

Project Management Plan

Ref: 0655-IVG-27-PMP-009

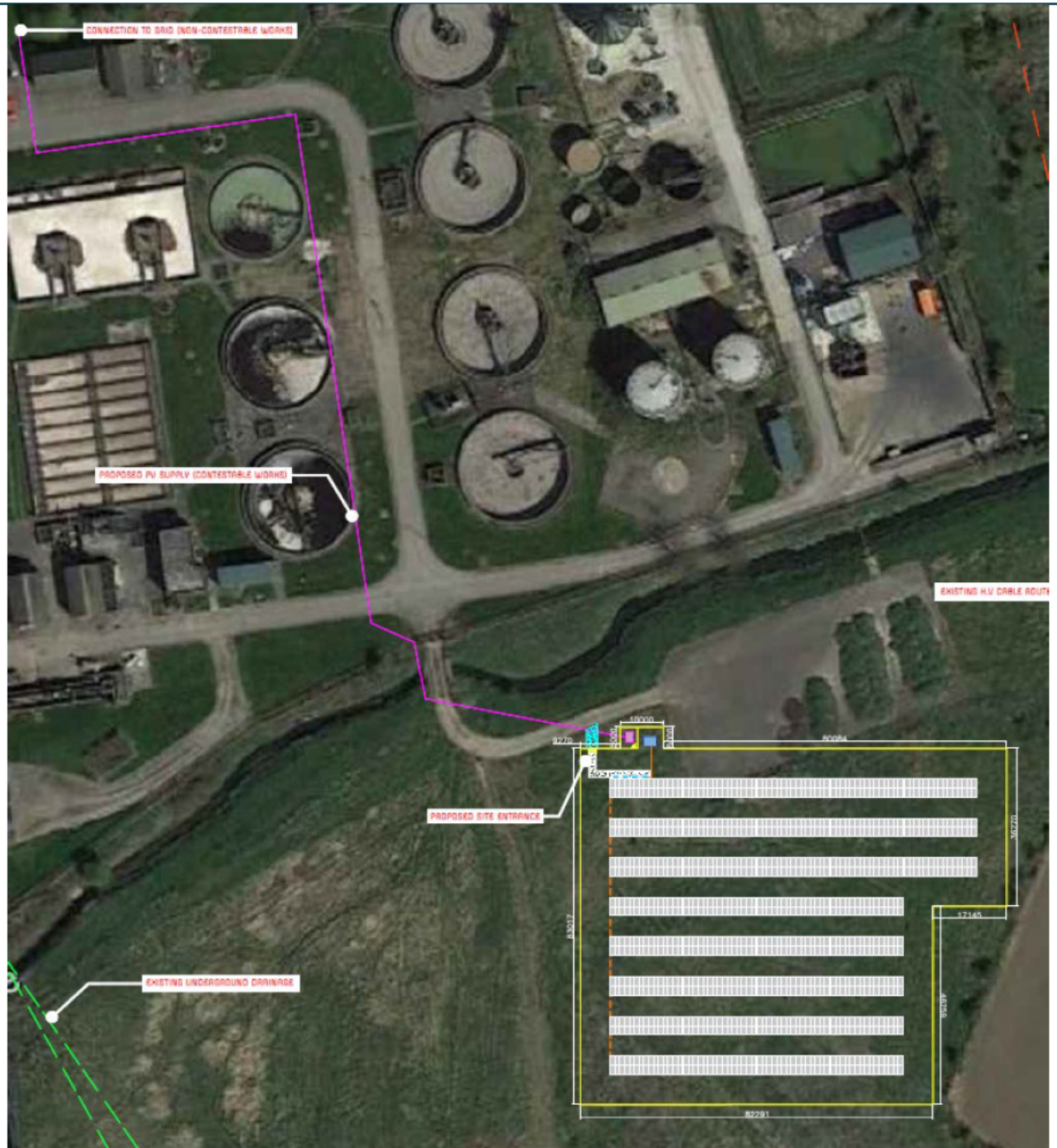
Project: Wombwell
(Yorkshire Water)

Ivegate

Renewable Energy

PROJECT INTRODUCTION	
PROJECT:	0655-27 Wombwell
ADDRESS:	Ings Road, Wombwell S73 0BP
WHAT 3 WORDS:	https://w3w.co/auctioned.casino.under
AUTHOR:	L. Ashley
PROJECT GENERAL DESCRIPTION:	Ivegate Ltd have been appointed as the Principal Contractor for the development of a ground mounted solar array on land owned by Yorkshire Water. Electrical connection to the Yorkshire Water infrastructure is via a dedicated cable to a pre-built point in the plant room. The electrical point of connection has been supplied by the client. General works on site: • Site preparation, involving setting out the site, temporary installation of welfare facilities and site compound for storage and waste management. • Setting out an area for refuelling. • Erecting a perimeter fence as per the design. • Piling/securing the mounting frames into the ground. • Installing the panels to the mounting frames. • Trenching for the cable runs and laying cables. • Installing inverters for DC-AC conversion. • Installing low voltage distribution board. • CCTV posts and installation of security system. • Termination and testing all circuits.

PROJECT GENERAL DESIGN:



EXPECTED DURATION:

6 weeks, commencing: **TBC**

WORKING HOURS:

Expected to be between: 8am – 5pm Monday to Friday, with Saturday Works possible.

HSE NOTIFICATION:

These works are not reportable under F10:
Construction weeks 6, Average 12 workers, Maximum 15 workers= 360 person days.

TYPE OF SITE:

Waste Water.

VERSION CONTROL AND AMENDMENT NUMBERS OF THIS DOCUMENT

Revision Number	Description of Change	Updated by	Date
0	Current Version, no revision.	LA	09/11/2023
1			
2			

3
4
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1. PRE-CONSTRUCTION INFORMATION

	Document	Reference
1.1	PCI Info Sheet (as completed by Yorkshire Water)	0655-IVG-27-PMP-007a
1.2	Planning Approval	TBC
1.3	DNO Approval	ENQ23084240
1.4	Flood Risk Information	Environment Agency: Flood Zone 2
1.5	TOPO Survey	TBC
1.6	GPR Survey	TBC
1.7	Soil Electrical Resistivity Survey	TBC
1.8	Utilities Searches	S24506
1.9	Asbestos	TBC
1.10	UXO Report	Zetica Map (Low)
1.11	Ground Contamination Report	TBC
1.12	Deflection Test (Pull/Push)	TBC
1.13	Ecology Report	084_19_44_RE01
1.14	Harmonics G5/5	IUS Wombwell
1.15	Lightning Risk Assessment	J10136
1.16	Hydrology Risk Assessment	N/A
1.17	Design Risk Assessment	TBC
1.18	Point of Connection Design	TBC

2. SCOPE OF THIS DOCUMENT

Ivegate are acting as the Principal Contractor for the development of an embedded solar photovoltaic system at Yorkshire Water, on behalf of their client: Downing Ltd.

This document forms the Construction Phase Plan, as required by the Construction (Design and Management) Regulations 2015.

The contents of this document seeks to satisfy the requirements of a Construction Environmental Management Plan and in doing so will provide effective, site-specific procedures and mitigation measures to monitor and control environmental impacts throughout the construction phase of the project. The plan is to ensure that construction activities so far as is practical do not adversely impact amenity, traffic or the environment in the surrounding area.

This plan shall encompass the requirements of a construction quality management plan and in doing so will establish the project framework, project structure, and the project management plan. This quality plan establishes the frameworks and rules (safety, quality) for implementing and managing this project.

This project will be conducted in-line with our Integrated Management System (IMS) which provides guidance and processes in which to deliver this project. Quality is influenced throughout our IMS by the requirements of health, safety and our commitment to the environment. Our IMS has therefore been produced with reference to:

- ISO 45001: Occupational Health and Safety.
- ISO 14001: Environmental.
- ISO 9001: Quality

This document is to be read in conjunction with the Pre-Construction Information listed.

Design hazards have been highlighted and taken into consideration for the commencement of the works.

This Plan will remain a 'live' document until the end of construction.

3. PROJECT MANAGEMENT TEAM REGISTER

	COMPANY:	CONTACT:	TEL:	EMAIL:
CLIENT:	Downing	Shane Bermingham	[REDACTED]	[REDACTED]
CLIENT:	Downing	Kaitlin Beattie	[REDACTED]	[REDACTED]
CLIENT:	Downing	John Pearce	[REDACTED]	[REDACTED]
PREMISES OCCUPIER:	Yorkshire Water	Vikki Overend	[REDACTED]	[REDACTED]
PRINCIPAL DESIGNER:	Cubis	Graham MacAlpine	[REDACTED]	[REDACTED]
PRINCIPAL CONTRACTOR:	Ivegate	Lee Ashley	[REDACTED]	[REDACTED]
LEAD DESIGNER:	Ivegate	Sean Kellet	[REDACTED]	[REDACTED]
SITE MANAGER:	Ivegate	TBC		
FIRST AIDER:	Ivegate	TBC		
QHSE MANAGER:	Ivegate	TBC		

4. GENERAL RESPONSIBILITIES FOR MANAGING THE WORKS

We will strive to achieve zero accidents/incidents, and pledge to learn from near misses. We will ensure so far as reasonably practicable that the risks to people's health and safety from work activities are eliminated, this will be achieved by:

- Setting the highest standards, from the start, promoting a positive, proactive safety-culture throughout the duration of the project.
- Creating an open-door culture that encourages and motivates safety awareness.
- Employing only competent contractors.
- Ensuring that all aspects of training are effective and relevant at all times.
- Ensuring effective and continuous consultation between all parties involved in the project.
- Implementing effective risk management and emergency procedures.
- Implementing active monitoring of our works through QHSE audits.

Make suitable arrangements for managing the project. This includes making sure that:

- Duty holders are appointed.
- Sufficient time and resources are allocated.

4.3 PREMISES OCCUPIER:	• Relevant information is prepared and provided to other duty holders. • The principal designer and principal contractor carry out their duties. • Welfare facilities are provided.
	Yorkshire water are responsible for providing sufficient information to Downing and their contractors so that they may work safely on their premises. This shall include providing any inductions, instructions, and, where appropriate, review RAMS for works.
	Will plan, manage, monitor and co-ordinate health and safety in the pre-construction phase of the project, including: • Identifying, eliminating or controlling foreseeable risks. • Ensuring designers carry out their duties. • Prepare and provide relevant information to the principal contractor to help them carry out their duties.
4.4 PRINCIPAL DESIGNER:	
4.5 DESIGNER:	Any designer, when preparing or modifying designs, will endeavour to eliminate, reduce or control foreseeable risks that may arise during construction or over the course of maintenance and general use of the solar array once it is complete.
4.6 PRINCIPAL CONTRACTOR:	Responsible for all aspects of health and safety on the construction of this project. Responsible for co-ordinating and promoting co-operation between contractors and providing relevant information to the Principal Designer, Client and interested stakeholders; including any design changes made throughout the works.
4.7 SITE MANAGER:	Responsible for implementing the plans provided and the day-to-day organisation of works. They will produce documentation throughout the works, these shall include: • Records of Inductions. • Review of RAMS. • Records of Deliveries. • Records of Toolbox Talks. • Records of Plant Inspections. • COSHH Register. • Construction Progress Reports.
	Responsible for conducting assessment before, during, and post works. Assessment will be communicated to management, the client and other stakeholders. Where necessary, updates to this plan or any other plans will be undertaken following QHSE assessment. Outputs: • Dilapidation Survey. • QHSE Site Audits. • Incident Reports. • Records of Non-Conformities. • Quality Assurance Report.
4.8 QHSE MANAGER:	
4.9 CONTRACTORS:	Responsible for their own health and safety and that of others by their own actions/non-actions whilst undertaking tasks associated with this project. Responsible for the provision of their own site-specific method statements with associated risk assessments which are to be presented for review no more than 10 days prior to works commencing.
5. ARRANGEMENTS FOR MANAGING THE WORKS	
5.1 SITE RULES:	• All personnel shall undergo a site induction. • Permit to work for high-risk activities are required. • Any person found to be interfering with or misusing fixtures, fittings or equipment provided in the interest of health, safety or welfare will be excluded from the site.

	• Smoking will be prohibited unless within dedicated smoking areas. • Visitors must report to the site manager. • Whilst on site visitors are to wear the appropriate PPE and remain under supervision. • Safety signs and notices must be followed. • All site personnel, for their own safety and for the safety of others, are required to fully comply with their employer's method statement and risk assessments. • All personnel are required to wear high visibility vest / jacket, safety helmet, safety footwear. • The consumption of alcohol and drugs is prohibited. • No person is to operate any mechanical plant or equipment unless they have been trained and certificated as competent. • Food is only to be consumed in the designated accommodation / messing areas. • No personnel shall indulge in fighting, horseplay or practical jokes within the site perimeter. • All maintenance operations are to be carried out by trained and authorised persons. • All accidents/incidents and near misses are to be reported to the Site Manager. • No refuelling of Plant equipment shall take place in the array area due to the site's sensitive area as a water extraction facility.
5.2 CO-OPERATION BETWEEN THE PROJECT TEAM ON SITE & CO- ORDINATION OF THEIR WORK:	The Principal Contractor will ensure good co-operation and co-ordination of work between all parties involved in this project. It is essential that all aspects of control measures are put in place where risks have been identified. We will actively take the lead in encouraging co-ordination and co-operation between all contractors from the onset of this project. Information regarding hazards and controls will be shared to ensure issues are planned and managed correctly. This will be achieved via weekly meetings, notice boards and toolbox talks.
5.3 CONSULTING WITH THE WORKFORCE:	The site manager will engage with the workforce in identifying and controlling risks so to eliminate/reduce accidents. We will ensure worker engagement and communication by implementing the following: • Throughout the project, meetings will be held with the workforce to discuss the health and safety issues arising or that may arise. • Informal meetings will take place as required as a result of daily site walks. • We will provide information through a site safety information board. • We will carry out specific Toolbox Talks as required. • Contractors will also be expected to carry out Toolbox Talks as required.
5.4 EXCHANGING INFORMATION BETWEEN THE CLIENT, DESIGNERS, PRINCIPAL DESIGNER & CONTRACTORS:	Updates on the project and general information will be communicated throughout the works. The site manager and/or project manager will produce the information and send to relevant parties. The platform for communicating will depend on the recipient and the nature of the information. Generally this will be: Contractors at site level- Notice board, TBT, Task briefings, drawing folders. Client- Progress reports, Audits.
5.5 HANDLING DESIGN CHANGES DURING THE WORKS:	The site manager/project manager will highlight any design changes to stakeholders, including updating the principal designer, when required. No alterations/deviations from the design shall be undertaken until the client has provided approval. Approval to be provided within a reasonable timeline taking into consideration the short duration of construction, so that the principal contractor doesn't incur delay costs. Where a change of design results in a cost increase, this shall be treated as a variation under the contract and financial approval required from the client. Smaller design changes will be communicate verbally at site level and agreed immediately. More substantial design changes will involve halting of works and the production of required drawings/calculations before formal approval is provided by the client/stakeholders.
5.6	Only use competent contractors from our approved contractor database, having first passed our PQQ process, will be selected for the works. During induction the individual workers will be required to prove their competency via recognised licences or cards etc.

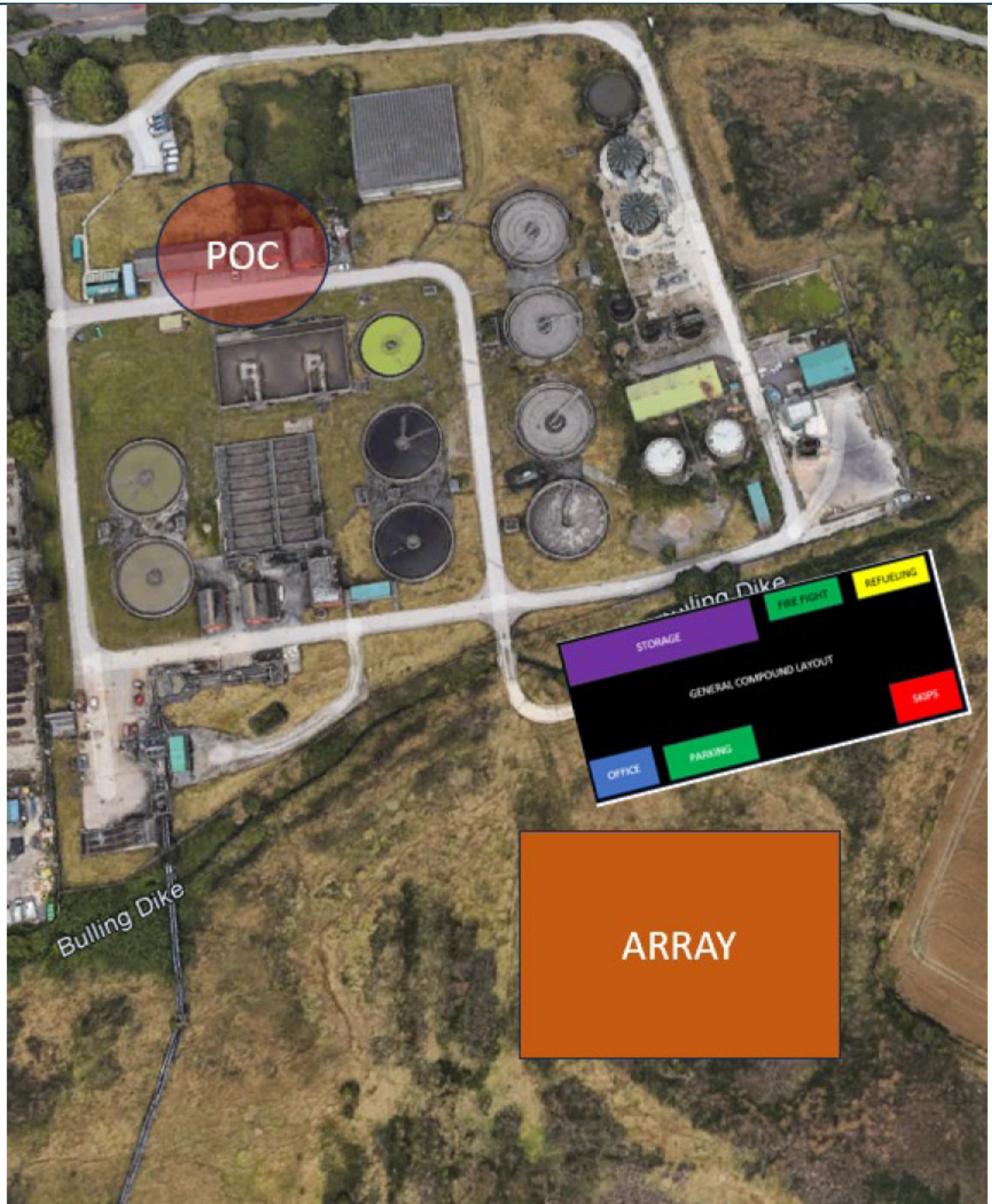
SELECTING & CONTROLLING CONTRACTORS:	
5.7 EXCHANGING HEALTH & SAFETY INFORMATION BETWEEN CONTRACTORS:	Contractors will be made aware of the requirements of this Health and Safety Plan and the following information will be available throughout the duration of the project: • Health and Safety at Law Poster • Health and Safety Policy Statement • Emergency Information (including evacuation & first aid) • Emergency Contact Numbers • Fire Procedures • Signing in & out
5.8 SITE SECURITY:	The order of works will ensure that the final security fence shall be installed first, providing security and warning signs for the construction works. Temporary warning signs shall be displayed around the works highlighting the potential hazards and to restrict access.
5.9 SITE INDUCTION:	All personnel working on this project must attend a Yorkshire Water induction for the wider site in addition to the construction site induction, which will be delivered by our site Manager.
5.10 ON-SITE TRAINING:	Toolbox talks will be provided by the site manager ahead of any new works or in response to a change in works or as an update following an incident. Contractors will be expected to provide additional toolbox talks to their specific employees.
5.11 REPORTING & INVESTIGATING ACCIDENTS, INCIDENTS & NEAR MISSES:	All accidents, incidents and near misses must be reported to the Site Manager. These will be recorded as will any environmental incidents. All occurrences under the RIDDOR Regulations and any other accident or incident or near miss deemed necessary will be investigated. Incidents will be communicated no more than 4 hours after discovered by phone, and follow up email (with attached documents where required) to the client representatives listed in the project team register. Results of any reports will be issued to clients in a reasonable timeframe. If, during the works, Ivegate receive any complaints from neighbouring properties or from YW (or their contractors) we shall record these and communicate immediately to the client representative.
5.12 APPROVING RISK ASSESSMENTS & WRITTEN SYSTEMS OF WORK:	All expected RAMS for the project are recorded on the companies RAMS register, with the due date for them to be provided listed. All contractor's must provide their risk assessments and method statements to the site manager/project manager at least 10 days prior to works commencing/date listed on the register. The RAMS will be reviewed for being suitable and sufficient for works to commence, prior to the contractor working on site. The client representative will undertake dip sampling of RAMS for compliance with their expectations and where improvements are to be made a reasonable and collaborative approach will be undertaken. Where mitigation methods incur a cost that Ivegate view as unreasonable, we shall escalate this for further discussion/agreement prior to implementation.
5.13 PPE REQUIREMENTS:	As a minimum all personnel on this site, including visitors must wear: • Head Protection. • High visibility vests/jackets. • Safety Footwear. • Suitable gloves adequate for the task being carried out. • Eye Protection. • Gas Monitors. As and when required further PPE such as ear defenders, dust masks, foul weather clothing etc. may be required, these must be supplied by the employer or self-employed person.

5.14 Permits	Employees have a duty to wear the PPE which has been supplied to them; the same duty applies to self-employed persons.
	Ivegate use a formal permit to work system for those areas of construction that pose a greater risk to safety. Permits are in addition to risk assessments and method statements. Permits shall be provided by the site manager and will state exactly what work is to be done, when and which parts are safe. Ivegate will operate permits for: • Excavations. • Electrical testing and commissioning. • Hot works. Additional permits will be required by Ivegate for the build programme. These are for the termination of the cables in the YW premises. The site manager will seek the permits from the ICP contractor that is operating on the site to build the point of connection.
6. SITE ESTABLISHMENT	
6.1 WELFARE:	Ivegate will provide temporary welfare facilities for the works for the duration of the project construction period. These will consist of: • Toilet. • Drying room. • Seating area with a microwave for heating food and access to hot and cold water. This project will require two 7-person units. See 7.2 for location.
6.2 FIRE EXTINGUISHERS:	The site will have both Powder and Carbon Dioxide fire extinguishers available. Fire extinguishers will be available at: • Refuelling area. • Array area. • Welfare area.
6.3 FIRST AID:	The site will have a first aid kit available at the site office/site managers desk. The kit will contain eye wash kit. Contractors are expected to have additional first aid kits as part of their arrangements for work, often stored in their vehicles.
6.4 STORAGE:	The site shall have secure storage provided for items that can be locked away such as cables, tools, and electrical components.
6.5 WASTE:	The site shall have methods for disposal of the following waste streams, all units shall prevent waste from being blown across the site: • Mixed. • Wood only. • COSHH.
7. TRAFFIC MANAGEMENT	

7.1 LOGISTICS PLAN TO THE SITE:



7.2
SITE LAYOUT:



7.3
ACCESS TO THE
ARRAY:



7.4
ACCESS TO THE
COMPOUND:





7.5 ACCESS TO THE ARRAY:

7.6 PLANNED LOGISTICS:

The site hours are Monday to Friday: 08:30 to 17:00 Saturdays: 08:30 to 13:00.

No works are planned for Sundays and Public Holidays.

No work or deliveries shall take place outside of these hours unless agreed prior and in consultation with Yorkshire Water and Downing.

Deliveries will be scheduled and arranged accordingly to prevent any inconvenience as far as it is reasonably practicable to residents living in close proximity to the works and other road users.

7.7 EXPECTED LOGISTICS SCHEDULE:

- Plant delivery - 2 vehicles for 1 day (week 1) – HGV with all equipment (9mx2.9Ht 3m)
- Cable delivery - 2 vehicle for 1 day (week 1) - Delivered by 26ton rigid vehicle (7.6x2.5Ht 3.5m)
- Construction materials - 2 vehicles for 2 days (week 1/2) Delivered by 26ton rigid vehicle (7.6x2.5Ht 3.5m)
- Frame delivery - 1 vehicle for 1 day (week 2) Delivered by 26ton rigid vehicle (7.6x2.5Ht 3.5m)
- Panel delivery - 1 vehicle for 1 day (week 3) – Delivered by 26ton rigid vehicle (7.6x2.5Ht 3.5m)
- Skip delivery – 1 vehicle for 1 day (week 1) – Delivered by rigid (4.27x2.5Ht 3.68m)
- 3-5 Vans each day

7.8 DELIVERING VEHICLES LAYING UP:

Delivery hours will be limited to workings hours. Contractors are reminded of this at pre-start meetings. Deliveries are booked with the Site Manager.

7.9 PLANT ON PUBLIC ROAD:

Wheel washing facilities in the form of a pressure washer and water bowser will be available if deemed necessary, at the site entrance. In addition, a visual inspection of all vehicles leaving the site will be made by a designated person. If vehicles are not deemed to be free from mud, they will be turned back to the wash-bay area for further cleaning.

7.10 REFUELLING:

A procedure for controlled refuelling up of plant and equipment will be implemented on the Project. This will include a secure area and all refuelling will be carried out by a trained and competent person with access to the necessary fuel spill kits.

8.1 PEDESTRIAN ROUTES:

8. ARRANGEMENTS FOR PEOPLE AND PLANT MACHINERY

- Pedestrian routes shall be clearly separated from vehicle routes pin and tape.
- Pedestrian routes shall be wide enough to safely accommodate the number of people likely to use them at peak times.

8.2 VEHICLE ROUTES:

- Pedestrian routes shall allow easy access to work areas.
 - Pedestrian routes shall be kept free of obstructions.
 - Pedestrian routes shall be clearly signed.
 - Pedestrian routes shall not cross the main vehicle routes.
 - Pedestrians shall have a clear view of traffic movements at crossings and at gates which lead on to traffic routes.
 - Pedestrian routes shall provide safe access to welfare facilities.
- Routes shall be clearly separated from pedestrian routes by pin and tape.
 - Routes shall be wide enough to safely accommodate the number of vehicles likely to use them at peak times.
 - Routes shall allow easy access to delivery areas where feasible.
 - Routes shall be kept free of obstructions.
 - Routes shall be clearly signed.
 - Routes shall eliminate or reduce the need for reversing where possible.
 - Parking areas shall be required for vehicles to the rear of Yorkshire Water site.
 - Vehicles shall use reversing aids.
 - Vehicles shall have flashing lights when in areas near to pedestrian routes.

8.3 DRIVERS SAFE WORK PRACTISES:

- Only operate vehicles if you are competent and authorised to drive them.
- Do not drive when your abilities are impaired by ill health, poor vision, prescribed/illegal drugs, or alcohol.
- Make sure you fully understand the operating procedures of the vehicles you control.
- Know the site routes and follow them, taking care at pedestrian crossings.
- Understand the system of signals used on the site.
- Visiting drivers to seek appropriate authority to enter the site and operate vehicles.
- Know the safe operating limitations of your vehicle and report all defects immediately to supervisors.
- Follow site procedures and comply with all site rules.
- Do not drive at excessive speeds and keep within the 5mph when on operational land and in construction areas.
- Wear appropriate PPE when out of the cab.
- Ensure that windows and mirrors are kept clean and clear.
- Keep the vehicle tidy and free from items which may hinder the operation of the vehicle controls.
- Do not allow passengers to ride on the vehicles unless safe seating is provided.
- Park vehicles on flat ground wherever possible, with the engine switched off the handbrake and trailer brake applied and where necessary use wheel chocks.
- Do not reverse without reversing aid or banksman assistance.
- Where visibility from the driving position is restricted, use the visibility aids or a signaller and stop if you lose site of the signaller.
- Do not remain in vehicles during loading operations unless the driver's position is adequately protected.
- Ensure loads are safe to transport.
- Do not attempt to get on or off moving vehicles.
- Do not make adjustments with the engine running and guards removed.
- Do not smoke during refuelling operations.
- Do not use a mobile phone whilst driving.

8.4 SIGNALLER/ BANKSMAN:

- Use the relevant safety procedures and correct signalling systems.
- Ensure drivers understand the correct signalling systems.
- Signal instructions clearly.
- Ensure you are visible to the driver and the driver is visible to you, if not stop the vehicle moving.
- Stand in a safe location at all times.
- Warn pedestrians and make sure they are kept away from the vehicle's operations.
- Wear appropriate protective clothing, including high-visibility clothing.
- Report work hazards to supervisors.
- Make sure you get to and from your work location safely.

- Do not ride on the vehicle you are directing unless you are in a designated safe position.
- Do not direct vehicles if your ability is affected by alcohol or drugs.
- Do not use a mobile phone whilst directing vehicles.

9. FIRE & EMERGENCY DETAILS

9.1 HOSPITAL DETAILS:

Barnsley, Gawber Road S75 2EP

The hospital is approximately 6 miles away from this site.

9.2 EMERGENCY PROCEDURE:

IF YOU DISCOVER A FIRE-

- Immediately raise the alarm, shout: FIRE-FIRE-FIRE.
- Ensure that the Site Manager is informed of the fire.

ON HEARING THE AIR HORN-

- Leave the site immediately and report to the person in charge at the muster point.
- DO NOT stop to collect personal belongings.

9.3
MUSTER POINT:



10. CONTROL OF SIGNIFICANT RISKS TO SAFETY

10.1
DELIVERY &
REMOVAL OF
MATERIALS
(INCLUDING WASTE):

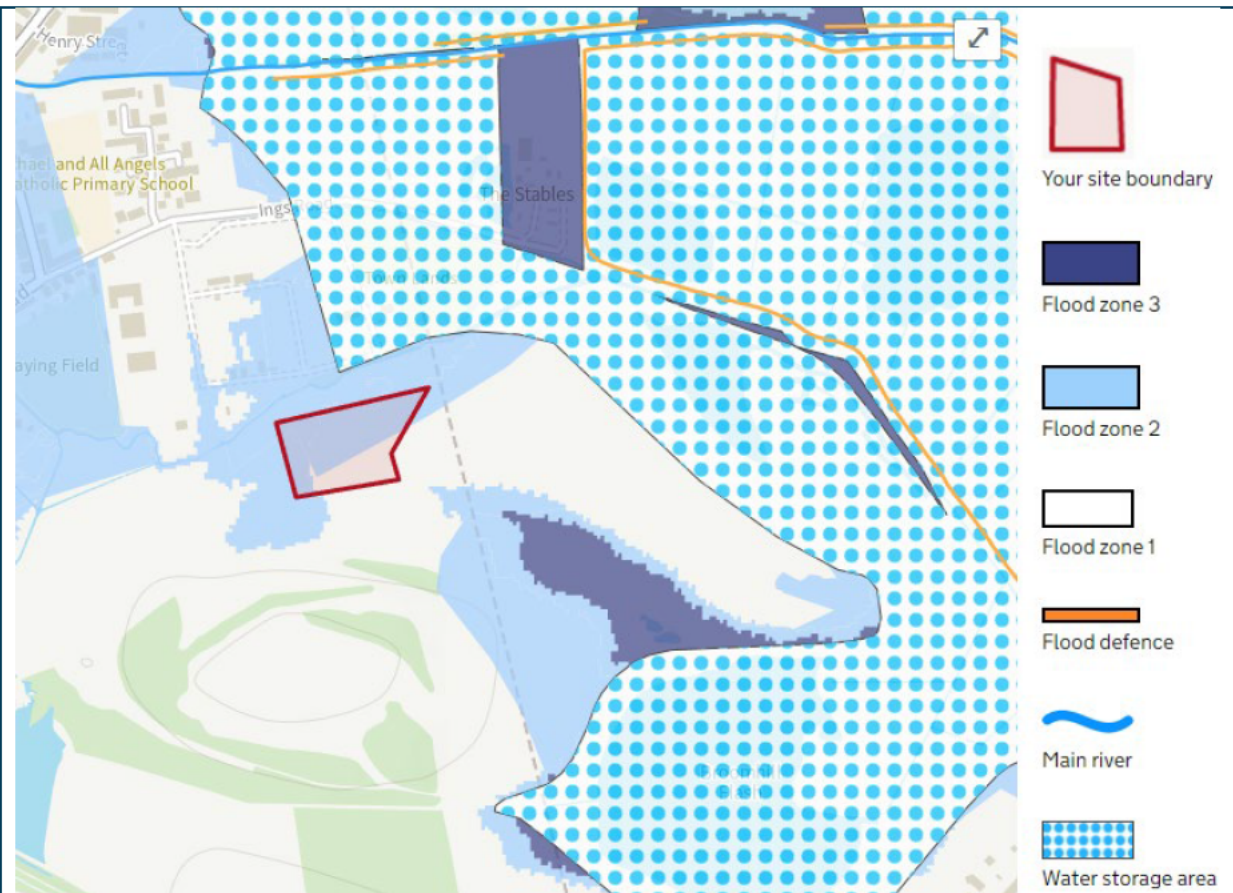
All materials will be delivered by courier and the vehicles will enter the site at 10mph maximum.

10.2
LIFTING
OPERATIONS:

No contract craneage lifting equipment or operations are planned.

Lifting of materials from a storage area will be by telehandler, undertaken by a trained person and the area for lifting cordoned off during lifting operations overseen by the site manager. Unloading of materials and moving around the site will be by telehandler or Bob Cat where appropriate.

10.3 DEALING WITH SERVICES; WATER, ELECTRICITY (INC OHL) & GAS:	Service drawings will be checked prior to any works. Appropriate CAT and Genny equipment will be used by competent people where ground is to be broken for the installation of cables, should the design change to require this.
10.4 ACCOMMODATING ADJACENT LAND:	The proposed works will probably have a noise impact on neighbouring properties. The Client is aware and the residents will have been informed.
10.5 STABILITY OF STRUCTURES WHILE CARRYING OUT WORKS, INC ANY TEMPORARY STRUCTURES:	Support frames for PV arrays are self-supporting once fixed to the piled foundations. It is not expected that a requirement for scaffolding is necessary for this project or any other temporary structure. As such there is no temporary works coordinator required for the project.
10.6 PREVENTING FALLS:	Falls from height is the biggest single cause of fatal accidents and major injuries at work. A place is considered at height where a person could fall and sustain an injury, and this includes workplaces that are at or below ground level such as excavations. Work will only be undertaken at height when it is safe and reasonably practicable and where it cannot be undertaken other than at height. All work at height will be properly planned and supervised.
10.7 WORKING NEAR FRAGILE MATERIALS:	There are no fragile materials identified on this project.
10.8 WORK INVOLVING ASSEMBLY OF HEAVY PREFABRICATED MATERIALS:	The heavy prefabricated items will be moved into position via mechanical equipment, such as inverters, Low Voltage Distribution Board, etc.
10.9 WORKING NEAR (OR WITH) HIGH- VOLTAGE SOURCES:	The connection for the system is at HV, no works on HV will be undertaken by Ivegate. The client has an additional contractor for these independent works.
10.10 WORKING ON ELECTRICAL SYSTEMS:	Working on systems that are live are not permitted, and this must be reflected in contractors' RAMS. During testing of circuits suitable lockout and tagout (LOTO) systems will be implemented and insulated tools used by competent contractors in line with testing requirements detailed in the IET Guidance Note 3: Inspection & Testing.
10.11 WORKING ON EXCAVATIONS:	Trenching for cables will be c600m in depth and c600m wide. HSG47 will be consulted before planning of excavations. Plant and vehicles are not to traverse close to the sides of excavations. The extra loadings can make the sides of excavations more likely to collapse. Any movements by plant close to excavations will only be completed with the assistance of a competent banksman.
10.12 WORKING NEAR OPEN WATER:	A Flood Risk Assessment has been undertaken by Ivegate, via the environment agency online service. The site is located within Flood Zone 2 which indicates that it is a medium probability of flooding.



10.13 TRAFFIC ROUTES & SEGREGATION OF VEHICLES & PEDESTRIANS:

There's only one small road from the compound area to the array area. People and plant will be separated as much as possible, due care will have to be taken and any other points.

10.14 STORING MATERIALS (INC HAZARDOUS) & WORK EQUIPMENT:

All equipment and materials will be stored in an appropriate area as made available by the client. No items identified as COSHH will be used/required for these works, including re-fuelling for the telehandler.

10.15 WORKS WHICH PUTS WORKERS AT RISK OF BIOLOGICAL HAZARDS:

Good housekeeping will be implemented throughout the works as a routine HSE monitoring report will be produced by the construction project manager/site manager throughout the works.

10.16 MANAGEMENT OF PLANT & EQUIPMENT:

The contractor is responsible for the maintenance of their site plant and equipment, records of the site plant are recorded by the Site Manager. The site manager is to ensure that only trained and qualified personnel operate plant and machinery, copies of all relevant qualifications are to be held within the site files on induction. Only battery operated or 110V tools will be permitted for use on site.

10.17 WEATHER:

Should any areas of the site be affected by inclement weather suitable measures will be taken to prevent injury to workers. Due to the nature of the installation, works will be suspended at times of electrical storms. During periods of rain, waterproof jackets and trousers shall be worn.

11. CONTROL OF SIGNIFICANT RISKS TO HEALTH

11.1 ASBESTOS:

Pre-Construction information (PCI) as provide, has determined the building for the PoC is pre 2000 (year) construction, therefore Asbestos is deemed to be contained within the structure. Asbestos management records have been provided by Yorkshire Water for the building where the PoC is to be located. The records show.....

11.2 CONTAMINATED LAND:	If for any reason asbestos is thought to be present during works activities, those activities and all other works will be stopped until the asbestos status has been confirmed. The Site Manager/Project Manager shall take the appropriate action, whereby a specialist asbestos surveying company may be contacted to undertake the appropriate survey. The findings of the survey will update this CPP.	
	The commercial tier 2 assessment, as part of the pre-Construction information, has not highlighted any land contamination that poses a risk to human health. The conclusion of the report advises no further mitigation to workers above the usual PPE that would be expected on this project.	
	Due to the nature of this project and construction in general, consideration shall be given to the use of mechanical handling for all heavy, large, and bulky equipment and materials. Wherever possible, the manual handling of such items shall be managed out, with consideration being given to the provision of sufficient and appropriate lifting equipment and facilities. The following items have been identified as posing a potential risk in terms of manual handling: • Delivery of heavy plant and material. • Transporting materials across sites. • Lifting into position PV Modules. • Positioning of framework.	
11.3 MANUAL HANDLING:		
11.4 USE & DISPOSAL OF HAZARDOUS SUBSTANCES:	The expected hazardous substances for this project are diesel fuel, zinc spray and Quelfire.	
11.5 NOISE & VIBRATION:	When using tools that make a noise or vibrate on this project, contractors must wear ear defenders and gloves. These are expected for: • Impact drivers. • Disk cutters for the cable tray work. • Drills for cable penetration works (PoC entry TBC). • Pilling Rigs.	
	Due to the nature of the works it is not anticipated that there will be a significant exposure to hand-arm-vibration on this project. Workers identified as using equipment as a source for this will be when installing module clamps and their use of impact drivers. These workers will rotate between those holding the modules and those installing the clamps so to reduce exposure time. Modern impact drivers used have an inherent feature to reduce the passage of vibration when in use, and these will be encouraged for all workers.	
11.6 EXPOSURE TO UV:	During sunny periods contractors will be expected to use sun screen and have suitable clothing for the conditions.	
11.7 DUST:	During dry spells the passing of vehicles, either delivery, workers transport, or plant machinery may release dust into the air. Speed limits shall be observed and if deemed required vehicle may be suspended. To control the release of any dust from drilling activities inside, appropriate damping with water shall be used.	
12. ENVIRONMENTAL & ECOLOGY ASSESSMENT		
12.1 BATS:	CONSTRAINTS	MITIGATION MEASURES
	Appraisal: Yes.	No external lighting.
12.2 REPTILES:	Appraisal: Yes.	Work to take place outside of winter period to avoid endangering.
12.3	Appraisal: No.	N/A

GREAT CRESTED NEWTS:		
12.4 BIRDS:	Appraisal: Likely.	Vegetation removal should take place outside of breeding season.
12.5 TREES & WOODLAND:	Appraisal: Not assessed.	No trees are required to be removed for the works.
12.6 INVASIVE PLANT SPECIES:	Appraisal: Yes.	Works to be 5m away from drainage.
12.7 CONSTRUCTION LIGHTING:	Appraisal: None.	No works during dark hours that will require lighting are to take place.
12.8 NOISE & VIBRATION:	Appraisal: Potential.	Piling rig will create noise and vibration, Yorkshire Water to inform residents in the area.
12.9 SOIL & GEOLOGY:	Appraisal: TBC	TBC
12.10 HAZARDOUS MATERIAL STORAGE:	YW PCI highlights: None in solar area.	N/A
12.11 CONSTRUCTION WASTE:	Construction Phase Plan: details arrangements in place for storing and removing waste materials.	Note- Waste Transfer Notes are to be requested and retained for reference.
12.12 TRAFFIC:	Traffic Management Plan: details arrangements in place for logistics and general site access.	N/A
13. QUALITY CONTROL		
13.1 CLIENTS CONTRACTUAL SPECIFICATION FOR QUALITY:	The client has provided their requirements for quality in schedule 2 of the EPC contract. Ivegate shall design the PV system in compliance with: • Health and Safety at Work Act. • Construction, Design and Management Regulations. • Electricity at Work Regulations. • Working at Height Regulations. • HSG47; Avoidance of Dangers from Under Ground Services. • GS6; Avoiding Dangers for Overhead Lines. • The Electricity Supply Regulations. • IEC 62548 – PV Arrays Design Requirements • IEC 62446 Grid connected photovoltaic systems. Minimum requirements for system documentation, commissioning tests and inspection. • IEC 61836 Solar photovoltaic energy systems. Terms, definitions and symbols. • ENA ER G99/3 Recommendations for the Connection of Generating Plant to Public Electricity Suppliers Distribution Systems. • BS 7671 Requirements for Electrical Installations. • BS EN 50380 Datasheet and nameplate information for photovoltaic modules. • BS EN 60439-1 Low-voltage switchgear and control gear assemblies Part 1: Type-tested and partially type-tested assemblies.	

	• BS EN 60891 Procedures for temperature and irradiance corrections to measured I-V characteristics of crystalline silicon photovoltaic devices. • BS EN 60904 Photovoltaic devices. • BS EN 61173 Overvoltage protection for photovoltaic (PV) power generating systems. • BS EN 61215 Crystalline silicon terrestrial photovoltaic (PV) modules. Design qualification and type approval. • BS EN 61345 UV test for photovoltaic (PV) modules. • BS EN 61701 Salt mist corrosion testing of photovoltaic (PV) modules. • BS EN 61724 Photovoltaic system performance monitoring. Guidelines for measurement, data exchange and analysis. • BS EN 61727 Photovoltaic (PV) systems. Characteristics of the utility interface. • BS EN 62093 Balance-of-system components for photovoltaic systems. Design qualification natural environments. • IEC 60904 Photovoltaic devices. • IEC 61727 Photovoltaic (PV) systems. Characteristics of the utility interface. • IEC 61730 Photovoltaic (PV) module safety qualification.
13.2 DOCUMENT CONTROL:	All documents will be kept in their relevant Folder in the company's IT system. The designer and the project manager are responsible for maintaining the project register so that the latest version of a document is recorded and can be accessed. Any superseded document is to be moved to the relevant SS folder for archive requirements, no document is deleted off the system. Project drawings, Calculations and Management Plans are to be saved so that identification and version control can be assured.
13.3 CONTROL OF NON- CONFORMITIES:	Non-Conformities will be recorded and any issue identified will be classified as being either: • Category A: Requires technical solution which have to be sought without delay to the reasonable satisfaction of the engineer, client, TA. • Category B: Deviation which does not affect the design or life cycle of the works, and shall be corrected as reasonably possible once approved by the engineer, client, TA. • Category C: None urgent non-conformity and can be corrected without consultation when appropriate. The process for resolving nonconformities shall be used in conjunction with 5.5 of this plan.
13.4 QUALITY THROUGH DESIGN:	Our client satisfaction, and the protection of their development, is our priority. This is achieved through our shared knowledge and experience designing projects in consultation with our clients and with our understanding of statutory obligations and acceptable good practises. To achieve this we follow the below flowchart:



14. TESTING & COMMISSIONING

The main goals of the commissioning process are:

- Establish a safe operating array and associated switchgear.
- Facilitate the transfer of the project to the Clients asset management.
- Ensure that the control systems meet the requirements of the Clients.
- Ensure that the specification of the system meets the requirements of the DNO acceptance.

- IEC 60364 Low Voltage Verification/ BS7671 Regulations.
- IEC 62446 Requirements for testing grid connected photovoltaic systems
- IEC 62548 Design requirements for photovoltaic systems
- IET Guidance Note 3, Inspection & Testing

Prior to any testing activities Ivegate will consult with relevant parties to make them aware of the testing occurring and notifying that circuits will become live. Permits will be issued, or requested by YW/Downing where appropriate.

14.1 COMMISSIONING GOALS:

14.2 TECHNICAL REFERENCE PUBLICATIONS:

14.3 IMPACT PLANNING:

14.4 PRE TEST CHECKS:	A Quality Assurance Document shall be used. The document serves as a checklist capturing equipment's nameplates, data characteristics and confirms the as-built status of the equipment or system. The checklists ensure that the systems are complete and suitable for testing.
14.5 TESTING SEQUENCE:	All testing on the AC side shall follow the requirements of IEC 60364/BS7671 and shall be sequenced as: • Continuity of protective conductors • Insulation resistance • Polarity • Phase sequence • Functional & Operational tests • Voltage drop In the event of a test indicating a fault, once the fault has been rectified all previous tests shall be repeated in case the fault influenced the result of these tests. All testing on the DC side shall follow the requirements as detailed under Category 1 test regime in IEC 62446: • Continuity of protective conductors (where fitted) • Polarity test • String open circuit voltage test • String circuit current test (short circuit or operational) • Functional tests • Insulation resistance of the DC circuits • Insulation Resistance Test of String Cables and Array.
14.6 COMMISSIONING DOCUMENTATION:	• IEC 62446-1 Inspection Report (For DC circuits) • IEC 62446-1 Array Test Report (For DC Circuits) • IEC 62446-1 Verification Certificate (For DC Circuits) • BS7671:2018 Electrical Installation Certificate (For AC Circuits) • Quality Assurance Report • ENA Form: A3-Series (as required by connection offer)
15. HEALTH & SAFETY FILE	
15.1 COLLECTING INFORMATION:	The Principal Designer for this project shall prepare a suitable health and safety file for handover to the Client. Ivegate shall supply information to the Principal Designer to assist with collating information for the health and safety file.
15.2 CONTENT:	The health and safety file will contain a residual risk assessment for the works. The health and safety file will be accompanied with a suitable operations and maintenance manual, as-built drawings, manufacturers datasheets and warranties, Testing and Commissioning documentation where required.