

UWTSD / SA1 – Plot C5

Construction Methodology Plan

Client: University of Wales Trinity Saint David	Principal Contractor: Kier Construction Conway House St Mellons Business Park Cardiff CF3 OEY
---	--

Contents

1.0	Project Summary	
2.0	Project Information and Constraints	
2.1	Overview - Site Boundaries, Security and Access	
2.2	Ecology and Pollution Control	
2.3	Dealing with Contaminated Land	
2.4	Working Hours	
2.5	Adjacent Buildings and Features	
2.6	Community Engagement and Liaison	
2.7	Public Safety	
2.8	Existing Services	
3.0	Site and Construction Logistics	
3.1	Deliveries off Loading, Lifting and Storage	
3.2	Neighbour and Community Liaison	
3.3	Plant and Machinery	
3.4	Temporary Accommodation and Welfare	
3.5	Site Waste Management Plan	
3.6	Control of Dust and Emissions	
4.0	Construction Environmental Management Plan	
4.1	Control of Noise and Vibration	
4.2	Roles and Responsibilities for Environmental Controls	
5.0	Traffic Management Plan	
6.0	Emergency Contacts	
7.0	Construction Sequencing	Prepared: Kier Construction Western & Wales

UWTSD – SA1

Document No: CMS/HM/001 Rev / A dated: **30th March 2016**

This report describes the anticipated construction programme and the scope of construction works for the scheme. The report will also identify the health, safety and environmental considerations associated with these construction activities and outlines appropriate measures that might be implemented for their mitigation.

1.0 Project Summary

1.1 Location and Description

The construction of the 'Library' and the 'Faculty of Architecture, Computing and Engineering' known as the (FACE 'Flexi' and 'Tech' Building) is located along the outskirts of Swansea town centre adjacent 'Fabian way'. The new facilities will comprise of a Library (floor area 3552m²) and Face Building ('Flexi' floor area 7666m²) and ('Tech' floor area 2443m²). The Library will form part of the Trinity Quarter within Phase (1) of the works.

Along the western boundary is the River Tawe which is divided into two parts by the barrage at Trafalgar Bridge (the Marina and the mouth of the river into the sea). The eastern edge of the site is defined by the access road into the 'Associated British Ports' – ABP off Langdon Road.

The main access to the site will be from Fabian Way. The extent of the site and its proximity is outlined on the plans below. These images identify the sites location relative to Swansea Marine / River Tawe Peninsula - (SA1 South Wales). The 'Face Building' is positioned along the eastern side of the 'dry docks' and 'Tidal Basin'.

SA1 – Plot C5 (Site Logistics Plan)

The full extent of the Site Boundary is indicated on the 'Site Logistics Plans' below.



SA1 – Plot C5 (Site Logistics Plan)

The preferred option for the site set up / welfare facilities is adjacent to the construction access route along 'Kings Road' – reference (Option 1) which is situated in proximity of the northern end of the site boundary. The location will solely depend upon the commencement / start date of the proposed new CITB Building.

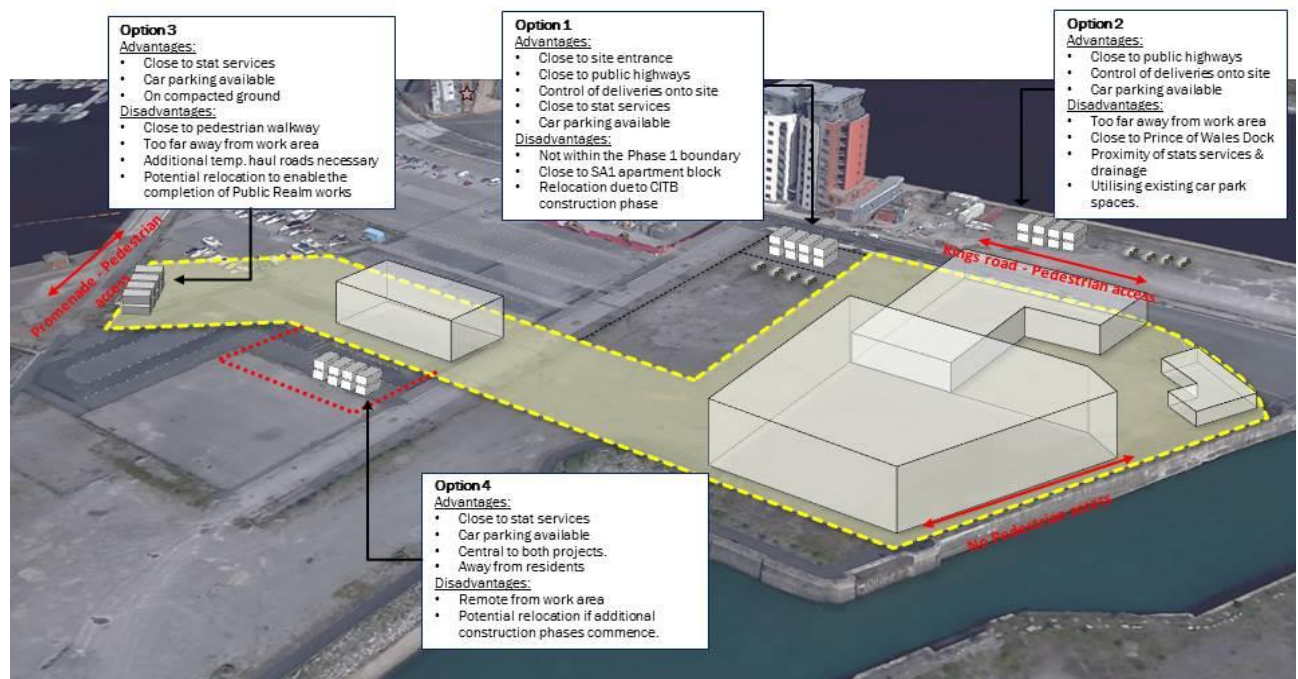
If the CITB Building is planned during the construction periods for the 'FACE' and Library Buildings then Option (4) would be the next preferred location. This will require approval from the Client as the site set up will sit outside of the boundary demarcation line.

It is important to note, that due to the access constraints / restrictions along the eastern side of the 'FACE' Building located adjacent to the dry docks, there will be no provision for pedestrian access linking the existing footpath to 'Kings Road' due to health and safety issues of the construction work activities in close proximity.

Designated pedestrian access will only be permitted on the highway pavements along 'Kings Road' and routes leading to the general public car park areas. The existing foot path linking the promenade walkway to the access pedestrian bridge / barrage situated along the southern end of the Library Building will be unrestricted throughout the construction phases.

The University of Wales Trinity Saint David (UWTSD)

Phase 1 - New faculty Building for Architecture, Computing & Engineering & New Library Building + Public Realm



SITE COMPOUND OPTIONS

Drawing No: N16/04/S01



Traffic and delivery management controls will be a key focus throughout the project duration. There will be a number of concurrent projects in progress, each with its own vehicle entrance gates. The Traffic Management Plan will be further developed throughout the project duration in order to ensure that any resequencing is captured and communicated to the relevant parties - thus ensuring efficient and safe movement / segregation of vehicles and pedestrian traffic throughout the project duration.

The access / delivery routes are influenced by the maximum authorised mass (MAM) weight of vehicle / loads - also known as the Gross Vehicle Weight (GVW) or permissible maximum weight of vehicles. The construction activities will require a combination of vehicle size / types as follows:-

Loads assessed as follows:- Average 7 / 8 deliveries assessed per day

- Two axles having a maximum weight & load of 18 tonnes - **30% assessed** Sundry Deliveries
- Three axles having a maximum weight & load of 26 tonnes - **15% assessed** Concrete Deliveries
- Four axles having a maximum weight & load of 38 tonnes - **20% assessed** Reinforcement / Structural Steel / Dry Lining / Cladding Panel Deliveries
- Five axles having a maximum weight & load of 44 tonnes - **0% assessed** - N/A
- Sundry Loads less than 18 tonnes - **35% assessed**

We have also considered the alternative access route through the 'Associated British Port' (with agreement from the Port) in lieu of accessing the site from 'Kings Road' – the limitation and constraints surrounding the existing bridge construction (vehicle weights / loads) therefore makes this proposal un viable due to the practicalities and also the associated risks surrounding the future maintenance / repair of the bridge structure.

The delivery of materials will be controlled by a 'holding' area off site along Fabian Way.

2.0 Project Information and Constraints

Material / Traffic Management Strategy

We shall appoint a designated 'Logistics Manager', who will be responsible for controlling and managing traffic flows to and from site. Liaising with UWTSD and local residents / businesses on a regular basis on critical traffic movements

We shall adopt the following measures to achieve this:-

- Having a central on-line delivery booking system to avoid congestion along 'Kings Road' and at the main site entrance that can be access by our supply chain remotely:
- Suppliers and subcontractors will be issued with a project route map to pass onto their delivery drivers which will form a significant part of the pre-appointment meeting.
- Create temporary construction vehicle holding areas: where construction vehicles are checked off against the booking system and accepted or rejected. Firstly, this enables vehicles to pull in immediately off the main 'Fabian way' approach road and eliminate vehicle bottle necks ; secondly, by marshalling vehicles in the holding area they are only allowed to leave once our logistics manager informs them it is safe to proceed. Finally drivers will be clearly briefed and directed as to which site to go:
- Radio contact links will be provided and maintained between our logistics manager and the gateman at the holding area to call vehicles into the site on a controlled basis. Specific time slots will be allocated to subcontractors for the use of cranes and hoists, to ensure that the main plant will be utilised efficiently.
- Consolidation of deliveries wherever possible with a 'just in time' delivery system policy in place; and
- Our logistics manager will police the main access routes (in particular Kings Roads), ensuring that they remain clean and clear. This procedure will be regularly audited by Kier site manager for compliance.
- 'Morning Briefings' will be held on a daily basis with all site supervisors to review any concerns / issues relating to health and safety standards and to focus on any improvements for the day's activities between all parties / contractors.
- The site logistics manager will monitor the perimeter boundaries and access roads within proximity of the site twice daily and more frequently on phased construction activities during the sub structure and concrete works as and when required.
- The site logistics manager will ensure that all vehicles are withheld within the site compound and inspected after the vehicle leaves the wheel wash area for final inspection
- Health and Safety standards are maintained by ensuring all supply chain supervisors have a daily review of the work place 'Stop' @2pm, weekly inspections carried out and auditing by the visiting safety advisors on a regular basis for compliance.
- Regular Health, Safety and Welfare Meetings will be held to review systems of work and other issues affecting standards of health and safety.
- The logistic manager will also be proactive to any abnormal loads Gross Vehicle Weight (GVW) or permissible maximum weight – these sequenced deliveries will largely relate to the concrete, structural steel work, metal and pre cast decking / planks and stairs, external roofing and cladding facade systems). Key controls will be ensuring cleanliness, road marshalling unexpected visitor queues and any emergency vehicles. The logistic manager will also be our single point of contact for material delivery communication with UWTSD and local residents / businesses.

The Traffic Management and Logistics Plan will be further developed from the outset to provide additional control measures for material delivery and distribution / offloading throughout the project duration.

Constraints and Challenges inside the boundary of the site



- | | | |
|--|--|--|
| 1. Existing ground conditions (contamination/ obstructions) | 6. Surface water run-off during excavation works (silt bunds necessary to prevent contamination to nearby water) | 10. Construction segregation to separate construction work from the public |
| 2. Existing statutory services | 7. Control of deliveries (waiting/ holding area away from public highways) | 11. Access through site for other phases of work and Library extension |
| 3. Crane over-sailing issues | 8. Possible 1-way traffic delivery routes on-site | 12. Site boundary adjacent to dock wall |
| 4. Groundwater levels (incl. differential settlement/ foundation buoyancy) | 9. Site access point | 13. Site security |
| 5. Contaminated perched water? | | 14. Archaeology findings (old dock walls, etc) |

2.1 Overview of the proposed site set up / compound

In establishing the site set up / compound and its access routes identified on the Site Constraints and Challenges Plan above. The designated construction delivery route for the UWTSD site will commence off 'Fabian Way' and progress along 'Kings Road' to the site entrance gate (G1) – situated within Option 1 or 4 on the site logistic plans. All deliveries will follow the delivery management controls / protocols set out within section 2.0 above and managed by the logistics manager.

Within the compound the temporary site offices will be sited within Plot C5 (see site logistics plan for location of the 'FACE' Building site)

The improvements / upgrading of the existing road junction into the site and the hammerhead arrangements at the end of Kings Road (including associated landscaping works to the permanent pedestrian areas will progress after the completion / handover of the Library and the 'FACE' Building due to risk of damage by follow on construction phases.

2.1.1 Overview of the proposed Main Building & External Works compound

A number of external compound areas will be used to improve the marshalling of incoming deliveries and provide a temporary laydown space for off-loading materials within the site boundary.

All material deliveries will be phased in line with the construction timeline and scheduled to arrive at pre-arranged times. All Large and / or heavy materials will be coordinated within the buildings by the use of mobile cranes and unloaded at designated lifting points.

Materials that arrive in smaller loads will be off-loaded by the use of forklifts and transferred to the designated storage areas. The use of goods hoist to off-load materials to the respective floors will improve the site logistics and aid production of the works.

Consideration of construction transport routes, just in time delivery and vehicle restrictions will be undertaken all construction traffic will receive strict instructions about delivery points and times as previously mentioned. Upon arrival, marshalling control will be in place to ensure prompt turn-around of deliveries and avoid vehicles stacking up on-site. Labour resources will be provided to maintain clean road access routes, along with maintenance of the perimeter site hoarding and fence lines.

Signage will be provided on the approach roads to UWTSD – (Plot C5) warning of site traffic and access and egress routes for all deliveries. It is intended that a temporary dedicated point will be formed for construction vehicle movements into and out of the site

Crossovers of local residents / businesses and construction traffic (pedestrian or vehicular) will be avoided wherever possible. A banksman will accompany all vehicular traffic movements at coordinated crossing points. Through our detailed programme we are able to forecast on a daily basis what events may or may not cause disruption to the day to day running of local businesses. This will provide clarity of planned site activities and will form the basis of our engagement with the UWTSD team for further planning and mitigation if required.

This programme will be used as a live forward planning tool throughout the life of the contract. On a regular basis the project manager will meet with UWTSD to discuss the planned construction activities over the coming fortnight. These discussions will focus on the works, site deliveries, noisy operations, upcoming UWTSD events, down-tool days, decants, snagging and handover of completed areas.

By discussing operations in detail with UWTSD, any events that were not originally identified within the programme can be incorporated and worked around. In most instances the particular work item that could cause disruption can be reprogrammed at an alternative time, or measures can be put in place to mitigate the nuisance.

2.1.2 Construction and demarcation of contractor's compound - Temporary hoarding and fencing complete with signage and lighting will be erected around all areas of works to protect the public and mitigate disruption. Controlled vehicle access gates in-to / out - of a materials construction storage area / compound will be provided and emergency access routes incorporated into the hoarding if required. The compound will house our welfare facilities, Site Offices, Meeting Room, Canteen, and Toilet Blocks. These will be placed to within our site boundary as detailed on the site logistics plan.

2.1.3 Unloading area - All deliveries will be distributed and stored at the work face as soon as possible to avoid congesting our access routes ready for the unloading and distribution either by vertical hoist or mobile cranes

2.1.4 Separation of the construction work - Temporary hoarding and fencing complete with signage will be erected around the perimeter of the site – known as ‘Plot C5’.

2.1.5 Fire escape routes

All fire escape or emergency service access routes to the site have been identified and recorded on the site logistic plan.

2.1.6 Approach to mitigating disruption to local residents / businesses and visitors as a result of the Construction Work

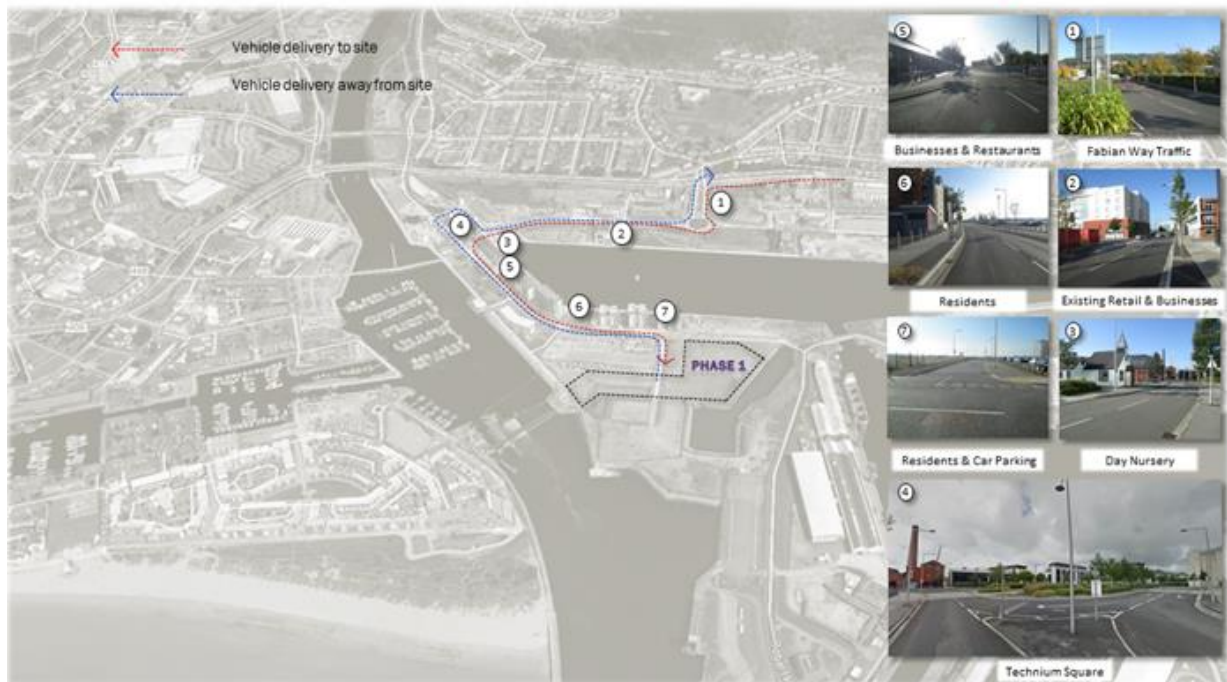
We will carefully plan the phasing of the external areas and the coordination of access and working spaces ensuring adequate separation of site work and visitor / pedestrian routes is not compromised at any stage of the works.

Regular meetings with UWTSD will enable coordination of the construction and UWTSD operations through, detailed phasing plans; subject to revision should circumstances change. We will make our sub-contractors aware of the restricted working conditions and a confined traffic management plan will be put in place (by Kier).

Specific and detailed safety and security procedures for the construction works are detailed below:-

Separation measure	Mitigation Measures
Dedicated Site Access	(1) Set-up a separate dedicated access for construction traffic (where the site permits). (2) Avoid wherever possible crossover points for construction traffic (pedestrian or vehicular).
Site Fencing	(3) Erect Temporary hoarding and fencing complete with signage around the site set up / welfare facilities in order to protect the site personnel and visitors (4) Provide Temporary fencing / chapter 8 barriers (including signage) adjacent all exposed trenches
Temporary Internal hoarding and demarcation	(5) Temporary hoarding to provide site security and safe protection to the general public walking the perimeter footpath adjacent to the construction work areas.
Define work areas and access to certain times	(6) Detail sequence plans will be produced in advance of the enabling works / perimeter hoarding commencing to coordinate safe access to the existing footpaths which surrounds the site.
Stop access to certain areas	(7) Close down sections of external footpaths to enable the progression of the external spine footpath. By closing a temporary footpath after an alternative access is in place we could reduce the number of phases, limiting the overall disruption.
Implementation of restrictions	(8) Restrict deliveries during peak periods (8.30am – 9.30am and 4.30pm – 5.30pm)

Key constraints accessing the site



Project Information and Constraints

The Construction Methodology is based upon the utilisation of 'Fabian Way' vehicular access for all construction traffic. The method statement that follows contains details of the proposed routing and frequency / timing of vehicle movement.

Site Boundaries, Security and Access

The proposed site comprises (see typical office / welfare set up):-



The site office and welfare will be accessed from Kings Road passing through the gate / security office located on the site boundary (Option 1 or 4). Pedestrian walkway from the gate / security hut will be formed by a chain link fence leading into the office compound and designated as a 'safe zone'. The chain link fence incorporate a pedestrian entrance gate leading onto the site compound

Chain Link Fence – See Site Logistics Plan designated positions

Heras Fencing will be used adjacent to the for contractor's site material compound



The designated walkways are depicted on the site logistics plan.

Vehicle and delivery access will be gained off Kings Road through 'Gate 1'. The site access will be manned and controlled by Kier Construction. Only authorised and pre-arranged deliveries (**24 Hour Notice**) will be permitted into the campus site. Once through this initial control, visitors / contractors and deliveries will be directed to the Kier Construction Site entrance (Gate 1) where similar controls will be in place.

Staff and Sub Contractors parking will be located within the confines of the site (see site logistics plan)

Vehicle access to the University Campus

Access to the site will require the driver to report to Kier Construction gate / security man on the main site (Options 1 or 4) before access is granted.

2.2 Ecology and Pollution Control and working with the Strategic Environmental frame work.

Prior to any work commencing on the project, a further site survey will have been undertaken to identify for any protected species of wildlife (no visible signs of wildlife has been identified). The site 'Plot C5' has undertaken site investigations in order to identify the scope of remediation and removal of any existing obstructions planned during the enabling works period. The areas will be closely monitored / managed throughout the project duration.

Support will also be provided by Kier dedicated Environmental Advisor (Chris Grimes) who will be involved in the early stages of the project to ensure that good environmental practices are adopted at the beginning and maintained throughout. Chris will assist with the completion of the site specific Environmental Impacts and Aspects Register.

Kier Construction recognises the importance of 'The University Campus Strategic Environmental Management Plan' SEMP.

The construction and procurement works undertaken on the University Campus will take cognisance of the environmental management aims and the SEMP overarching framework for the new works. Whilst the SEMP is a live document, Kier Construction will need to add relevant information as and when, such as key contacts and processes that underpin the procedures and process identified.

Kier Construction will include the following processes:-

- Developing and tailoring our Site Specific environmental management plan.
- Identifying key actions on our Impacts and aspects register
- Communicating key roles and responsibilities
- Developing induction, training and methodology in line with the framework the SEMO Sets out.
- Monitor report and record.

As part of the site induction, Kier Construction staff and supply chain sub-contractors will be instructed to abide by any specific controls set out by Kier Construction.

Kier Construction will develop and work with SEMP by undertaking the following;

- Align and link our Emergency Response Procedures and advise neighbouring properties 'if relevant'
- Aligning the works to any ecological timing and constraints where this is appropriate for the College Campus
- Prepare the Construction Management Plan, monitor and manage its continued relevance.
- Prepare monitor and manage the Site Specific Environmental Management Plan with site specifics impacts and aspects assessment.
- Prepare, monitor and manage the site Specific Site Waste Management Plan.

The forms used in the SEMP will be adopted by Kier Construction and become part of the Construction Phase Health and Safety Plan – reference the SEMP Environmental Incident Reporting.

Precautions will be taken when excavating to ensure silts are not allowed to migrate to any watercourse within the site boundary (in particular the marine docks). A method statement will be produced to include a dewatering solution for excavating of drainage and substructure ground works. This will also be closely developed with the groundworks specialist.

Cut off ditches or geotextile silt fences will be installed as and when deemed necessary around excavations in order to prevent migration of silts into watercourses. A method statement will be produced by our specialist ground work contractor for specific dewatering solutions.

The silt buster (or similar precautionary systems) will be used to filter out any contaminants from the ground / excavation activities to a suitable level and directed to a settlement area within the compound prior to any controlled or permissible discharge. Contaminants that are filtered will be removed from site (with necessary transfer documentations and licences) by our specialist ground work contractor.

All earth moving plant will be controlled to reduce the risk of construction silt combining with any site run off

Silt Buster



To minimise the risk of contamination from spills of oil, fuels and chemicals, they will be stored within a safe / designated area of the contractors compound (see site logistics plan). Operatives will be trained in the refuelling of vehicles and attendance to spillage and spill procedures. These designated areas will be away from any draining points. Suitable bunds and drip trays will be used to collect material and prevent ground contamination. Fuel oil will be stored within a bund fuel bowser which can hold 110% of its capacity. Chemicals will be stored in a designated COSHH storage area.

A spill kit will be located within specific areas on the three sites and these areas clearly marked. All operatives will be made aware of this and other site specific controls at induction stage and within subcontract orders.

An environmental logistics plan will be produced to identify any contaminated ground which requires removal by the specialist ground work contractor. This will be communicated with all site operatives during the induction process.

In the event of a spillage, an emergency spill response will be adhered to as set out within Kier Construction Environmental Plan procedures.

The Environmental Protection Act 1990 makes reference to controlling the entry of polluting matter and effluents into any place which may ultimately affect the water course. Management plans will be produced to control any accidental spillages entering into the water course. All spillages of any such materials or liquids will be mopped up and placed within a designated skip, to be removed from site by a registered waste disposal company.

Should accidentally discharge of any liquid, such as diesel or heating oil, on to the site – the local water authority will be advised immediately.

Recovery plan to minimise the pollution will be by skimming off any affected land with an excavator and placing the contaminated earth / fill into the designated skip and remove from the site as soon as possible to a site which is registered to accept that type of pollutant.

We shall comply with all statutory legislations and not limitative to the following:-

The Environmental Protection Act 1990

The Resources Act 1991 – Section 85 and 88

The Water Industries Act 1991

2.3 Dealing with Contaminated Land / Arising material.

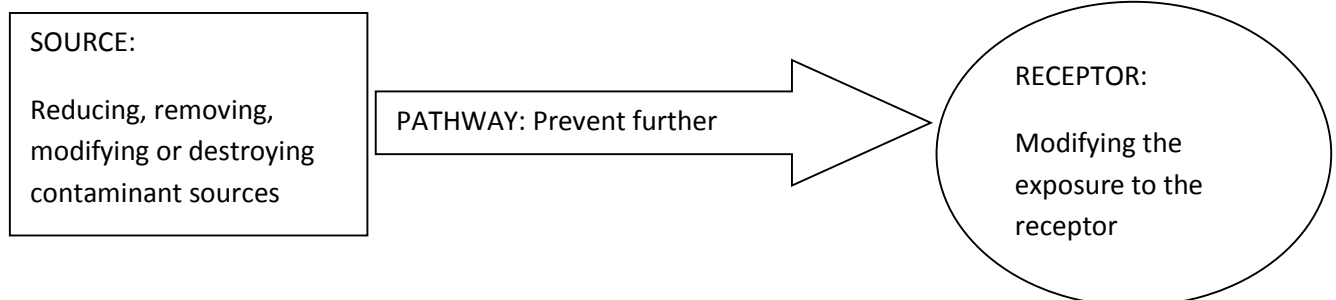
Although the site has been remediated pre construction works - there may be hot spots of contaminated land still evident. This will be closely monitored by Kier Construction throughout the sub structure, externals and landscaping works.

Further site investigations have taken place during the recent months (January / February 2016) to finalise the scope and develop the design for the sub structure / piling works.

The management of findings and material will fall in line with the established SEMP and procedures therein.

During excavation works, all method statements will cover the possibilities of discovering unknown contamination and detail all procedures for dealing with it by the specialist ground worker as and when identified.

Risk reduction method will be put into place by breaking the pollutant links as follows:-



A material management plan will be further developed to demonstrate an appropriate methodology for removing, storing and treating contaminated material if 'hot spots' are discovered.

If unexpected contamination is encountered the appropriate authority will be notified in accordance with the conditions set out as part of the planning consent. All works will stop, and the management / remediation plan amended for approval in advance of any works re commencing within these areas.

Areas beneath existing ground bearing slabs will not be assessed for contamination until the removal of the slabs is complete. This process will need to be managed in accordance with the Structural Engineers Specifications, which will include the process for testing, disposal and removal to the satisfaction of the Natural Resource Wales.

Disposal of all surplus excavated waste materials arising from site, allow for disposal at appropriate licensed landfill site where material is contaminated. Where appropriate the material will be cleaned up and re-use on site to minimise traffic management.

2.4 Working Hours

Normal site working hours will be between the hours of 0700 am and 1800 pm Monday to Friday and 0800 am and 1300 pm on Saturday and Sundays (Weekends by agreement of Kier Construction). It is important to note, that all scheduled 'HGV' deliveries will not be permitted onto the site during the peak periods (8.30am – 9.30am and 4.30pm – 5.30pm) in order to reduce any traffic constraints – See further information contained within **Section 3.0, 3.1, 3.2 and 4.2**).

2.5 Adjacent buildings and features

During the construction activities, the adjacent buildings along 'Kings Road' and within the vicinity of the works will be closely monitored on a regular basis as part of our method statement and site logistics management and traffic plan for the project.

Fabian Way and Kings Road will be used as the main feeder road to the site which may cause disruption to road users particularly during the rush hour. This will be closely monitored throughout the works and restrictions on delivery times will be introduced as a consequence of these findings. Kier Construction will regularly liaise with the neighbouring properties in order to minimise any such disruption.

Kier Construction will work collaboratively with neighbours and work in line with the Traffic Management Plan. The plan will be reviewed on a regular basis to ensure that we meet the traffic and delivery challenges demanded on a project of this size and magnitude.

Local Businesses: There are a number of local residents and businesses located in close proximity to the works along Kings Road

2.6 Community Engagement and Liaison

As part of the project it is important to identify the key stake-holders. As previously mentioned all local businesses and residents will be kept informed and a constant dialogue upheld to ensure all queries and concerns are addressed and resolved promptly.

Further information on the 'Community Engagement' will be contained within the 'Community Engagement Plan'.

The Kier Construction community engagement officer (Carla Jones) has been assigned to the project to provide links with the local community, schools & colleges and identify employment opportunities for the local people. The project will give opportunities for apprenticeships and work experience.

Targets: will be to achieve 52 weeks / £1m

1300 person weeks

10 Trainee's and / or apprentices per week / £1m

Advertise 25% opportunities on Sell 2 Wales

>85% Welsh Business > 50% local SMEs

500 in Kind Hours

The site will be registered with the Considerate Constructors Scheme.



2.7 Public Safety

A great emphasise will be placed on public safety as with all projects undertaken by Kier Construction. A number of procedures will be implemented to ensure the safety of the general public is not compromised at any time:

- Maintain a fully enclosed site to the University Campus – see site logistics plan
- Good housekeeping to be maintained outside the site boundary, all adjacent roads will be inspected on a daily basis and cleaned as and when required.
- Deliveries to be controlled effectively to ensure minimal disruption to local residents and the general public.
- Visitor's inductions to be undertaken.
- Timed deliveries to minimise gridlock on 'Kings Road' and co-ordinated with the Traffic Management Plan.
- Dust, noise and vibration monitoring and mitigation to take place throughout the project.
- Complaint logging and resolution to be in place to ensure any comments are dealt with promptly.
- Good informative signage to identify all hazards on site to the public and operatives

General Site Rules

1. The site is a non-smoking site; There will be a designated smoking area assigned within the main compound set up
2. Sub-contractors to provide a quality control plan within their method statement prior to commencing 'the works'
3. All inductions will require signature and identification prior to allowing personnel onto site
4. All operatives to be CSCS qualified
5. All sub-contractors are responsible for protecting their materials and works from others
6. All contractors on site are responsible to segregate their waste into the skips
7. Method Statements and Risk Assessments are required minimum of 1 week in advance of their works commencing; no works will commence without approval of the method statement / risk assessment
8. Material delivery to site is on a time required basis unless specifically agreed otherwise i.e. no materials to be stored in excess of one week ahead of planned works commencing unless agreed by Kier Construction
9. No parking permitted on adjacent highways and / or within the neighbouring area – designated parking provided the main construction compound – see site logistics plan
10. All contractors must comply with the WRAP and BREEAM requirements
11. Toolbox talks to be carried out by the sub-contractors supervisors as works proceed on site; All records of training to be issued to Kier Construction on a weekly basis
12. Local labour to be employed wherever possible – see community engagement plan for detail
13. Daily labour records to be issued to Kier Construction on a weekly basis (information to include labour and plant resource levels, material deliveries and weather records)
14. Minimum PPE requirements are listed as follows:-
 - i. Hi vis
 - ii. Helmet
 - iii. Steel toecap & sole boots
 - iv. Gloves-appropriate to task being undertaken

v. Safety Glasses

15. O&M information to be issued as works proceed and are completed. All information to be issued a minimum of 4 weeks in advance of project completion.
16. Material storage requirements on site are to be agreed with Kier Construction prior to works commencing and approval of the method statements
17. Permits to work will be operational and will include the following:-
See Kier Construction 'Minimum Health and Safety Standards'
 - i. Hot works
 - ii. Confined spaces
 - iii. Permit to dig
18. All operatives on site will require CSCS qualification, PASMA, CPCS etc.
19. All CSCS cards are to be presented to Kier Construction staff at site induction for acceptance
20. Site inductions will be planned on a daily basis
21. All site electrical equipment must have current PAT certification
22. Interface with the general public to be polite and courteous at all times
23. All materials to be sustainable & locally source where possible with support documentation issued to Kier Construction to support the BREEAM credit.
24. All visitors must report to the site office

2.8 Existing Services

Identification and protection of buried services is extremely important in particular during the groundwork phase. A further survey will be undertaken of the ground to identify the existing services. A service master plan will then be produced identifying all services including existing and new. During the works a 'permit to dig' will be in place where site management will review the dig position and any relevant survey information.

The existing utility plans have been reviewed and some services have been identified (BT chambers and Service conduits adjacent to the existing dock wall). Additional surveys in the form of 'Radar' inspections are necessary to identify the locations of the existing slab foundations to define the scope for removal of obstructions.

Gas – No Gas Services have been identified on the site (Plot C5).

Water – No Water Supplies have been identified on the site (Plot C5).

Electricity – No Gas Services have been identified on the site (Plot C5).

Communication Cables – underground cables and conduits have been identified on both of the sites (Plot C5).

Drainage – No Drainage Services have been identified on the site (Plot C5).

Existing Dock Wall – The existing dock wall has been located 'in part'. This information is now being coordinated with the ground investigation reports in order to develop the design strategy for the sub structure elements of the works. Additional GPS / Radar surveys will need to be under taken to identify the definitive scope of works for the removal and / or crushing of the existing slab foundation obstructions in advance of the piling operations commencing.

3.0 Site and construction Logistics

During the construction of the 'FACE' and Library Buildings, Kier Construction will employ a dedicated Logistics manager who will be responsible for controlling all material delivery and movement of vehicles in conjunction with the gate man. Entry on to the site will be controlled by a full time gateman (located adjacent Gate 1). The gateman will direct vehicles, assist with driver related inductions and ensure that vehicles are held in a dedicated waiting area when necessary (see site logistics plan)

The Kier Construction Office and Welfare Set Up will be contained within a designated 'safe' area. This controlled environment will not require initial PPE and no work will take place within these restricted / controlled zones. All personnel / visitors arriving, leaving or just visiting can do so safely at all times. The compound will be segregated from the main working area by a combination of Heras and chain link fencing. All authorised persons will be granted a security tag for gaining access onto the construction site through the security turn-style, following a site safety induction by Kier Construction.

3.1 Deliveries, Offloading, Lifting and Storage

All deliveries will be co-ordinated and pre-booked giving 24hrs notice. This key element of planning will be implemented during the enabling works and throughout the project duration to avoid gridlock situations occurring at critical times along Kings Road. These procedures will reduce traffic flow disruption to the adjacent properties (residential and commercial units) along 'Kings Road'. The gate man will be informed of all pre-booked deliveries to aid traffic movement at all times.

Two way communication systems will be used by Kier Construction (gateman) to keep in constant communication with all relevant parties, in particular the banks man and sub-contractors site supervisors for offloading and distributing of materials.

Reversing is only permitted under guidance from a trained banksman. The site compound is limitative and will require strict traffic management controls by Kier Construction – Vehicles will access the site off Kings Road through the northern side of the site through Gate 1

All delivery drivers will be required to sign in and be made aware of the site rules, given a delivery / drivers induction and directed to the correct area of the site. All delivery drivers will require appropriate PPE. The site compound will provide a waiting area to ensure that the adjacent roads are not congested.

All offloading will be undertaken in the designated offloading bay area (see site logistics plan) If access is required onto the trailer then a fall prevention system must be in place. Any mechanical offloading example; crane's, hi-ab, forklift and / or moffit's will only be permitted upon receiving a risk assessment and method statement. Any slinger/signaller duties must be undertaken by a competent certified person.

All lifting operations will be subject to an approved lifting plan (Contract Lifts Only) devised by a competent person and approved by Kier Construction. This will include all crane lifts and fork lift operations. Any lifts undertaken outside of the lifting plan will be subject to a 'revised' method statement and risk assessment. All lifting equipment will require six / twelve monthly thorough examinations.

Storage of materials is only permitted within the designated areas (see site logistics plan) and subsequently agreed with Kier site management. All materials **must** be stored neatly and stacked appropriately and accessible when required for use due to the adjacent highway and the marine'.

Waste materials will also be stored within a designated area in line with the site waste management plan. Hazardous materials will be stored in lockable skips. Materials will be segregated in line with our strict targets for this scheme to comply with BREEAM requirements. Chemicals will be located in designated storage areas and gas bottles in suitable cages away from site accommodation and buildings.

3.2 Neighbour and Community Liaison

The Considerate Constructors Scheme highlights the importance of considering the needs of local people, businesses and public. Consultation will be carried out regularly, to ensure these objectives are achieved. Where possible all neighbouring occupiers will be contacted by the Project Manager to explain the activities to be undertaken, the duration of the works and the working hours required. The Project Manager will be the main point of contact along with the community liaison officer (Carla Jones). Communication with UWTSD / neighbours and adjacent commercial properties will also be notified by the use of newsletters, notice boards and websites. Where relevant, neighbours will be specifically informed about any abnormal work or road closures proposed. A complaints procedure will be implemented to log and respond to issues raised by neighbours, or a member of the public. Where possible, measures will be put in place to avoid recurrence of the complaint.

3.3 Plant and Machinery

Deliveries of plant will take place on a hard standing area and will require the presence of a banks man throughout the offloading procedure. All plant and machinery will be subject to weekly inspections by the operator. Any lifting equipment will require up to date thorough examinations. Upon delivery - all plant and machinery will require to have a pre-use inspection undertaken by the competent operator.

Prior to the commencement of works on the University Campus, it is imperative that all risks are identified and the risk register updated throughout the project.

3.4 Temporary Accommodation and Welfare

The site offices and welfare facilities will be housed within the southern end of the site. This area will be fully segregated from all construction activities. This will act as a safe zone and therefore operate as a non PPE area.

The welfare facilities will comprise of a toilet block, canteen and shower facilities. Cleaning of these facilities will be undertaken twice a day and regular inspections taking place to ensure standards are maintained at all times.

The site compound and site entrance will be controlled by a turn-style as shown on the site logistics plan adjacent to the office set up. Each operative will be issued with a pass card after they have received the site specific health and safety induction. The card will allow the operative access as well as allowing Kier Construction to be aware of who is on site. All operatives will be required to hold a CSCS Card and have the necessary documentation to demonstrate their training and competence.



[100% CSCS Compliant](#)

Access to welfare facilities will be via a segregated route and not be affected by any of the ongoing construction works. Access from the welfare and office compound to the construction site will be via a designated pedestrian route (chain link fence - image 2). This is highlighted on our logistics plan. This route will be clearly marked with appropriate signage and have appropriate pedestrian crossing points. As the works progress this route may change, but at all times the pedestrian and site vehicular traffic segregation will be in place at all times.

3.5 Site Waste Management Plan

Procedures will be developed to ensure compliance with Kiers Environmental Plan in-line with statutory obligations and good practice requirements for waste management.

Within the confines of the site there will be a specific waste segregation area set up. This area will be completely enclosed with access only granted to authorised persons (approved operatives, forklift driver and skip lorry drivers).

The waste compound will have an appropriate number of skips in order to segregate as much waste as possible to reach the target of 95% of waste diverted from landfill.

All targets for waste management will be outlined in the site waste management plan (SWMP). The waste management contractor will be selected dependent on their recycling figures and service offered. The Kier Construction environmental advisor (Chris Grimes) will audit all waste management and ensure good practice is maintained at all times as an independent adviser to the site team.

On site we will use wheelie bins to provide adequate waste management and collecting facilities.

Our waste management and targets will be monitored to meet the strict requirements set out in BREEAM process for this scheme.

The waste management strategy will be formulated by the business stream environmental advisor alongside the site team in advance of project commencement. A SWMP will be devised and implemented across the site, along with smart / smarter waste plans for disposal of such waste.

The strategy will detail where the waste goes, which wastes can be reused as well as cost offsetting the waste against the project in both financial and environmental terms.

A waste management Licence will be implemented for all deposited, recover or dispose of controlled waste. Waste specialist carrier will be registered with the 'Waste Regulation Authority' for compliance with Swansea County Council and notification given to the 'Waste Disposal Officer' of the proposed commencement date.

3.6 Control of Dust, Emissions and Odours Introduction

Scheme to be compliant for discharging planning condition 15 – reference 2015/1581t

The mitigation measures in respect of air quality, noise and vibration identified within the 'Environmental Statement Addendum - 2015' will be developed into detailed development proposals for both schemes in respect of the University of Wales Trinity Saint David owned plots highlighted on drawing no. 70183_PL003 (known as Plot C5).

4.0 Construction Environmental Management Plan

In accordance with good working practices, the principles of the "best practicable means" (BPM), as defined in the Control of Pollution Act (1974) will be used to reduce noise and vibration emissions throughout the construction periods. This will incorporate the use of measures to control noise and vibration that do not unreasonably inhibit the work, and the use of working methods that result in minimum effects compatible with normal working practices.

Noise control measures consistent with good working practices will be implemented during the construction phase. Noise and vibration control measures will be implemented within a Construction Environmental Management Plan (CEMP).

Throughout the duration of the project, the minimisation of dust will be controlled by the following preventative measures:-

- Water Damping Extraction of dust from source where possible
- Compacted access routes from the entrance Gate (1) and to site traffic areas. Wheel-wash to prevent dust being taken out onto the public highway.
- Cover waste skips.

4.1 Control of Noise and Vibration

Mitigation of nuisance will be managed by the following control measures:-

- Choice of methodologies to minimise generation of noise, vibration and dust, for example the use of cutting rather than breaking in order to reduce the transfer of vibration.
- Setting of 'Action Levels' for noise and vibration.
- Routine monitoring of noise, vibration and dust at the site boundary and sensitive receptors.
- Use of hoardings for as long as practicable to provide acoustic screening.
- Requirement for engines to be switched off on-site when not in use, use of quieter plant, regular plant maintenance, screening of plant (if appropriate).
- Spraying of areas with water to dampen down dust when conditions dictate.
- Effective road sweeping facilities to be provided and used as necessary.
- Use of a road sweeper whenever the need for road cleaning arises;

As well as being a major hazard for site operative's noise can also be an annoyance for neighbours and disturb local wildlife. Due to the site being in close proximity to local residents, it is important that noise is monitored and reduced as much as possible.

Vibration will also be monitored and steps taken to reduce such activities.

The following steps will be considered:

- Careful selection of equipment
- Use of noise control equipment
- Locate noisy operation as far from receptors as possible
- Maintain all plant and machinery

Control of noise and vibration will form part of our site wide environmental plan.

Control Measures Regular workshops and presentations will be programmed with project stakeholders during the second stage and again during construction. Separate, more detailed workshops and presentations will be held with our neighbouring residents and businesses to keep them fully up-to-date with activities to ensure a high level of communication is maintained.

The project presents us with a number of challenges not just inside our site boundary but also outside. Local enforcement (HSE, EHO, NRW) will be contacted to inform them of our approach. Any high risks operations will be notified in good time to ensure local disruption is minimised at all times.

The **Project Manager** shall ensure that appropriate measures are implemented to protect any trees and hedgerows that are required to be protected as part of the development in accordance with planning conditions and / or tree preservation orders.

Any protected species on site shall be notified to the **Contracts Manager** and the **Group Technical Adviser (Chris Grimes)**, who shall ensure that appropriate measures are implemented and that the appropriate authorities are notified.

In the event of any such findings, all works within these immediate areas will cease until the relevant authorities / personnel have been notified and a remediation and / or preventative plan implemented for dealing with such matters.

Monitoring and Record Keeping

Tree protection measures will not be applicable on this scheme.

4.2 Roles and Responsibilities – Environmental Controls

The roles and responsibilities for the personnel who could affect the environmental and energy management of the project are summarised as follows:

POSITION	ROLES & RESPONSIBILITIES
Contracts Manager	- Responsible to the Operations Director for the environmental and energy performance of the project and the site. - Provide adequate resources (personnel, financial and technological) to ensure effective development, implementation and review of the Project Environmental and energy Plan and compliance with all applicable environmental and energy legal and contractual requirements. - Establish and maintaining site environmental and energy operational controls, procedures, monitoring and reporting systems. - Ensure that all work is conducted with the minimum of risk to the environment and with a view to improving energy performance. - Ensure that all staff is trained and competent to discharge their environmental and energy duties. - Establish, as appropriate, regular consultation with neighbours on environmental and energy matters, ensuring that notifications are made to neighbours when the works may create a nuisance. - Ensure that site environmental and energy meetings are recorded with staff, clients and subcontractors as and when required. - Ensuing that environmental and energy inspections are conducted at the required intervals.
Kier Group Tech. Services Project / Site Manager	Responsible to the Board of Directors for ensuring that the Sustainability Management System (SMS) is developed, implemented and maintained. - Maintenance of the SMS, including Procedures, Registers and Forms as appropriate. - Point of contact for all environmental and energy related matters relevant to the development. - Review and assessment of the performance of all major subcontractors.

POSITION	ROLES & RESPONSIBILITIES
	- Undertake management of the environmental and energy audits of the project and site. - Assist in the identification and delivery of training needs.
Environment & Energy Management System Adviser (Chris Grimes)	- Provide guidance on the significance of environmental and energy performance. - Provide guidance on objectives, targets and management programmes for each significant environmental and / or energy related aspects. - Provide guidance to employees regarding the SMS. - Train staff with respect to the SMS as detailed by the management representative. - Ensure information relating to performance indicators is collected as required by the management representative. - Undertake or assist with internal audits as instructed by the management representative. - Provide assistance as required to management, including data collection. - Ensure that employees are following their documented SMS work instructions
Project / Site Managers and Supervisory Staff	Responsible to the Construction Manager for the performance of the project, and site, including the maintenance of site controls, procedures, monitoring and reporting systems. Developing, implementing and reviewing the Project Environmental & Energy Plan. Ensure all employees and subcontractors are aware of their responsibilities and fully comply with the requirements of Kier Construction SMS and the Project Environmental and Energy Plan. Ensure all environmental and energy regulations, codes of practice and contractual requirements are understood and observed. Co-ordinating Environmental and Energy matters on site. Ensure supervisors and operatives are adequately trained and properly instructed and that no person commences work unless he has received appropriate induction training. Promote and maintain a safe and tidy working environment. Ensure that subcontractors work in accordance with agreed procedures and working methods. Undertake routine inspections of the site. Ensure all accidents and incidents, including spillages, are investigated and reported to the Construction Manager and the 'Environmental Adviser' (Jade Hunt).
All staff	All staff will have a responsibility for their own environmental and energy performance and the impact that they have on Kier performance. Undertake all activities in accordance with the agreed procedures and working methods. Know who to contact regarding environmental and energy matters. Report any activity that has resulted, or has the potential to result, in an environmental incident or deviation from expected energy use. Attend environmental and energy training as required.

Noxious and Invasive Weeds

There is no history of knotweed on the site and the designated areas have been remediated and / or subsequently filled in advance of the enabling works commencing. Kier Construction will maintain a watching brief from all invasive species, and will report any issues through the correct channels and deal with any findings as per the Environment Agencies Code of Practice.

Habitat Surveys

There is no evidence of any habitat presence on the site due to the historic nature of the site and that the existing land (Plot C5) comprises of made up fill material to achieve the current formation / ground levels. We therefore do not envisage an ecologist inspection / survey to be undertaken as part of the pre-commencement planning conditions.

Ground Remediation

The geotechnical site investigation reports and borehole investigations have taken place during January / February 2016 (JUBB Ground Engineering Services Proposals dated the 15th December 2016 reference JUBB - GES) and will be used to identify the extent of ground contamination and soil remediation required to the existing site and design development. Areas beneath existing ground bearing slabs will not be assessed for contamination until demolition and removal of the slabs is complete. This process will need to be managed in accordance with the structural engineer's specifications, which will include the process for testing, disposal and removal to the satisfaction of the Natural Resource Wales.

Control Measures

Whilst Japanese Knotweed and invasive weeds are not present on site - A specialist contractor shall be employed to implement control measures if treatment and removal of any such species is found later to develop on the site.

Method statements shall be obtained from the specialist contractor prior to any works commencing.

All wastes generated from the activities shall be collected and disposed of in accordance with Environment Agency guidance criteria.

Monitoring and Record Keeping

COSHH data sheets shall be obtained for any substances utilised in the extermination of Japanese Knotweed or any other noxious or invasive weeds if present on site.

Vermin Control

Control Measures

To ensure vermin does not become an issue on the site, all contractors working on site shall be expected to maintain a high standard of housekeeping.

In all instances, where vermin is identified / observed on site, specialist contractors shall be appointed to deal with any such problem.

Method statements shall be obtained from the specialist contractor in advance of any works commencing.

All wastes generated from the vermin control activities shall be collected and deposited in specific waste collection skips.

Monitoring and Record Keeping

Checks shall be undertaken to ensure that waste management duty of care is adhered to.

COSHH data sheets shall be obtained for any substances utilised in the extermination of the vermin.

Induction Training

Prior to commencing work on the project, all staff shall receive an induction training that will include the following environmental information as a minimum:

- Roles and responsibilities, and contact details
- Environmental & Energy Policy
- Environmental & Energy Controls
- Emergency Response Plans
- Incident reporting

Environmental & Energy Awareness

Environmental and Energy efficiency awareness training shall be provided. The **Project / Site Manager** is responsible for ensuring that all site personnel, including subcontractors receive awareness training as part of the site induction process.

Specific Environmental & Energy Training

Specific environmental and energy training shall be provided as necessary to the appropriate staff with specific responsibilities and roles.

Internal Communication

Effective internal communication of relevant issues pertaining to the project shall be achieved through:

- Routine foreman's meetings
- Monthly management meetings, with environmental and energy management as an agenda item.
- 'Tool Box' talks focusing on environmental and energy management awareness and other related issues for all site staff.
- Site / location notice boards, on which such items such as the Environmental & Energy Policy and Kier Construction Newsletters.
- Formal memos and notices issued to staff as required detailing any changes to site procedures and methods.

External Communication

Receiving and Recording Complaints

In the event that an environmental complaint being received the **Project / Site Manager** shall document and record the details of the complaint. A separate sheet shall be used for each source of complaint unless the complaint is the same or very similar in nature.

The **Project / Site Manager** shall communicate the complaint to the:

- Contracts Manager (Nigel Phillips)
- Group Technical Adviser (Chris Grimes)

Responding to Complaints

The **Project / Site Manager** shall ensure that an investigation into the complaint and if appropriate arrange for corrective action to be taken to rectify the situation and undertake preventive action to avoid future occurrence of the complaint. The Complainant shall be advised where possible of the results of the investigation and the

nature of any corrective action being taken. The complainant shall also be advised if the investigation identifies that no corrective action is considered necessary.

The **Contracts Manager**, with the assistance of the **Group Technical Adviser**, shall formulate the responsive action to remedy the complaint and shall record the remedial actions in the lower section of the appropriate Complaints Form. The details entered should include the actions to be taken, the person responsible for taking the action and the time-scale of implementation.

Public Liaison

Local residents and other interested parties shall be kept fully informed of all current and planned activities that may have a direct impact upon them. This shall be undertaken in accordance with the Considerate Constructors Scheme through:

- Routine residents liaison meetings
- Provision and regular update of information boards
- Encouraging feedback and communication from interested parties

Emergency Response Plan

An Emergency Response Plan for the site will be developed. All contractors working on site shall be made aware of the requirements of the emergency response plan at their site safety induction. The **Project / Site Manager** shall ensure that the emergency response plan is routinely tested.

5.0 Traffic management Plan

The management of this process has progressed through the initial stages of the preconstruction phase to minimise disruption and congestion.

The arrival and deliveries of personnel and materials will need to be planned and managed carefully and communicated on a regular basis to the neighbouring properties / businesses. Kier Construction will hold regular

logistics meetings with the relevant parties as and when required to communicate key work sequences and critical scheduled deliveries such as steel work, concrete pours etc.

Kier recognise the Peak traffic flows in the area are generally between the hours of 08.00 and 09.30 in the morning and 16.30 and 17.45 in the afternoon. Deliveries to site will be managed and timed to avoid these key times where practicable.

Deliveries to site will be managed in accordance with our delivery procedure plan. This procedure and site directions will be communicated to our supply chain suppliers and contractors. Restrictions to parking in the surrounding neighbourhood will be advised and designated parking for the project will be provided on the site for the staff and contractors parking.

Kier Construction / Sub Contractors will abide by the site speed limit of 5mph at all times and in particular within proximity of 'Kings Road' and the neighbouring properties.



Our works and deliveries will be closely co-ordinated and communicated with the neighbouring properties that are situated along Kings Road as and when required.

6.0 Emergency Contacts

Nearest hospital A and E department:
Swansea Singleton Hospital

Police	Swansea Central
Ambulance	Swansea – Singleton Hospital
Fire (central command)	0870 6060699
HSE	0845 345 0055
Environment Agency	0800 80 70 60
Welsh Water	0800 052 0130
Western Power	0800 052 0400
Wales and West Utilities	0800 111 999

All numbers to be displayed within the site office and canteen areas.

7.0 Construction Sequencing Strategy – The FACE Building (Flexi and Tech)

(Working from the South (Dry Docks) to the Northern side of the site (Kings Road))

- Enabling Works: Anticipated commencement date being the **5th September 2016**
- Sub Structure Works: Commence 3rd October 2016 - Week (1) to start the piling works

- Super Structure Works: Commence 5th December 2016 -Week (10) Structural Steel Work
- External Facades: Commence 2nd May 2017 -Week (31) Cladding Systems
- Internal Finishes: Commence June 2017 - Week (27) 1st Fix services / finishes
- Watertight: Milestone 25th August 2017 - Week (48) Roof Structure / Envelope

7.1 Construction Sequencing Strategy – The FACE Building (Tech)

(Working from the West to the Eastern side of the site)

- Enabling Works: Anticipated commencement date being the 5th September 2016
- Sub Structure Works: Commence 12th December – Week (11) to start the piling works
- Super Structure Works: Commence 13th March 2017 – Week (24) Structural Steel Work
- External Facades: Commence 2nd May 2017 - Week (31) Cladding Systems
- Internal Finishes: Commence 8th May 2017 - Week (32) 1st Fix services / finishes
- Watertight: Milestone 18th August 2017 - Week (47) Roof Structure / Envelope

7.3 Construction Sequencing Strategy – The Library Building

(Working from the West to the Eastern side of the site)

- Enabling Works: Anticipated commencement date being the 5th September 2016
- Sub Structure Works: Commence 24th October 2016 – Week (4) to start the piling works
- Super Structure Works: Commence 9th January 2017 - Week (15) Structural Steel Work
- External Facades: Commence 18th April 2017 - Week (29) Cladding Systems
- Internal Finishes: Commence 3rd July 2017 - Week (40) 1st Fix services / finishes
- Watertight: Milestone 8th December 2017 – Week (63) Roof Structures /
Envelope

The programme identifies an overall project duration of 96 weeks (comprises of 4 weeks enabling works and 92 weeks for the construction period with 'terminal / project float' commencing from project completion.

Site Establishment and Preparatory Works

Site commencement (enabling works) is programmed to commence during September 2016 following finalisation of the design development. First activity will be the establishment and security of the site compound, Offices, Welfare and designated storage and parking facilities. The activities above will take approximately 4 weeks during the enabling works period.

Temporary car parking facilities will be contained within the site set up to accommodate the staff and sub-contractors parking to the northern end of the site – see site logistics plans.

Material Distribution and Storage (including Fuel, Chemical and Plant Storage)

Heavy plant will be off-loaded within the designated hard standing areas (See Site Logistics Plan – designated areas). A banksman will be in attendance as outlined in our 'deliveries to site procedures'

All plant will be stored within the designated compounds. All refuelling points will have bunds to prevent spillage within the ground / water courses. Spill Kits will be set up within the compound along with notice boards displaying emergency contact numbers should there be a spillage incident.

All fuels, oils and chemicals will be stored within these 'Plant Compounds'. Gases stored in locked cages away from the site set up / welfare facilities.

During the frame / super structure works, materials will be hoisted and distributed to the work areas via the hoists, mobile cranes and telescopic forklifts provided by the relevant specialist sub-contractors.

Cranes will be supplemented by mobile concrete pumps for all of the internal slab pours (including the reinforced concrete frame to the Library Building) – detail sequence plans will be produced for such operations.

As construction of the structural steel frame develops (FACE Building) on the external facades – perimeter scaffolding and 'MEWPs' will be utilised for access to the external envelopes

Integral loading platforms will be provided and serviced by the forklifts and / or hoists.

During the initial weeks of the external facades progressing, the internal floor slabs will also be serviced by forklift with materials being pre-loaded where possible and distributed horizontally from the loading points by pallet trucks.

In advance of the external facades / envelopes being 'closed up', materials for the internal finishing trades will be distributed wherever possible onto the floor slabs via a combination of; hoist, telescopic forklift and / or manually handling means as appropriate.

Programme Sequence:

The 'FACE Building' – comprises of the 'Flexi and Tech' Buildings

The enabling works is programmed to commence on the 5th September 2016 (planned duration being assessed as 4 weeks). These activities will include for the site preparation and perimeter hoardings, Office and Welfare site set up in advance of finalising the piling matt.

The 'Flexi 4 Storey Building'

The construction sequence will be to commence the site activities from the southern end of the site (dry docks) and progress towards the northern end of the site (adjacent to Kings Road).

Upon completion of the piling works, the substructure works will start the preparation works to form the pile caps, beams in advance of the underground drainage commencing.

Upon completion of the structural steel work (FACE Building), the first floor metal decking will be installed in advance of the underground drainage and slab commencing.

The upper floors will progress systematically above the first floor decking to the roof level. These works will progress from the southern end of the site and progressing towards the northern end of the site. Follow on finishing trades (concrete slab pours and the internal finishes) will also progress in this build sequence.

The external facades and envelopes will commence initially along the 'West Elevation' and progress clockwise to achieve the water tightness. The internal skin envelop ('metsec' framework and cementious board) will progress in advance of the curtain walling / cladding systems on both buildings. The external brick work will commence after the curtain walling and perimeter scaffolding has been finalised.

Critical areas being the elevations adjacent to the 'dry docks' requiring full perimeter scaffolding due to the access constraints / limitations

Library Building

The Library Building will commence after the completion of the piling works on the 'FACE Building' to provide continuity with the sub and super structure trade contractors. The construction sequence will commence from the western side of the site and progress towards the eastern end. Concrete slabs progressing from the first floor level and then working to the upper floor levels / roof)

The internal pre cast stair cases will be installed in coordination with the concrete frame upper floor levels (Library Building). The structural steelwork will commence from the third floor to form the roof structure.

The internal finishes will commence initially within the 'FACE Building – 3 Storey' when the structure is substantially watertight. These activities will be promoted on the ground and first floors initially, in order to benefit from early access.

Information to be read in conjunction with University of Wales Trinity Saint David 'Health and Safety Policy' dated / referenced 2015