout drawing and not on the schematic.

3.8 Cad Symbols

The most frequent Cad symbols and abbreviations are provided on the “Key To Plan Symbols” on the “Handover-Cad Template” file.

3.9 Colours

In general all colours used in the drawings shall be defined “Bylayer”.

Note: The use of “Yellow” colour is strictly prohibitive on drawings submitted to LFB. This colour makes difficult the process of printing and converting to PDF format.

If necessary, a “21” colour shall be used in lieu.

3.10 Lineweight

All Lineweights shall be defined as “Default”. However different settings are allowed when the use is deemed necessary.

3.11 Title Block:

-The Title block shall be placed in Paper Space.

-The viewports shall be placed in the layer “Viewports” (Colour Cyan, and a “Not Printable” layer).The Viewport shall be locked.

-Conventional symbols and abbreviations to be displayed on the title block. However, when space on the title block is reduce an extra Cad drawing sheet can be included to display the key to plan symbols and the abbreviations used.

Note:

Only one floor shall be included in each Cad File.

3.12 Layer Management System (LMS):

A list of most used Cad layers has been included on “Other information” at the end of this document.

3.12.1 Layer Life Cycle

-A Cad Template File or “Current” Cad drawing will be provided to Consultants / Contractors at contract commencement stage. LFB’s most frequent Cad Layers will be held on these initial drawings.

-Any new layer - related to project’s new elements of the building, shall be named using a “00” (double zero) prefix followed by the layer’s name. This will facilitate layer isolation when integrating the project’s new elements to the existing master drawings.

NOTE: Consultants/contractors are not allow to used the existing LFB cad layers as project related layers will need to be isolated in the “00” (double zero) layer group. Falling to do so may result in the drawings to be rejected and sent back for amendments.

3.13 Photographs:

Projects involving submission of photographs shall include a “photo location” Cad layer containing the arrows and their pertinent photograph’s ref number. The arrows shall be located and orientated in the same fashion as the photographs were taken.

The photo locations shall be marked on plans by using the Cad Block “Photo Arrow” - *please see “handover-Cad Template” file.*

The photos will be named using the exact same photo reference number use in the location arrows.

All photographs shall display the date the photographs were taken.

All photographs to be bundled by building level i.e. all photographs referring to Ground Floor shall be place on a “Ground Floor” folder.

Photos Reference Number System:

Syntax

Level Name	2 digit unique identifier
------------	---------------------------

Description	Photo Numbers
Photo 01 taken at Ground Floor Level	0G01
Photo 02 taken at Ground Floor Level	0G02
NOTE: all photos taken on the yards to start with “0Y” i.e. Photo 01 taken in the Yards	0Y01

3.14 Xrefs

Any drawing used as “Xref” shall be “bound” to the calling drawing before the drawings be submitting to LFB.

3.15 Cad File Naming System:

The Cad File Naming System defines a systematic methodology to name the cad files in order to maintain consistency throughout the Cad data set.

Syntax

3 Letters Site Name	2 digit (letter) level name	Brief description of drawing contents
---------------------	-----------------------------	---------------------------------------

i.e.

ACT_0G_Floor Layout

ACT_0G_Alarm System Layout.

3.16 Naming Conventions

3.16.1 Site Coding System

Site refers to the location of the LFB’s property.

A site may include fire station, residential premises, workshop, etc.

A list of premises abbreviations has been included on Appendix 2 of this Handover Document

3.16.2 Building Block Coding System

Level Name	Level Code
Fire Station	FS
Office	OF
Radio Facilities	RF
Residential	RP
Training Facilities	TR

3.16.3 Building Level Coding System

Level refers to a premises floor, i.e ground floor, first floor, etc. The ground floor is the level where the main entrance is located.

Level Name	Level Code
------------	------------

Sub-Basement	SB
Basement	0B (zero B)
Lower Ground Floor	LG
Ground Floor	0G (Zero G)
Upper Ground Floor	UG
First Floor	01 (Zero 1)
Roof	0R (Zero R)

3.16.4 Room Coding System

3.16.4.1 Syntax

Two digits Level Number	Dash	Unique Room Identifier Number (URIN)
-------------------------	------	---------------------------------------

e.g.

Rooms	Numbers
Basement Rooms	0B-01 to 0B-99
Ground Floor Rooms	0G-01 to 0G-99
First Floor Rooms	01-01 to 01-99
.....and so on	

3.16.5 Door Coding System

3.16.5.1 Syntax

Letters "DR" (Capitals)	2 digit unique identifier
-------------------------	---------------------------

e.g.

Doors	Door Codes
Door no 1	DR01
Door no 2	DR02
Door no 3	DR03
.....and so on	

3.16.5.2 Typical door Schedule

As doors are frequently located between two adjoining rooms the location reference of a door shall quote the two adjoining rooms i.e. 0G-027-028 (where rooms 027 and 028 are two adjoining rooms sharing the door)

E.g. To schedule the three first doors on the ground floor-located on rooms 027 (adjoined to room 025), room 030(adjoined to room 032), and room 033(adjoined to room 031):

Door Code	Location (Level-Adj. Rooms)	Width	Height
DR01	0G-027-025	1.39	2.1

DR02	0G-030-032	0.77	1.97
DR03	0G-033-031	0.83	2.00
...andso on			

Notes:

External doors location shall quote one room number only.

Door Schedule to be produce as MS Excel spread sheet and inserted on Model space using OLE technology .

Locate the Door schedule near to the relevant floor plan and in the Layer as per LMS on this document

3.16.6 Windows Coding System

3.16.6.1 Syntax

Letters "WD" (Capitals)	2 digit Unique Identifier
-------------------------	---------------------------

e.g.

Windows	Window Code
Window no 1	WD01
Window no 2	WD02
Window no 3	WD03
.....and so on	

3.16.6.2 Typical window Schedule

e.g. As per Door scheduling system the windows locations will reference the two adjoining rooms i.e. to schedule the three first windows on the ground floor- located on rooms 027, 030 and 033:

Window Code	Location (Level-Adj. Rooms)	Width	Height
WD01	0G-027-025	0.37	0.39
WD02	0G-030-032	1.05	0.39
WD03	0G-033-031	4.29	2.93
...and so on			

Notes:

External windows location shall quote one room number only.

Window Schedule to be produce as MS Excel spread sheet and inserted on Model space using OLE technology .

Locate the Door schedule near to the relevant floor plan and in the Layer as per LMS on this document

3.16.7 Other Elements Codes:

Syntax

2 Letters Code (Capitals)	2 digit unique identifier
---------------------------	---------------------------

Element	Code
Corridors	CD
Lift Shafts	LS
Stairs	ST
Risers	RS

e.g.

Stairs	Stairs Numbers
Stairs no 1	ST01
Stairs no 2	ST02
Stairs no 3	ST03
.....and so on	

3.17

3.17.1

4 CAD PROTOCOL

4.1 Project Pre-starting Cad meeting

When necessary, LFB's Cad manager will attend project 's pre-starting meeting in order to assure the following protocols are understood and clarified:

- **The Drawing Plan:** When necessary, the pre-starting meeting should yield a simple and concise document where the number of drawings, the targets dates for the presentation of the Cad Data, formats, who is producing the drawings, i.e. sub-contractors, etc can be agreed and set up. This document shall be called “The drawings Plan”. The consultant shall provide an estimate of the number of drawings, their content, when cad drawings will be submitted, type of drawings i.e preliminaries, final “As built”, etc. The production drawing plan may include starting dates and duration of the production of drawings, however this will be to the discretion of the consultant. Inevitably, there will be some difficulties in determining all the information before the design is complete and before final detailed architects' drawings are received. However, an informed judgement will be adequate until more accurate information becomes available.
- **Drawing Presentation:** confirming that the consultant possesses the means and resources to comply with this standards.
- **Data Exchange:** identifying, validating and agreeing how CAD data is to be exchanged in order to improve the quality of information and maintain efficiency throughout the project. Also, Red Lining / revision procedures shall be agreed by the consultant and the LFB’s project manager
- **Drawing Numbering and File Naming:** due to the complexity of some projects the drawing numbering and file naming system may be adapted to fulfil the requirements of the project. Whichever the case the drawing numbering and the file naming system must be agreed with LFB’s representatives i.e. Project manager, cad manager, etc.

4.2 Types of Drawings

4.2.1 Co-ordination Drawing

In some cases co-ordination drawings may be produced to illustrate how particular design objectives are to be achieved.

Co-ordination drawings should show the inter-relationship between two or more engineering services and how they integrate with the structure and architectural features of the building. Such drawings should be prepared to a scale of 1:5, 1:10, 1:20, 1:50 and 1:100 unless otherwise agreed. They should be in sufficient detail to demonstrate that all the services will be properly separated from one another and can be satisfactorily installed and maintained.

The main features of a co-ordination drawing should be as follows:

- Plan layouts should be to a scale of at least 1:50 and be accompanied by cross sections to a scale of at least 1:20 for all congested areas.
- The drawing should be spatially co-ordinated ie there should be no physical clashes between the system components when installed at the scaled-off positions shown on the drawing. In areas where tolerances are minimal, dimensions should be provided.
- The spaces between pipe and duct runs shown on the drawing should make allowance for the service at its widest point. Insulation, standard fitting dimensions and joint widths should therefore have been allowed for on the drawing.
- The drawing should make allowance for those plant items specified by the designer and identified in the design specification.
- The drawing should make allowance for installation working space and space to facilitate commissioning and maintenance.
- The drawing should indicate positions of main fixing points and supports where they have significance to the structural design.
- The services should be arranged in such a way that it is possible to demonstrate a feasible sequence of installation.
- The drawing should be supported by 'individual services drawings' where these are desirable for clarity.
- Plant room layouts should be to a scale of at least 1:20 and be accompanied by cross sections and elevations to a scale of at least 1:50.

4.2.2 General Arrangement Layouts (plans, sections and elevation)

The general arrangement layout drawings show the main setting out dimensions of the floors and the location of all major features. Element references should be noted and clear directions given to where more detailed information can be found.

4.2.3 Details, Sections and Elevation Drawings

4.2.3.1 Structure

Detail drawings should provide full dimensional information of enlarged areas of the general arrangement (GA) plans, elevations and/or elements of the structure.

Each detail should be fully described, if necessary with a plan, section and elevation, and given a unique reference identical to that appearing on the GA drawings. Except on very small projects it is recommended that details are produced on separate drawing sheets and are not included with the GA drawings. This principle

applies also to sections, thus any element that repeats throughout the project should need to be defined once only.

Elevation drawings are similar in purpose to GA plans. They will usually be complete in themselves in that they are drawn to a scale large enough to show clearly and neatly all details of holes, chases, etc, as well as relationships with grids and floor levels.

4.2.3.2 Building Services

Detail, section and elevation drawings should be drawn to indicate only the arrangements of services and to ensure that the arrangements are feasible. Generally the drawings should not be dimensioned. An exception is the inclusion of critical dimensions to illustrate the detailed requirement for a particular aspect of the design. The dimensions of elements which appear in the same form but in varying sizes should be given in tabular form and not shown directly on the details.

4.2.4 Installation Drawing

The installation drawings are normally produced by the subcontractors. They are based on the tender drawings and possibly some co-ordination information, and show details of the subcontractors' proposals for the execution of the works. The drawings should be prepared in sufficient detail to enable the works to be installed.

A drawing based on the detailed design drawing or co-ordination drawing with the primary purpose of defining that information needed by the tradesmen on site to install the works.

NB Where co-ordination drawings have not been prepared in advance, responsibility for spatial co-ordination should be allocated to the "lead" installing contractor who should be named in the tender documents. All installation requirements should then be produced taking into account the needs of co-ordination.

The main features of installation drawings should be as follows:

- Plan layouts should be to a scale of at least 1:50 and be accompanied by cross sections to a scale of at least 1:20 for all congested areas.
- The drawing should be spatially co-ordinated, ie there should be no physical clashes between the system components when installed at the scaled-off positions shown on the drawing.
- Allowances should be made for inclusion of all supports and fixings necessary to install the works.
- The spaces between pipe and duct runs shown on the drawing should make allowance for the service at its widest point. Insulation, standard fitting dimensions and joint widths should therefore have been allowed for on the drawing.
- The drawing should make allowances for installation details provided from shop drawings.
- The drawing should make allowances for installation working space, space to facilitate commissioning and space to allow on-going operation and maintenance in accordance with the relevant health and safety requirements.
- Allowances should be made for plant and equipment including those which are chosen as alternatives to the

designer's specified option.

-Dimensions should be provided where the positioning of the services is considered to be important enough not to leave to the tradesmen on site.

-Plant room layouts should be to a scale of at least 1:20 and be accompanied by cross sections and elevations to a scale of at least 1:20.

Installation Wiring Diagram

Drawing showing the interconnection of electric components, panels etc in accordance with the design intent indicated on the schematic drawings and incorporating the details provided on manufacturers' certified drawings.

4.2.5 Record Drawing

Record drawings are usually prepared by services sub-contractors and provide a record of the works as installed.

Drawing showing the building and services installations as installed at the date of practical completion. The main features of the record drawings should be as follows:

-The drawings should provide a record of the locations of all the systems and components installed including pumps, fans, valves, strainers, terminals, electrical switchgear, distribution and components.

-The drawings should be to a scale not less than that of the installation drawings.

-The drawings should have marked on them positions of access points for operating and maintenance purposes.

-The drawings should not be dimensioned unless the inclusion of a dimension is considered necessary for location.

4.2.6 Sketch Drawings

Line diagrams and layouts indicating basic proposals, location of main items of plant, routes of main pipes, air ducts and cable runs in such detail as to illustrate the incorporation of the engineering services within the project as a whole.

4.2.7 Schematic Drawings

Schematic drawings are 2-dimensional drawings that show in 'flat' form the components, connections and workings of a building service system. The drawings are prepared in single line form without dimensions and there should be no 'background' such as the architect's layout. With Public Health design, schematics often take the form of isometric models which indicate the form of the particular service. It is important that such projections are developed or exploded where necessary so that the information can be read clearly.

A line diagram describing the interconnection of components in a complex system. The main features of a schematic drawing should be as follows:

-The drawing may be a two dimensional layout with divisions to show the distribution of the system between building levels. It may also be an isometric style layout

indicating the distribution of systems across individual floor levels. The drawing would not necessarily be constructed to scale.

-The drawing should include all functional components which make up the system ie plant items, pumps, fans, valves, strainers, terminals, electrical switchgear, distribution and components.

-The drawing should be labelled with appropriate pipe, duct and cable sizes where these are not shown elsewhere .

-The drawing should indicate components which have a sensing and control function and should indicate the links between them eg building management systems, fire alarms and HV controls.

-The major components indicated on the schematic drawing should be identified so that their whereabouts in specifications and on other drawings can be easily determined.

4.2.8 Detailed Design Drawing

A drawing showing the intended locations of plant items and service routes in such detail as to indicate the design intent. The main features of detailed design drawings should be as follows:

-Plan layouts should be to a scale of at least 1:100. Plant areas should be to a scale of at least 1:50, and should be accompanied by cross sections.

-The drawing will not indicate the precise position of services, but it should nevertheless be feasible to install the services within the general routes indicated. It should be possible to produce co- ordination drawings or installation drawings without major re-routing of the services.

-Pipework should be represented by single line layouts. Ductwork should be represented by either double line or single line layouts as required to ensure that the routes indicated are feasible.

-The drawing should indicate the space available for major service routing in both horizontal and vertical planes.

4.2.9 Assembly Drawings

It may be necessary on some projects to produce a set of assembly drawings to illustrate how structural elements are fitted together, for example, the assembly of prefabricated elements. The details should be produced to a large scale for clarity and may be augmented by pictorial views and notes on assembly procedures.

4.2.10 Shop Drawing

Drawing prepared by a fabricator or supplier for a particular project, and which is unique to that project. Examples include suppliers' drawings for ductwork, pre-fabricated pipework, sprinkler systems, control and switchgear panels and associated internal wiring.

Shop drawings are normally produced by sub-contractors to explain how the components of the design are to be fabricated. Examples would be steelwork fabrication drawings, mechanical ductwork drawings and precast concrete elements.

4.2.11 Manufacturer's Drawing

Drawing provided by a manufacturer or supplier to indicate a typical representation of the product, components or plant items to be supplied for a particular project.

Manufacturer's Certified Drawing

Drawing provided by a manufacturer or supplier to indicate details of the product, components or plant items and which the manufacturer or supplier guarantees the supplied equipment will comply with.

4.2.12 Builders' Work Drawing

Drawing to show requirements for building works necessary to facilitate the installation of the engineering services (other than where it is appropriate to mark out on site).

In some occasions the production of some builders' work information may be necessary. The builder's work drawings will include drawings and / or schedules prepared to show, for example, the holes and fixings that must be provided within the building fabric to allow the efficient integration of the services into the project.

4.2.13 Specialist Drawing

A generic term for those drawings which may be supplied by a specialist supplier or sub-contractor appointed to undertake design duties in relation to a specific aspect of the project.

4.2.14 Tender Drawing

Drawing produced for the purpose of obtaining competitive tenders. The tender drawings will comprise an agreed set of

4.2.15 Master Drawings

This type of drawings and its schedules gives an introduction to the project and will usually head the complete set of drawings. It will contain general information as follows:

- A simplified location plan showing the site and its relationship with nearby roads and other features (Common scales-1:1250, 1:500, 1:200}
- Notes and data that are common to the entire project, unless already covered by the project specifications
- A legend of all symbols and abbreviations that have been used
- A key to the drawing numbering system, with a brief description of any cross-referencing procedures being used
- An index to the drawings together with a diagram, if appropriate, illustrating how the general arrangement plans have been zoned

4.2.16 Reinforced Concrete Detail Drawings

The reinforcement drawings should be an accurate representation of the design and comply with the relevant codes. They should convey to the steel fixer all the information needed for placing the bars. Plans or elevations and their respective sections should be on the same drawing wherever possible.

4.3 Types of Drawings- By Status

“As Existing” Drawings:

All master drawings that depict the general outline of the building and the existing building elements at any time, are considered “As Existing” drawings.

This set of plans will be updated using the relevant “As Built” drawings submitted by contractors and sub contractors .

“As Built”, “As Installed”, “As Fitted” Drawings:

All drawings showing all the builder’s work and the sub contractor’s work that install or / and fit equipment in the building are considered “As Built”, As Installed” or “As fitted” drawings.

When layout of the building has been changed- regardless of the extent of the works, the “As Built” plans shall:

-Show new Layout locating the drawing components i.e. walls, doors, etc on the relevant layers as per this document layering system. Note that , all layers created by the Consultant /contractor shall be prefixed with two “zero zero” “00”.This will facilitate layer isolation for transferring Cad Information onto the master / existing Cad drawing.

On completion of the works and submission of the “As Built” drawings the project manager will hand over the final set of drawings to Cad Manager.

The consultant / contractors have the duty to set up a Quality Assurance system in order to assure that Cad drawings submitted to the PSD comply with the PSD’s Cad Standards. The title block shall display the name or initials of the person in charge of vetting the drawings.

NOTE:

For the purpose of this document “As Built” drawings refer to all “As built”, “As fitted”, “As Installed” Drawings.

“As surveyed” Drawings:

All drawings submitted for surveyors i.e. Measured Surveyors, Asbestos Surveyors, etc
The “As surveyed” drawings will be recorded accordingly using either the relevant Cad Register Sheet or the Cad database i.e. Tribal system.

“As Received” Drawings:

All incoming Cad data received as a part of building works.
The “As received” drawings will be recorded accordingly using either the relevant Cad Register Sheet or the Cad database i.e. Tribal system.

These drawings will be uploaded onto the appropriated “As Received” folder on the relevant Project folder and the data will not be modified, alter or modified at any time and will be preserved as received from consultants. The files stored in this folder will be for record purposes only and could be compressed into a .zip file to reduce storage space.

Once these files have been verified as suitable, they should be copied into the appropriate “Current” folder for Project Mangers to use.

“Current” Drawings:

All the up to date “Active” drawings belonging to a life project.

“Archive” drawings:

All superseded drawings or drawings that belong to either a closed stage of a project or a closed project. Kept in a “just in case” basis.

“Record” drawings:

Record drawings are usually prepared by services sub-contractors and comprise all “As Built”, “As Installed”, “As fitted” drawings.

The management of these drawings will follow the CDM regulations as appropriated.

“Historical” drawings:

All drawings that for historical reasons is worth to be kept. These normally depict fully demolished building or partially demolished building. These can be kept for legacy reasons.

“Installation “Drawings:

They show details of the sub contractors’ proposal for the execution of the works. The drawings should be prepared in sufficient detail to enable the works to be installed.

“Preliminary” Drawings

When consultant / contractors submit the first set of drawings i.e. preliminaries or emission drawings the Project Managers will flag up the receipt of the drawings to Cad Manager so that an auditing / QA-ing process can be carried out.

The Cad Manager will take a sample of about 10% of the total amount of Cad drawings submitted and will proceed to QA the drawings against the Cad Standards defined in this document.

When drawings do not comply with this Cad Standards the Cad Manager will access the relevance of the deviation and proceed to reject the drawings if necessary. If the plans are rejected the drawings shall be accompanied for a letter from the Cad Manager highlighting the reason for the rejection.

5 OTHER INFORMATION

5.1 Also see “Handover-Cad Issue Sheet”

5.2 Also see, “Handover-Cad Template”

5.3 Digital Layering System

Non CI/SfB	Content	Properties	Colour
01- Schedules	Door Schedules, Window Schedules, Wall Schedules, etc		
01-Drawing Origin	World Coordinate System Origin i.e. Drawing's (0,0) origin	Printable	Magenta
01-Setting out	Construction Lines		Any

01-Aux	Auxiliary lines to help out drawing		Any
Viewports	All View ports	Non printable	Cyan
Dim-General	General dimensioning		
10-Rev X-Text	Revision A,B, C, etc text		Red
10-Rev X-Cloud	Revision A,B,C etc clouds or boxes	Continuous	Red
10-Cad-Comments	General Cad Admin Comments		
Text General			
Title Block	All text, logos, lines, etc on the tile block		
Hatch	Hatches & Patterns	Continuous	
A-Annotations	The scale bar and text, North Arrow, Building Origin (Drawing Origin i.e. World Coordinate System Origin i.e. Drawing's (0,0) origin) , Floor Name, Fire Station Name, etc	Various	Layer colour :Cyan but various colours defined "By object"
A- Photo Location	Indicative Arrows for the photography position, plus photo ref number	Continuous	91
Substructure- Ground			
A-Floor Bed			
A-Foundation Strip			
A-Foundation Footing			
Structure-Primary			
A-Wall		Continuous	white
A-Wall Partition		Continuous	white
A-Column			white
A-Beam			
A-Floor			
A-Roof			
A-Stairs		Continuous	
A-Text General			
Structure- Secondary			
A-Window	All drawing's windows	Continuous	21
A-Window Txt	Window ref number	Font: Arial. Font size: 150. Line spacing: single.	21
A-Door	All drawing's doors	Continuous	21
A-Door Txt	Door ref number	Font: Arial. Font size: 150. Line spacing: single. Justification: TC	21
A-Ceiling	Grid/level changes	Continuous	cyan
A-Ceiling Txt	Font: Arial.	Continuous	21

	Font size: 100. Line spacing: single. Justification: TC		
A-Ramps		Continuous	21
Finishes			
A-Ext Wall Finishes		NA	cyan
A-Int Wall Finishes		NA	white
A-Insulation Ext			
A-Insulation Int			
A-Floor Finishes		Text	21
A-Stair Finishes		NA	
A-Roof Finishes		Text	
Electrical	Content	Line type	Colour
E-Electrical General			Green
E-Electrical Txt			
E-titles	text	continuous	252
E-Electrical Supply			Green
E-Power Supply	Plants, Generators, etc		Green
E-Small Power	Sockets, switches, luminaries, etc	continuous	9
E-call out circuit	Automated lighting	continuous	21
Electric- Schematics	Content	Line type	Colour
ES-Circuit	All wiring, Control panels,		Green
ES-Text			
ES-Schedule	All electrical schedules		Green
Electric- Diagrams			
ED-Wiring	Control Panel diagrams		Green
ED-Txt	Elect		
ED-Schedules			
Mechanical	Content	Line type	Colour
M-Services General			
M-Services Txt			
M-Waste Foul			
M-Waste Rain Water			
M-Ventilation			
M-Heating	Heating distribution, radiators, pipe runs, etc	continuous	Cyan
M-Water supply	Water service	continuous	Cyan
M-gas supply	Gas service	continuous	cyan
M-plant	Heating plant	continuous	cyan
M-text	Mechanical related text	Font: Arial Font size 220 Justification: TC Line spacing: single	252
M-titles	Mechanical related headings	Font: Arial Font size 220 Justification: TC Line spacing: single	252
Mechanical Schematics	Content		
M-Plant	Water Tanks, Water		

	heaters, condensing Boilers, Pumps, Valves, Gauges, etc		
M-Pipe	All pipe work		
M-Gas	Gas installation		
M-Text	Text & Dimensions.		
M- schedule	All mech. schedules i.e. Valves, Pipes, etc		
Comms & Data			
C-Voice	Telephone points, ducting, Tel Boxes, etc		
C-Data	IT points, ducting, Network Cabinets		
C-Mobilisation	Mobilisation speakers, etc		
Fire Safety			
F-Fire Safety	Compartmentation (Fire Resisting Walls, Fire Doors, Fire Shafts, etc), Fire Escape (Emergency Lighting, smoke /heat detection), Fire Exits, Fire Alarm Panel) Fire alarm(Call Points, Sounders), Fire Fighting (Sprinklers Systems, Extinguishers, Blankets, etc)		Red plus some objects colours defined "By Object"
Health & Safety			
H-Asbestos			
H-Hazardous & Poisonous substances			
Furniture, Fixtures & Equip. (FFE) (*1)	(moving furniture, fixtures or equipment)		
A-Circulation Fittings (Signage)			
A-Furniture (*2)	Work (Desks, chairs, Filing cabinets, PCs, etc,), Rest (Beds, Sofas, Benches, etc)		
A-Sanitary Fixtures	Toilets, bidets, basins, sinks, showers, etc		
A-Storage	Drawers, lockers.		
A-Appliances	Kitchens, culinary fittings, fridges, freezers,		
A-Loose Fittings	Conference equipment, etc		
Space Planning / FM			
P-Floor covering	Type of floor	continuous	21
P-Ceiling Height	Suspended or otherwise	continuous	21
P-Room Usage		continuous	blue
P-Room area	Room's GIA Polyline (perimeter), Hatch and text.*	continuous	21
P-Block data	Block Information attributes	continuous	Magenta
P-Room data	Room information attributes	continuous	Magenta

P-Occupants	Occupants attribute from the room attributes	continuous	Magenta
P-Operational	Operational attribute from the room attributes	continuous	Magenta
P-Finishes data	finishes attributes from the room attributes	continuous	Magenta
P-GIA	Gross Internal Areas including polyline, hatch and text).	continuous	Magenta
P-GNA	Gross Net Areas including polyline, hatch and text).	continuous	Blue
P-GEA	Gross External Areas including polyline, hatch and text).	continuous	Red
External Works			
Y-Site General	Fuel Pumps, Lamp Posts, etc,	continuous	
Y-Site Txt	Site related text	continuous	252
Y-Site Titles	i.e. Station Name	continuous	252
Y-Grid		continuous	24
Y-Levels		continuous	
Y- Invert Levels		continuous	
Y-Survey Station	Survey Control Stations	continuous	
Y-Parking	Car, Bikes, Bicycle, etc	continuous	253
Y-Training Areas	Deep Water Lift Pits, RTA training, Forw lift training,	Hatch ANS137 (Sca 1000)	253
Y-Boundaries	Fences, Gates, Barriers, Boundary walls	continuous	white
Y-Drill tower	i.e. Drill Tower Foot print	continuous	white
Y- "Surface"	i.e. Y-Tarmac, Y-Concrete, Y-Vegetation, etc	continuous	red
Y-Other obstruction		continuous	cyan
Y-Road	Roads, Approaches, kerbs, etc	continuous	24
Y-Services	stop cock, manhole, inspection chamber, fire hydrant, water pipes, gas pipes	continuous	Cyan
Y-Geotechnical Survey	Bore holes location, strata profiles		