



P2288

**ADDENDUM ENVIRONMENTAL IMPACT ASSESSMENT REPORT
VOLUME 3: APPENDICES**

CHAPTER 1 ADDENDUM APPENDICES

RIVERINE COMMUNITY PARK

LIFFORD-STRABANE

APRIL 2022



the paul hogarth company



**Comhairle Contae
Dhún na nGall**
Donegal County Council



Derry City & Strabane
District Council
Comhairle Chathair
Dhoire & Cheantar
an tSratha Báin
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Appendix 1-1

Statements of Authority

No amendments and therefore not provided within Addendum EIAR

Please refer to originally submitted document

Appendix 1-2

Lifford Schedule of Mitigation Measures

Appendix 1.2 – Lifford Schedule of Mitigation Measures

Environmental Topic	Potential Impacts (without Mitigation)	Mitigation Measures	Phase
Biodiversity	General disturbance of all Fauna	<p>During the construction phase noise may cause disturbance, therefore the adoption of best practice as defined by the Control of Pollution Act 1974 should be implemented.</p> <p>All noise caused by machines should be minimised and should operate during daytime hours only as agreed with the council.</p> <p>With regards to dust it should be ensured that an adequate supply of water is available on site for effective dust suppression.</p> <p>No light should be directed onto woodland features during the construction or operational phase.</p> <p>No excavations are to be left uncovered or without a means of egress (a sloped plank for example) overnight, as otters may fall in or enter in search of food and become trapped.</p> <p>No buildings or storage units are to be left open overnight, as wildlife may enter and become trapped.</p> <p>No poisonous or potentially harmful substances or materials are to be left unsecured</p>	Construction & Operational

Environmental Topic	Potential Impacts (without Mitigation)	Mitigation Measures	Phase
		<p>overnight.</p> <p>The use of rodenticides for any pest control are prohibited on site.</p> <p>No vehicles or machinery are to be used installing any fencing or exclusion gates.</p>	
	Disturbance of Otters	<p>If an otter is discovered or any activity suggesting otters have been disturbed during construction, all work must cease immediately, and the ecologist should be notified as soon as possible to detail how to proceed.</p> <p>It is also recommended that compensatory planting scheme be carried out in order to recreate foraging habitat which may be lost due to the proposed site plans.</p> <p>A minimum of 15 metres should be maintained as a buffer between the proposed development and surrounding water courses.</p> <p>Fencing designs should provide unrestricted access to the site for the otters in an effort to allow otters to use their extended foraging grounds.</p> <p>A surface water management plan must be prepared and implemented prior to construction works to avoid potential impacts on the water courses and water quality.</p> <p>Either a small culvert or small ledge structure must be worked into the bridge landing areas to allow otters free land access across the areas where the bridge makes contact with the</p>	Construction & Operational

Environmental Topic	Potential Impacts (without Mitigation)	Mitigation Measures	Phase
		<p>banks of the River Foyle. These culverts or ledges will follow best practice guidance and meet current specifications for dimensions. These culverts/ledges must be of minimum 500mm x 600mm diameter and be at least 150mm above the highest water level and run the length of the bridge landing sites extending past the bridge landing to re-join the riverbank allowing the otters free unhindered access along the riverbanks out of the water.</p> <p>A compensatory planting scheme will have to be implemented following the construction phase in order to re-create foraging habitat which may be lost or damaged due to the proposed site plans</p> <p>The re-planting scheme implemented must use native riverine species for the restoration of the bank habitats temporarily damaged and lost during the construction works. This should also include increasing the size of the thin corridor of reed and large sedge swamp habitat located along the riverine corridor. This type of habitat is highly vital to riverine ecosystems and based on the evidence found is used heavily by the otters within the area. Re-planting and restoring the temporarily lost habitat to help expand this area of reed and large sedge swamp habitat will help to compensate for the permanent loss of habitat experienced from the bridge landings and jetty.</p>	
	Disturbance of Badgers	If a badger is discovered or any activity suggesting badgers have been disturbed during construction, all work must cease immediately, and the ecologist should be notified as soon as possible to detail how to proceed.	Construction

Environmental Topic	Potential Impacts (without Mitigation)	Mitigation Measures	Phase
		<p>It is also recommended that compensatory planting scheme be carried out in order to recreate foraging habitat which may be lost due to the proposed site plans.</p>	
	<p>Disturbance of Atlantic Salmon and Riverine Habitat</p>	<p>Use of single span bridge to avoid in-channel support pier. Temporary crane platform (in the river channel) and working platform (on the river bank) will need to be constructed in order to construct and install the bridge. Mitigation of temporary works platform to prevent silt release through design and control methods.</p> <p>Seasonal restrictions implemented for bridge construction and associated works to minimise impact on migratory fish.</p> <p>Due to the embankment works close proximity to the River Foyle there is an increased risk of pollution from silt and debris disturbance, potential oil and hydrocarbon spills as well as vibration disturbances. As such, it is recommended that in order to reduce these potential risks all surface water contaminated by spoil during the embankments excavation works should be collected and treated before discharged in order to remove and potential contaminants. Spill kits and plant nappies must be readily available along# with the use of silt fencing and bunds in order to capture any potential silt, oil and hydrocarbon spills and leaks. Part of the process will involve compacting the freshly laid fill in order to achieve robust embankments. This poses a risk to aquatic species due to the potential risk of vibrations produced causing disturbance and disorientating migratory fish e.g: during the salmon run. Similar mitigation to what has been previously mentioned with regards to the bridge landing is required through the implementation of low vibration methods. Conventional vibratory rollers are only to be used</p>	<p>Construction</p>

Environmental Topic	Potential Impacts (without Mitigation)	Mitigation Measures	Phase
		<p>with the vibration turned off allowing for a low impact method to ensure the fill can be appropriately compacted.</p> <p>Due to the location of the proposed carpark on the Strabane side of the site, within the old halting area located within the sites southern corner, there is a perceived risk of runoff water from the car park potentially introducing pollutants and hydrocarbons into the water systems. Therefore, it has been recommended that the SUDS scheme developed to create an environmentally safe drainage system to protect the nearby riverine habitat from potential pollution through surface runoff. The SuDS Drainage scheme is detailed in the Sustainable Drainage Strategy (Appendix 9-3) but in summary comprises hardstanding incorporating areas of permeable surfacing which allows infiltration of runoff waters into a permeable substrate. The substrate will be hydraulically sealed from the underlying made ground (under the permeable substrate) using an impermeable membrane to prevent downward migration of runoff into the underlying groundwater system. This prevents any enhancement of mobilisation of any contamination in the made ground soils, and also prevents any oil spillage from entering the groundwater system. The infiltrated runoff within the substrate layer, which will provide SuDS source control for sediment and pollutants, is captured by a series of laterally-laid perforated pipes, directing the runoff to one of two suitably-sized Class 1 full retention interceptors, discharging to the Park Road Drain along the eastern site boundary. This drainage system will prevent the release of oil to the environment from worst case accidental spillages under all weather conditions.</p>	

Environmental Topic	Potential Impacts (without Mitigation)	Mitigation Measures	Phase
	<p>Restriction of mammal movement within the site and lands beyond</p> <p>Otter and Badger</p>	<p>Mammal gates proposed to be situated at intervals along peripheral fencing within the site to enable badgers and other mammals to move around and in and out of the site unrestricted, thereby not interfering with any foraging.</p> <p>Either a small culvert or small ledge structure must be worked into the bridge landing areas to allow otters free land access across the areas where the bridge makes contact with the banks of the River Foyle. These culverts or ledges will follow best practice guidance and meet current specifications for dimensions. These culverts/ledges must be of minimum 500mm x 600mm diameter and be at least 150mm above the highest water level and run the length of the bridge landing sites extending past the bridge landing to re-join the riverbank allowing the otters free unhindered access along the riverbanks out of the water.</p>	Construction
	Disturbance of Bats	<p>Light spill from the proposed development should be minimised as far as possible.</p> <p>No lighting should be directed towards existing mature vegetation i.e. mature trees or boundary hedgerows.</p> <p>All terrestrial lighting should be fitted with directional hoods and/or luminaires to direct the light downwards onto targeted areas and to prevent unnecessary light-spill.</p> <p>Any external lighting around any buildings / structures (e.g. safety lights at the front and rear) should be fitted with motion sensors (timer of up to 60 seconds).</p>	Construction & Operational

Environmental Topic	Potential Impacts (without Mitigation)	Mitigation Measures	Phase
		<p>The intensity of lighting should be kept to the minimum level required for safety. Low-UV LEDs or low / high pressure sodium lamps will be the preferred bulb type, as they have least adverse effect on bats. Adaptive lighting, presence and absence controls and seasonal lighting should be implemented where possible to minimise the length of time open areas are lit up during the hours of darkness.</p> <p>With respect to the bridge lighting, lights should be directed away from the river and the riverbanks so as to not directly land on the water surface or trees and vegetation on the banks.</p> <p>Lighting of roads, paths, car parks and temporary construction compounds to be ecologically-friendly and in accordance with relevant ecological guidance to strike a balance between safety needs and environmental protection of foraging habitat.</p>	
	<p>Spread of Invasive plant species.</p>	<p>An Invasive Species Management Plan has been prepared and will be implemented during the construction and operation of the Project. This is designed to manage invasive plant species through a combination of ex-situ treatment of key areas in direct conflict with the development and in-situ treatment of other areas within the site.</p> <p>Installation of a root barrier membrane within areas of footpaths, roads, hardstandings, buildings etc. which are at risk from potential Japanese Knotweed encroachment. These areas at risk are where Japanese Knotweed remains in close proximity to the structure, or where the required excavation is not achievable.</p>	<p>Construction & Operational</p>

Environmental Topic	Potential Impacts (without Mitigation)	Mitigation Measures	Phase
	<p>Spread of Invasive bivalve species. Asian Clam</p>	<p>Biosecurity measures (washing facility at Construction Compound) which require measures to eradicate importation of invasive bivalves during the construction phase.</p> <p>Signage to be erected at slipway to advise users to follow Loughs Agency and NIEA Biosecurity Guidance.</p>	<p>Construction</p> <p>Operation</p>
	<p>Disturbance of fish species</p>	<p>Bridge designed to be a single span with no in- channel support structures so as not to disturb the riverbed and channel.</p> <p>Bridge lighting controlled to ensure that there is no direct lighting of the river and to be ecologically-friendly and in accordance with relevant ecological guidance to strike a balance between safety needs and environmental protection of the River Foyle SAC.</p> <p>Seasonal restrictions on bridge construction and piling works within the SAC have been implemented to avoid the most ecologically-sensitive period (salmon runs).</p>	<p>Construction & Operational</p>
	<p>Animals ingesting harmful substances</p>	<p>No poisonous or potential substances to be left unsecured overnight. No use of rodenticides within the site</p>	<p>Construction & Operational</p>
	<p>Disturbance of Long Eared Owl</p>	<p>All construction works within 150m of owl nest must be undertaken outside the bird breeding season and under license from NIEA. It is also recommended that replacement raptor boxes be installed within 200m of the area as a compensatory/mitigation measure to ensure the long-eared owl has appropriate replacement nesting. All works near the long-eared owl nesting site and installation of replacement raptor boxes must be carried out under supervision and installed by a suitably qualified ecologist via the presence of an ecological clerk of works. The use of rodenticides for any pest control are prohibited on site.</p>	<p>Construction & Operational</p>

Environmental Topic	Potential Impacts (without Mitigation)	Mitigation Measures	Phase
	Disturbance of other potential nests	<p>Any scrub or tree clearance should be kept to a minimum and undertaken outside of the breeding season 1st March – 31st August. (Seasonal Constraints of elements of construction works).</p> <p>Clearance of scrub/hedgerow's during the breeding season be required, this must be undertaken under the supervision of a qualified ecologist and appropriate surveys undertaken prior to any scrub clearance</p>	Construction
Lands, Soils and Waters	Gas ingress into buildings and site infrastructure	<p>Ground gas protection measures should be installed under the community hub building in Lifford. One or two of the following measures should be implemented with all joints and penetrations sealed;</p> <ul style="list-style-type: none"> • Reinforced concrete cast in situ floor slab (suspended, non-suspended or raft) with at least 1200 g DPM². • Beam and block or pre cast concrete slab and minimum 2000 g DPM/reinforced gas membrane. • Underfloor venting or pressurisation in combination with a) and b) depending on use. 	Construction & Operational
	Erosion of exposed soils/subsoils and entry of sediment laden run-off to nearby surface water.	<p>A Construction Environmental Management Plan (CEMP), agreed by statutory consultees and implemented prior to commencement of construction works. A detailed copy of the oCEMP is presented in Appendix 3-1. An Outline Surface Water Management Plan (SWMP) and Water Quality Monitoring Plan (WQMP) are provided as Appendix 9-11. A programme of routine surface water and groundwater quality monitoring must be undertaken to ensure that no water pollution is caused during the construction phase.</p>	Construction

Environmental Topic	Potential Impacts (without Mitigation)	Mitigation Measures	Phase
		<p>Earthworks shall be carried out in a phased manner, limiting exposed areas and timed to avoid sensitive periods.</p> <p>Stockpiles of topsoil / soils will be covered/dampened during dry weather to prevent spreading of sediment / dust. At least 10m buffer to watercourses, at least 100m buffer to River Foyle SAC.</p> <p>Run-off from the site will pass through temporary settlement lagoons and / or sediment tanks prior to discharge to the site watercourse / drains.</p> <p>Top-soiling and landscaping of the works will take place as soon as finished levels are achieved.</p> <p>Silt fences will be erected adjacent to watercourses during construction. Matting may also be used to capture silt-laden runoff.</p> <p>Drilling spoil shall be stored temporarily in sealed bins and removed from the site within 24 hours. No discharges of water shall be made from drilling works.</p>	
	Excavations may act as barriers to runoff diverting surface water away from existing routes or cause flooding elsewhere	Overland flow should be captured by strategically sited peripheral cut-off ditches and directed to settlement lagoons or proprietary settlement tanks.	Construction
	Unsecured loads during transport pose a potential risk to the water environment	Fine materials (e.g. sand and / or cementitious products) shall be covered and secured with heavy duty canvas / tarpaulin. Routine checks should be made for rips and tears and repaired immediately. At least 10m buffer to watercourses, at least 100m buffer to River Foyle SAC.	Construction

Environmental Topic	Potential Impacts (without Mitigation)	Mitigation Measures	Phase
	<p>should there be an accidental leakage/ spillage of materials</p>	<p>For vehicles and plant leaving material deposition / stockpile areas, self-contained recirculating wheel wash facilities shall be installed at the exit and all vehicles will be required to pass through them.</p> <p>Double-skinned fuel bowsers only to be used for delivery refuelling and limited to traverse areas >10m from a watercourse.</p>	
	<p>Stockpiling of materials may pose a risk as they can be a ready source of loose material if not adequately protected from water and wind.</p>	<p>Avoid unnecessary stockpiling. Stockpiling areas should be appropriately lined and positioned away from watercourses (at least 10m away for all watercourses, and at least 100m away for River Foyle SAC).</p> <p>Stockpiles of topsoil / soils will be covered / dampened during dry weather to prevent spreading of sediment/dust. Buffer zones to be implemented : at least 10m buffer to watercourses, at least 100m buffer to River Foyle SAC.</p> <p>In advance of construction, silt fences and bunds shall be provided around the footprint of any stockpiles.</p>	Construction
	<p>The development will involve cut – fill operations. Imported materials have the potential to be contaminated, introducing new contamination sources to the site</p>	<p>Re-use of site-derived materials between jurisdictions is not permitted.</p> <p>Materials shall be imported subject to compliance with all Duty of Care and Waste Management legislative requirements. All materials derived from sites other than licensed quarries will be considered as waste.</p>	Construction

Environmental Topic	Potential Impacts (without Mitigation)	Mitigation Measures	Phase
		<p>Imported clean topsoil and clay must be imported by pre-movement agreement with regulator bodies with all permissions in place.</p> <p>Where any inert wastes are to be imported, appropriate exemptions / authorisations shall be in place with the relevant regulator prior to any wastes being imported.</p> <p>All imported soils and clays shall be subject to appropriate human health screening assessment testing at a density of at least one sample per 1,000 m3 of materials imported.</p> <p>All imported wastes, including clays, shall be subject to appropriate waste classification (WAC and WM3) testing at a density of at least one sample per 1,000 m3 of materials imported.</p> <p>Proper records shall be kept by the contractor and made available for all topsoil, clay and wastes imported to the site to serve as make-up or fill. Records shall include including waste transfer notes, details of the volume and nature of imported materials, photographic records of the materials, the position and extent of deposits for each individual source, the exact source of the materials and date imported.</p> <p>No suspect contaminated materials or materials from other brownfield sites shall be imported to the site.</p>	
	Temporary compaction of soils caused by construction phase plant and site traffic	Overland flow should be captured by strategically sited peripheral cut-off ditches and directed to settlement lagoons or proprietary settlement tanks.	Construction

Environmental Topic	Potential Impacts (without Mitigation)	Mitigation Measures	Phase
	<p>movements, may increase the rate and volume of surface water runoff.</p>		
	<p>Works to existing surface watercourses (i.e. installation of a permanent bridge on the River Foyle and construction, use and deconstruction of lifting crane pad in the River Foyle have the potential to cause impact to the River Foyle through disturbance of river bank and river bed, introduction of silt source.</p>	<p>The temporary crane pad shall be constructed, used and dismantled in a manner which shall protect the river from silt release. Temporary and permanent piles will be emplaced using techniques suitable for high-sensitivity sites. No permanent piles for crane pad.</p> <p>CEMP / Pollution Prevention Plan (PPP) including emergency response plan shall be prepared, agreed by statutory consultees and implemented prior to commencement of construction works. An Outline Surface Water Management Plan (SWMP) and Water Quality Monitoring Plan (WQMP) are provided as Appendix 9-11. A programme of routine surface water and groundwater quality monitoring must be undertaken to ensure that no water pollution is caused during the construction phase.</p> <p>Concrete mixing and washing areas should be located at least 10m from water bodies (100m for River Foyle SAC) and have settlement and re-circulation systems for water reuse. Isolation of working area, protective sheeting to be utilised.</p> <p>Chemical, fuel and oil storage will be undertaken within a site compound, which will be located on stable ground at a low risk of flooding and at least 10 m from any watercourse (100m for River Foyle SAC). The stores will also be locked and sited on an impervious base within a secured bund with 110% of the storage capacity.</p>	<p>Construction</p>

Environmental Topic	Potential Impacts (without Mitigation)	Mitigation Measures	Phase
		<p>The oCEMP sets two types of environmental protection buffer zone, as follows:-</p> <ul style="list-style-type: none"> • 15m Buffer to all watercourses / areas of standing water. • 100m Buffer to River Foyle SAC. <p>Buffer zones must be clearly defined by marker tape and/or posts. Silt fencing must also be placed around the entire perimeter of each buffer zone (including the SAC buffer zone) at the 15m limit to prevent water-laden sediment flowing toward watercourses.</p> <p>Where appropriate, these boundary markers can also be used to restrict access to the buffer zones.</p> <p>Each buffer zone should be assigned a reference number which should be displayed at the buffer boundary limit for easily identification of which buffer works are being completed near or within. This will assist in record keeping and incident reporting.</p> <p>The following activities are routinely prohibited from being carried out within buffer zones:-</p> <ul style="list-style-type: none"> • Oil storage, oil drums / cans and refuelling activities. • Chemical storage (including road salt). • Vehicle servicing / mechanical repairs. • Vehicle / machinery parking, Lay-up or washing down. • Concrete Mixing, washing out. 	

Environmental Topic	Potential Impacts (without Mitigation)	Mitigation Measures	Phase
		<ul style="list-style-type: none"> • Storing of stockpiles of soil, clay, cement, vegetation or any wastes. • Placement of welfare units. • Vehicle movements, unless these cannot be avoided by using an alternative route. • Ground disturbance, excavations, vegetation stripping, application of chemicals* <p>* Unless being carried out as part by trained personnel as part of the implementation of the Invasive species management system</p> <p>For these activities with buffer zones, the following mitigation measures will apply:</p> <ul style="list-style-type: none"> • Where possible silt fencing shall be installed between the activity and any downslope watercourse at the maximum achievable buffer zone distance, or at an appropriate break in slope or natural containment feature if present. • Where installation of silt fending is not feasible, Installation of shallow (0.2m deep) elongate cut-off trench downslope of the activity to catch sediment etc and prevent it reaching the watercourse. Reinstatement thereafter. • Silt traps must be deployed in any minor watercourses immediately downstream of the works and inspected on a daily basis with any 	

Environmental Topic	Potential Impacts (without Mitigation)	Mitigation Measures	Phase
		<p data-bbox="1093 268 1865 387">captured debris / silt removed to the waste storage area at the construction compound. The silt traps must be removed following completion of works within the buffer zone.</p> <ul data-bbox="1048 435 1865 1361" style="list-style-type: none"> <li data-bbox="1048 435 1865 611">• Plant nappy style drip trays shall be deployed around all portable oil-containing equipment. These must be inspected on a daily basis and renewed as necessary with all contaminated materials removed from the site with 24 hours. <li data-bbox="1048 651 1865 922">• Double skinned fuel / oil bowsers only to be used. Bowsers to be locked at all times during transport, with access to the fuel controlled by the site manager. Bowsers shall be brought into to the buffer zone as and when required for refuelling of static plant only (cranes and piling rigs) and removed immediately to the construction compound thereafter. No fuel / oil bowsers shall be stored within the buffer zone. <li data-bbox="1048 962 1865 1193">• It is permissible to undertake emergency repairs and essential maintenance of static plant, whilst positioned in the buffer zone, provided all appropriate oil spill prevention and clean-up measures are in place, including deployment of plant nappies under any works and spill kits are available at close quarters within the buffer zone. <li data-bbox="1048 1233 1865 1361">• Non-putrescible wastes to be stored in covered skips or covered bins which must be removed to the construction compound for emptying on a twice weekly basis. No putrescible wastes permitted in buffer zones. 	

Environmental Topic	Potential Impacts (without Mitigation)	Mitigation Measures	Phase
		<ul style="list-style-type: none"> • The following activities are not permitted within Buffer Zones:- <ul style="list-style-type: none"> ○ Chemical storage (including road salt). ○ Vehicle servicing / mechanical repairs (apart from undertaking emergency repairs to static plant – cranes and piling rigs). ○ Vehicle / machinery parking, Lay-up or washing down. ○ Concrete Mixing, washing out. ○ Storing of stockpiles of soil, clay, cement, vegetation or any wastes. ○ Placement of welfare units. • All works within buffer zones must be approved in advance by the site manager. <p>All buffer zones shall be inspected in a daily basis by the Environmental Clerk of works and records kept of these inspections. The inspection must include assessment of the conditions of mitigation measures such as condition and status of silt traps, general site conditions, any evidence of increased pollution risk or spillages, with any significant findings reported immediately to the site manager for appropriate remedial actions to be undertaken if necessary.</p>	

Environmental Topic	Potential Impacts (without Mitigation)	Mitigation Measures	Phase
	<p>Installation of culverts and drainage system outfalls can cause damage to bank side / riparian habitats, mobilising sediment and releasing material into the surface watercourse.</p>	<p>Outfall design should comply with good practice and should consider directing each outfall downstream to minimise impacts to flow patterns, avoiding projecting the outfall into the watercourse channel, directing an outfall away from the banks of a river to minimise any potential risk of erosion (particularly on the opposite bank), and minimising the size / extent of the outfall headwall where possible to reduce the potential impact on the banks.</p>	Construction
	<p>Potential leakage or spillage of cement or other potentially polluting substances resulting in surface water contamination.</p>	<p>CEMP / Pollution Prevention Plan (PPP) including emergency response plan shall be prepared, agreed by statutory consultees and implemented prior to commencement of construction works. A detailed oCEMP is presented in Appendix 3-1. An Outline Surface Water Management Plan (SWMP) and Water Quality Monitoring Plan (WQMP) are provided as Appendix 9-11. A programme of routine surface water and groundwater quality monitoring must be undertaken to ensure that no water pollution is caused during the construction phase.</p> <p>Concrete mixing and washing areas should be located more than 10m from water bodies (100m for River Foyle SAC) and have settlement and re-circulation systems for water reuse. Isolation of working area, protective sheeting to be utilised.</p> <p>Chemical, fuel and oil storage will be undertaken within a site compound, which will be located on stable ground at a low risk of flooding and at least 10 m from any watercourse (100m for River Foyle SAC). The stores will also be locked and sited on an impervious base within a secured bund with 110% of the storage capacity.</p> <p>Spill kits to be retained on-site.</p>	Construction

Environmental Topic	Potential Impacts (without Mitigation)	Mitigation Measures	Phase
		For vehicles and plant leaving material deposition/ stockpile areas, wheel wash facilities shall be installed at the exit and all vehicles will be required to pass through them.	
	Temporary compaction of soils caused by construction phase plant and site traffic movements, may increase the rate and volume of surface water runoff.	Overland flow should be captured by strategically sited peripheral cut-off ditches and directed to settlement lagoons or proprietary settlement tanks.	Construction
	Potential accidental leakage or spillage of hydrocarbons from vehicles/ machinery resulting in surface water contamination.	<p>CEMP/ PPP including emergency response plan shall be prepared, agreed by statutory consultees and implemented prior to commencement of construction works. A detailed oCEMP is presented in Appendix 3-1. Buffer zones to be implemented : at least 10m for all watercourses, at least 100m for River Foyle SAC. An Outline Surface Water Management Plan (SWMP) and Water Quality Monitoring Plan (WQMP) are provided as Appendix 9-11. A programme of routine surface water and groundwater quality monitoring must be undertaken to ensure that no water pollution is caused during the construction phase.</p> <p>Stationary plant will be fitted with drip trays and emptied regularly, and plant machinery will be regularly inspected for leaks with maintenance as required. Spillage kits will be stored at key locations on-site, and all construction activities will comply with a Pollution Incident Control Plan to be prepared by the appointed Contractor prior to commencement of works.</p> <p>Only designated trained and competent operatives will be authorised to refuel plant and all refuelling will be undertaken at designated refuelling areas (e.g. on hardstanding, with spill</p>	Construction

Environmental Topic	Potential Impacts (without Mitigation)	Mitigation Measures	Phase
		<p>kits available, and at least 10 m from water features, 100m for River Foyle SAC) where practicable. Appropriate measures will be adopted to avoid spillages.</p> <p>Double-skinned fuel bowsers only to be used for delivery refuelling and limited to traverse areas >10m from a watercourse. Diesel bowsers to be locked at all times.</p>	
	<p>Spread of invasive species</p> <p>Discharges to local watercourses from Construction Compound</p>	<p>Washing facilities at Construction Compound to be self-contained with no environmental discharge. All contaminated wastes generated shall be contained and removed from the site to landfill.</p>	Construction
	<p>Potentially polluting substances such as hydrocarbons, heavy metals, and polycyclic aromatics hydrocarbons (PAHs) may be contained in runoff from roads and car parking areas.</p>	<p>Water quality risk management techniques shall be used to determine the appropriate stormwater management system required for the site. The approach shall utilise SuDS mitigation indices (i.e. those outlined in the SuDS Manual (C753) – Chapter 26) to inform the design of the stormwater management system.</p>	Operational
	<p>Potential to increase flood risk by reducing the area of permeable land cover compared to existing conditions (i.e., greenfield site).</p>	<p>The proposed drainage design will incorporate SuDS components to drain the site. These will be designed in accordance with industry good practice guidance and current planning standards and regulations. Final flows discharged from the site will be controlled to calculated greenfield run-off rates up to the 1 in 100 year plus allowance for climate change rainfall event. The Accommodation Works area will be served by piped drainage, limited to greenfield runoff rate.</p>	Operational
	<p>Potential to cause pollution during flood event due to mobilisation of pollutants from stored materials and machinery</p>	<p>Good practice management and storage of materials. These measures shall include</p> <ul style="list-style-type: none"> • storing high risk materials such as oils, fuels, chemicals inside buildings • maintaining low stocking levels of oils, fuels, pesticides and potentially polluting materials 	Operational

Environmental Topic	Potential Impacts (without Mitigation)	Mitigation Measures	Phase
	within Maintenance Depot and Spectator Stand.	<ul style="list-style-type: none"> keeping stored materials in appropriate containers / bags to prevent release during flooding keeping machinery clean and maintained to a high standard 	
	Works to existing surface watercourses have the potential to disrupt flow and sediment regime.	Outfall design should comply with good practice and should consider directing each outfall downstream to minimise impacts to flow patterns, avoiding projecting the outfall into the watercourse channel, directing an outfall away from the banks of a river to minimise any potential risk of erosion (particularly on the opposite bank), and minimising the size / extent of the outfall headwall where possible to reduce the potential impact on the banks.	Operational
	Buildings & Hardstanding	Detailed assessment confirms that the proposal causes no measurable effect flood extents or floor levels elsewhere including transboundary effects. No further mitigation required.	Operational
	Runoff Discharge at Slipway (small car park, 3 spaces)	Carpark drainage shall be discharged to underground stratum via suitably-sized oil-water interceptor to minimise risk to SAC.	Operational
Air and Climate	Poor communication leading to air quality/issued issues being unresolved	<p>Develop and implement a stakeholder communications plan that includes community engagement before work commences on site.</p> <p>Display the name and contact details of person(s) accountable for air quality and dust issues on the site boundary. This may be the environment manager/engineer or the site manager.</p> <p>Display the head or regional office contact information.</p>	Construction
	Poor site management leading to adverse air quality/dust impacts	Record all dust and air quality complaints, identify cause(s), take appropriate measures to reduce emissions in a timely manner, and record the measures taken.	Construction

Environmental Topic	Potential Impacts (without Mitigation)	Mitigation Measures	Phase
		<p>Make the complaints log available to the local authority when asked.</p> <p>Record any exceptional incidents that cause dust and/or air emissions, either on- or offsite, and the action taken to resolve the situation in the logbook.</p> <p>Hold regular liaison meetings with other high risk construction sites within 500 m of the site boundary, to ensure plans are co-ordinated and dust and particulate matter emissions are minimised. It is important to understand the interactions of the off-site transport/deliveries which might be using the same strategic road network routes.</p>	
	<p>Poor/lack of monitoring leading to adverse air quality/dust impacts</p>	<p>Undertake daily on-site and off-site inspection, where receptors (including roads) are nearby, to monitor dust, record inspection results, and make the log available to the local authority when asked. This should include regular dust soiling checks of surfaces such as street furniture, cars and windowsills within 100 m of site boundary, with cleaning to be provided if necessary.</p> <p>Carry out regular site inspections to monitor compliance with the DMP, record inspection results, and make an inspection log available to the local authority when asked.</p> <p>Increase the frequency of site inspections by the person accountable for air quality and dust issues on site when activities with a high potential to produce dust are being carried out and during prolonged dry or windy conditions.</p>	<p>Construction</p>

Environmental Topic	Potential Impacts (without Mitigation)	Mitigation Measures	Phase
		<p>Agree dust deposition, dust flux, or real-time PM10 continuous monitoring locations with the Local Authority. Where possible commence baseline monitoring at least three months before work commences on site or, if it a large site, before work on a phase commences. Further guidance is provided by IAQM on monitoring during demolition, earthworks and construction.</p>	
	<p>Poor preparation/maintenance of site leading to adverse air quality/dust impacts.</p>	<p>Erect solid screens or barriers around dusty activities or the site boundary that are at least as high as any stockpiles on site.</p> <p>Fully enclose site or specific operations where there is a high potential for dust production and the site is active for an extensive period.</p> <p>Avoid site runoff of water or mud.</p> <p>Keep site fencing, barriers and scaffolding clean using wet methods.</p> <p>Remove materials that have a potential to produce dust from site as soon as possible, unless being re-used on site. If they are being re-used on-site cover as described below.</p> <p>Cover, seed or fence stockpiles to prevent wind whipping.</p>	<p>Construction</p>
	<p>Adverse air quality impacts from operating vehicles/machinery and travel</p>	<p>Ensure all vehicles switch off engines when stationary - no idling vehicles.</p> <p>Avoid the use of diesel or petrol powered generators and use mains electricity or battery powered equipment where practicable.</p>	<p>Construction</p>

Environmental Topic	Potential Impacts (without Mitigation)	Mitigation Measures	Phase
		<p>Impose and signpost a maximum-speed-limit of 15 mph on surfaced and 10 mph on unsurfaced haul roads and work areas.</p> <p>Produce a Construction Logistics Plan to manage the sustainable delivery of goods and materials.</p> <p>Implement a Travel Plan that supports and encourages sustainable travel (public transport, cycling, walking, and car-sharing).</p>	
	Adverse air quality/dust impacts from general construction operations	<p>Only use cutting, grinding or sawing equipment fitted or in conjunction with suitable dust suppression techniques such as water sprays or local extraction, e.g. suitable local exhaust ventilation systems.</p> <p>Ensure an adequate water supply on the site for effective dust/particulate matter suppression/mitigation, using non-potable water where possible and appropriate.</p> <p>Use enclosed chutes and conveyors and covered skips.</p>	Construction
	Adverse air quality/dust impacts from construction waste management	Avoid bonfires and burning of waste materials.	Construction
	Adverse air quality/dust impacts from demolition	Soft strip inside buildings before demolition (retaining walls and windows in the rest of the building where possible, to provide a screen against dust.	Construction

Environmental Topic	Potential Impacts (without Mitigation)	Mitigation Measures	Phase
		<p>Ensure effective water suppression is used during demolition operations. Handheld sprays are more effective than hoses attached to equipment as the water can be directed to where it is needed. In addition, high volume water suppression systems, manually controlled, can produce fine water droplets that effectively bring the dust particles to the ground.</p> <p>Avoid explosive blasting, using appropriate manual or mechanical alternatives.</p> <p>Bag and remove any biological debris or damp down such material before demolition.</p>	
	Adverse air quality/dust impacts from construction	<p>Avoid scabbling (roughening of concrete surfaces) if possible.</p> <p>Ensure sand and other aggregates are stored in banded areas and are not allowed to dry out, unless this is required for a particular process, in which case ensure that appropriate additional control measures are in place.</p> <p>Ensure bulk cement and other fine powder materials are delivered in enclosed tankers and stored in silos with suitable emission control systems to prevent escape of material and overfilling during delivery.</p> <p>For smaller supplies of fine power materials ensure bags are sealed after use and stored appropriately to prevent dust.</p>	Construction
	Adverse air quality/dust impacts from trackout	Use water-assisted dust sweeper(s) on the access and local roads, to remove, as necessary, any material tracked out of the site. This may require the sweeper being continuously in use.	Construction

Environmental Topic	Potential Impacts (without Mitigation)	Mitigation Measures	Phase
		<p>Avoid dry sweeping of large areas.</p> <p>Ensure vehicles entering and leaving sites are covered to prevent escape of materials during transport.</p> <p>Inspect on-site haul routes for integrity and instigate necessary repairs to the surface as soon as reasonably practicable.</p> <p>Install hard surfaced haul routes, which are regularly damped down with fixed or mobile sprinkler systems, or mobile water bowsers and regularly cleaned.</p> <p>Implement a wheel washing system (with rumble grids to dislodge accumulated dust and mud prior to leaving the site where reasonably practicable).</p> <p>Ensure there is an adequate area of hard surfaced road between the wheel wash facility and the site exit, wherever site size and layout permits.</p> <p>Access gates to be located at least 10 m from receptors where possible.</p>	
Noise and Vibration	Noise disturbance outside of regular working hours	Working hours during site construction operations will be restricted to daytime hours from 07:30 hours to 18:00 hours (Monday to Friday) and, as may be required, from 08:00 hours to 13:00 hours (Saturdays). Evening and night-time work is not expected to take place although it is possible that limited 24 hours working may be required to take place on occasion. This will	Construction

Environmental Topic	Potential Impacts (without Mitigation)	Mitigation Measures	Phase
		<p>only take place with the prior agreement of Derry & Strabane District Council and Donegal County Council.</p> <p>Night-time Working - If there are items of plant (e.g. dewatering pumps and similar) in use during night-time hours they will be chosen, sited and enclosed such that levels at the nearest properties do not exceed the measured background noise levels.</p>	
	<p>Adverse noise impacts from construction vehicles and plant</p>	<p>An on-site speed limit will be enforced for all traffic. Drivers of vehicles will be advised of the speed limits through the erection of signs i.e. a typically recommended on site speed limit is 10 km/hr.</p> <p>Where practicable, the use of quiet working methods and the most suitable plant will be selected for each activity having due regard to the need for noise control.</p> <p>Best practicable means will be employed to minimise noise emissions and will comply with the general recommendations of BS 5228. To this end operators will use “noise reduced” plant and/or will modify their construction methods so that noisy plant is unnecessary.</p> <p>By positioning potentially noisy plant as far as possible from noise sensitive receivers the transmission of sound can be minimised. Earth mounds and/or stockpiles of material or perimeter hoarding on site can be used as a physical barrier between the source and the receiver.</p>	<p>Construction</p>

Environmental Topic	Potential Impacts (without Mitigation)	Mitigation Measures	Phase
		<p>Mechanical plant used on site will be fitted with effective exhaust silencers. Vehicle reverse alarms will be silenced appropriately in order to minimise noise breakout from the site while still maintaining their effectiveness.</p> <p>All plant will be maintained in good working order. Where practicable, machines will be operated at low speeds and will be shut down when not in use.</p> <p>Compressors will be of the “noise reduced” variety and fitted with properly lined and sealed acoustic covers.</p> <p>In all cases engine and/or machinery covers will be closed whenever the machines or engines are in use.</p> <p>All pneumatic percussive tools will be fitted with mufflers or silencers as recommended by the equipment manufactures. Where practicable, all mechanical static plant will be enclosed by acoustic sheds or screens.</p>	
	Lack of staff training leading to adverse noise impacts	<p>Employees working on the site will be informed about the requirement to minimise noise and will undergo training on the following aspects:</p> <ul style="list-style-type: none"> • The proper use and maintenance of tools and equipment. • The positioning of machinery on-site to reduce the emission of noise to the noise sensitive receivers. • Avoidance of unnecessary noise when carrying out manual operations and when operating plant and equipment. 	Construction

Environmental Topic	Potential Impacts (without Mitigation)	Mitigation Measures	Phase
		The use and maintenance of sound reduction equipment fitted to power pressure tools and machines.	
	Lack of monitoring leading to adverse noise impacts	<p>Responsible Person –The Contractor will appoint a responsible and trained person who will be present on site and who will be willing to answer and act upon complaints and queries from the local public.</p> <p>Where excessive noise levels are recorded, further mitigation measures will be employed which may include temporary wooden hoarding / acoustic screening to be installed to a height of no less than 2.5m around areas of construction where loud noise levels occur.</p> <p>Where deemed necessary due to excessive impact or complaints received, noise and vibration monitoring will be undertaken during construction works to determine noise and vibration levels at sensitive receivers. On the basis of the findings of such noise and vibration monitoring, appropriate noise and vibration mitigation measures will be implemented to reduce noise and vibration impacts.</p>	Construction
	Risk of cosmetic damage from vibration frequency	The contractor will ensure that the TII Guidelines which identify limits for protection against cosmetic damage as a function of vibration frequency are not exceeded through the use of the selected low vibration piling method.	Construction
	General disturbance from vibration	<p>Agree working hours for piling activities for less sensitive time or days i.e during the day-time between 0700h and 1900h for Monday to Friday, avoiding weekends.</p> <p>Use of minimal vibration piling equipment i.e using a CFA drill.</p>	Construction

Environmental Topic	Potential Impacts (without Mitigation)	Mitigation Measures	Phase
		<p>An alternative low vibration method for removal of the hardstand not involving the use of rock hammers or similar percussive methods must be deployed.</p> <p>Carry out a baseline vibration survey to determine current ambient vibration levels at the proposed piling and vibration-sensitive receptor locations.</p> <p>The measurement location at the vibration-sensitive receptor should be close to, but far enough away so not to disturb i.e 10 m away.</p> <p>Identify vibration levels the vibration-sensitive receptors are currently exposed to, and assess the potential impact from CFA piling on the vibration-sensitive receptors.</p> <p>Determine action and limit values based on the baseline vibration survey and available guidance from international standards.</p> <p>Install continuous vibration monitoring equipment at the piling location and the vibration-sensitive receptor location measuring the vibration levels.</p> <p>Monitor the vibration levels and compare with the agreed action and/or limit values.</p> <p>It is recommended the PPV is measured and if possible, the weighted acceleration and hence the VDV could also be measured (and/or determined).</p>	
Material Assets	Increase in dust and dirt from construction vehicles	During the construction phase the increase in dust and dirt will be minimised by effective site management. The construction routes will be discussed and agreed with respective roads	Construction

Environmental Topic	Potential Impacts (without Mitigation)	Mitigation Measures	Phase
(including traffic)		<p>departments and disruption will be mitigated. The construction routes and the phasing of the scheme will be agreed with respective roads departments.</p> <p>Wheel washing facilities will be provided for all construction vehicles and construction areas will be fenced-off.</p> <p>Any impact will be ameliorated using best practice including damping down excavated material and haul roads when the roads are dry and covering loads of surplus material leaving and entering the site. Wheel washing will be provided on site.</p>	
	Risk to built services during construction phase	<p>A construction, including traffic, management plan should be implemented during the construction phase to protect local amenities and the integrity and operation of the local road network.</p> <p>Provision of utilities should be carried out in accordance with the recommendations of the relevant statutory bodies (ESB, Irish Water, Eircom etc.)</p> <p>Water Metering should be included in each unit to record consumption.</p>	Construction
	Poor pedestrian access to the Project due to lack of pedestrian crossings	The existing pedestrian crossing on the A38 Lifford Road will be upgraded to a controlled toucan crossing.	Operational
Cultural Heritage	Possibility of encountering archaeological finds/remains within the greenfield areas during ground reduction works	Programme of archaeological works should be implemented in both the greenfield areas and within the Zone of Notification before or during the Construction Phase. This should take the form of archaeological testing if feasible and where this is not feasible (particularly within the Zone of Notification) archaeological monitoring (watching brief) shall be undertaken by a suitably qualified archaeologist, during ground reduction works. The archaeological testing	Construction

Environmental Topic	Potential Impacts (without Mitigation)	Mitigation Measures	Phase
		<p>should be undertaken to the level of the uppermost archaeological horizon or the natural subsoil, whichever is encountered first. This should be undertaken by 360-degree tracked machines fitted with toothless buckets under an archaeological licence from National Monuments Service.</p> <p>Where archaeological testing is not feasible or if it has not been possible to take place in advance of site construction works, a programme of archaeological monitoring shall occur during Construction Phase. Topsoil/overburden shall be removed by 360-degree tracked machines fitted with toothless buckets under constant archaeological supervision, down to the uppermost archaeological horizon, the level of the natural subsoil or formation level, whichever is encountered first.</p>	
	Archaeological material identified during either archaeological testing or archaeological monitoring	If archaeological material is identified during either archaeological testing or archaeological monitoring, provisions will be made by the developer for its preservation <i>in situ</i> or if this is not feasible a fully programme of archaeological excavation and recording (preservation by record). Where archaeological excavations occur, this will be followed by an off-site phase of post-excavation analysis and reporting. The level of the analysis shall be commensurate with the level of archaeology excavated.	Construction
	Potential impact to sub-surface features due to works involving bridge abutment, intermediate pier, crane pad and construction works area for bridge build, and concrete slipway	Recommended that the two fragments of logboat, encountered as part of the UAIA, be subject to detailed recording using laser and/or optical scanning. In addition, consideration must be given to the medium to long term storage of these finds. It is preferable that a suitable location is identified for reburial within the riverbed. (Pre construction mitigation),	Construction

Environmental Topic	Potential Impacts (without Mitigation)	Mitigation Measures	Phase
		<p>Given the high archaeological potential of the intertidal/riverbank areas surrounding the proposed bridge abutment and slipway impacts (including their associated works areas) on the northwest (Lifford) side of the River Foyle, Archaeological Testing of these areas is recommended. This requirement would normally be carried out in advance of construction. However, due to environmental and health/safety concerns identified, the client proposes that this work be undertaken during the construction phase of the project.</p> <p>This work is to be an archaeologically led endeavour, undertaken by a suitable qualified maritime archaeologist with expertise in riverine archaeology. The test-excavation shall be machine assisted and continue to sufficient depth as to adequately assess those deposits present with the identified impact areas. A detailed record of the stratigraphic sequence of the deposits that form the riverbank/bankside area should be also made.</p> <p>Archaeological Monitoring is recommended for the excavation/removal of any bankside/riverbed deposits from those areas surrounding the proposed bridge and slipway structures. Particular attention is to be paid to the location of the intermediate bridge pier. This work is to be carried out by a suitable qualified maritime archaeologist with expertise in riverine archaeology.</p> <p>As part of the monitoring, a sample amount of the removed material (spoil) should subject to metal-detection to assess the potential for the retrieval of small finds from these deposits. In the event that archaeologically significant items are encountered, the percentage of spoil to be detected may be increased. Where little or no items are encountered, the percentage may be decreased.</p>	

Environmental Topic	Potential Impacts (without Mitigation)	Mitigation Measures	Phase
		<p>An archaeologist should be retained for the duration of the relevant works. The archaeologist should be familiar with and experienced in river/estuarine environments and have a good understanding of riverine archaeology and its associated features.</p> <p>The time scale for the construction phase should be made available to the archaeologist, with information on where and when ground disturbances and/or dredging will take place.</p> <p>It is essential for the developer to give sufficient notice to the archaeologist/s in advance of the construction works commencing. This will allow for prompt arrival on site to monitor the ground disturbances. As often happens, intervals may occur during the construction phase. In this case, it is also necessary to inform the archaeologist/s as to when ground disturbance works will recommence.</p> <p>In the event of archaeological features or material being uncovered during the construction phase, it is crucial that any machine work cease in the immediate area to allow the archaeologist/s to inspect any such material.</p> <p>Once the presence of archaeologically significant material is established, full archaeological recording of such material is recommended. If it is not possible for the construction works to avoid the material, full excavation would be recommended. The extent and duration of excavation would be a matter for discussion between the client and the statutory authorities.</p> <p>It is recommended that the core of a suitable archaeological team be on standby to deal with any such rescue excavation. This would be complimented in the event of a full excavation.</p>	

Environmental Topic	Potential Impacts (without Mitigation)	Mitigation Measures	Phase
		<p>Secure site offices and facilities should be provided on or near those sites where excavation is required.</p> <p>Fencing of any such areas would be necessary once discovered and during excavation</p> <p>Adequate funds to cover excavation, post-excavation analysis, and any testing or conservation work required should be made available.</p> <p>Machinery traffic during construction must be restricted as to avoid any of the selected sites and their environs.</p> <p>Spoil should not be dumped on any of the selected sites or their environs.</p>	
Landscape and Visual Impact	Negative visual impact from the Project	<p>It is proposed to re-use earth material for landform rather than removal off site in order to reduce carbon emissions and landfill.</p> <p>The use of timber from sustainable sources will be considered.</p> <p>Use of site contours for new path networks to minimize site impact and the carbon footprint of new path infrastructure.</p> <p>Vehicular roads, main footpaths and cycle ways will use an asphalt surface, matching the specified surface on Strabane North Greenway for consistency. Secondary paths will use either</p>	Construction & Operational

Environmental Topic	Potential Impacts (without Mitigation)	Mitigation Measures	Phase
		<p>reinforced grass or a bound path with local aggregate. Irish Limestone paving will be used around the Hub building. This will ensure that all the main areas of the park will be wheelchair accessible and that defined routes around the building will be DDA compliant.</p> <p>Proposed Play Areas alongside the existing embankment to maximise play value and landform.</p> <p>Plant protection will be managed through BS5837:2012 to minimise loss and/or damage during construction. Planting proposals will be managed through BS 4428:1989.</p> <p>Invasive species on both sides are to be managed by the respective council and include a specific Invasive Species Management Plan.</p> <p>Removal of trees to create entrance/egress to car park is not quantified but large sections of existing planting is to be retained in the proposed car park and enhanced with proposed SUDs mix, wild flower mix, and native and ornamental trees.</p> <p>A section of existing woodland at the entrance to Site is to be retained and seeded with woodland wildflower mix.</p> <p>Native shrubs are proposed around the Hub building and Events space and ornamental shrubs line the main paths from the car park to play areas.</p> <p>Ornamental shrubs, native trees, and wildflower meadow mix are proposed in the Toddler, Junior Play Area and Senior Play Area along with grass mounding.</p>	

Environmental Topic	Potential Impacts (without Mitigation)	Mitigation Measures	Phase
		<p>Long swathes of riverside edge seed mix (WF3) line the river banks with scattered ornamental shrubs and grasses.</p>	
	<p>Change in nature of the landscape character from largely managed grassland to construction site.</p>	<p>This will be for a limited time span, estimated at 9 to 12 months.</p> <p>The size and scale of the proposed works are small and localised when set in the context of the surrounding environment.</p> <p>Good construction management practice will be adhered to informed by Construction Management Plans.</p> <p>The building works are largely contained within the site and the dense, mature woodland strips and vegetative boundaries to the west will be retained and screen the works.</p> <p>Existing tracks, contours and gradients will be used for new path networks to minimise site impact and the carbon footprint.</p> <p>Reuse of earth material for landform rather than removal from site.</p>	<p>Construction</p>
	<p>New pedestrian bridge across River Foyle</p>	<p>Single span structure reduces the negative impact to river/riverbank. Construction Management Plans to minimise disturbance, with focussed, managed lighting to minimise light pollution in area.</p>	<p>Construction</p>
	<p>Change in nature of the landscape character to designed park with</p>	<p>The buildings occupy a small parcel of land, adjacent to existing recreational facilities: the cinema and community centre.</p>	<p>Operation</p>

Environmental Topic	Potential Impacts (without Mitigation)	Mitigation Measures	Phase
	recreational indoor and outdoor facilities.	<p>Existing tree, hedgerow and shrub planting contains and encloses the proposed park:</p> <ul style="list-style-type: none"> • Narrow strip of woodland along western boundary to be retained along with dense, mature trees and planting retained to the west of the site adjacent to the Community Centre and in the proposed car parking area and entrance to the site. • New boundary hedgerow planting to the north of the Lifford site. • New native and specimen trees planting to the north and in the central areas. • New shrub planting to the north east area around the Senior Play Area. • Greater access to riverside. 	
	New pedestrian bridge across River Foyle	<p>The pedestrian bridge has little visibility from the south west on Lifford Bridge due to the curve of the River Foyle. Further screening is provided by existing woodland north of the site and along Barnhill Road.</p> <p>Single span structure to reduce potential negative impact to landscape and visual amenity. Visual association and reference to history and heritage of the area reinforces a sense of place and will be a feature linking communities.</p>	Operation
	Removal of vegetation including trees from Lifford/Strabane side.	<p>Planting protection will be managed through BS5837:2012 to minimise loss and/or damage during construction.</p> <p>Existing areas of native planting will be increased and supplemented to improve biodiversity. Reference will be taken from the National Biodiversity Action Plan (NI) and the Biodiversity Species List for County Donegal (ROI). Replacement planting will be of a reasonable specification for immediate visual impact and amenity.</p>	Construction and Operation

Environmental Topic	Potential Impacts (without Mitigation)	Mitigation Measures	Phase
	Introduction of vehicular roads and pedestrian and cycle paths.	<p>Hard surfaces have been kept to a minimum and confined to the asphalt entrance/egress road and parking, and main pathways. Secondary paths will use either reinforced grass or bound local aggregate. Irish Limestone paving will be used around the Hub building.</p> <p>Accessibility will be a key consideration and design focus for all areas to be accessible for all and limit stepped and ramped access where possible.</p>	Construction and Operation

Appendix 1-3

Strabane Schedule of Mitigation Measures

Appendix 1-3 Strabane Schedule of Mitigation Measures

Environmental Topic	Potential Impacts (without Mitigation)	Mitigation Measures	Phase
Biodiversity	General disturbance of all Fauna	<p>During the construction phase noise may cause disturbance, therefore the adoption of best practice as defined by the Control of Pollution Act 1974 should be implemented.</p> <p>All noise caused by machines should be minimised and should operate during daytime hours only as agreed with the council.</p> <p>With regards to dust it should be ensured that an adequate supply of water is available on site for effective dust suppression.</p> <p>No light should be directed onto woodland features during the construction or operational phase.</p> <p>No excavations are to be left uncovered or without a means of egress (a sloped plank for example) overnight, as otters may fall in or enter in search of food and become trapped.</p> <p>No buildings or storage units are to be left open overnight, as wildlife may enter and become trapped.</p> <p>No poisonous or potentially harmful substances or materials are to be left unsecured</p>	Construction & Operational

Environmental Topic	Potential Impacts (without Mitigation)	Mitigation Measures	Phase
		<p>overnight.</p> <p>No vehicles or machinery are to be used installing any fencing or exclusion gates.</p> <p>The use of rodenticides for any pest control are prohibited on site.</p>	
	Disturbance of Otters	<p>If an otter is discovered or any activity suggesting otters have been disturbed during construction, all work must cease immediately, and the ecologist should be notified as soon as possible to detail how to proceed.</p> <p>It is also recommended that compensatory planting scheme be carried out in order to recreate foraging habitat which may be lost due to the proposed site plans.</p> <p>A minimum of 15 metres should be maintained as a buffer between the proposed development and surrounding water courses.</p> <p>Fencing designs should provide unrestricted access to the site for the otters in an effort to allow otters to use their extended foraging grounds. This is with exception to the exclusion of the car park area during the construction phase to prevent injury to wildlife.</p> <p>A surface water management plan (Appendix 9-11) must be implemented prior to construction works to avoid potential impacts on the water courses and water quality.</p>	Construction & Operational

Environmental Topic	Potential Impacts (without Mitigation)	Mitigation Measures	Phase
		<p>Either a small culvert or small ledge structure must be worked into the bridge landing areas to allow otters free land access across the areas where the bridge makes contact with the banks of the River Foyle. These culverts or ledges will follow best practice guidance and meet current specifications for dimensions. These culverts/ledges must be of minimum 500mm x 600mm diameter and be at least 150mm above the highest water level and run the length of the bridge landing sites extending past the bridge landing to re-join the riverbank allowing the otters free unhindered access along the riverbanks out of the water.</p> <p>A compensatory planting scheme will have to be implemented following the construction phase in order to re-create foraging habitat which may be lost or damaged due to the proposed site plans.</p> <p>The re-planting scheme implemented must use native riverine species for the restoration of the bank habitats temporarily damaged and lost during the construction works. This should also include increasing the size of the thin corridor of reed and large sedge swamp habitat located along the riverine corridor. This type of habitat is highly vital to riverine ecosystems and based on the evidence found is used heavily by the otters within the area. Re-planting and restoring the temporarily lost habitat to help expand this area of reed and large sedge swamp habitat will help to compensate for the permanent loss of habitat experienced from the bridge landings and jetty.</p>	

Environmental Topic	Potential Impacts (without Mitigation)	Mitigation Measures	Phase
	Disturbance of badger sett	<p>Annex Setts to be temporarily closed for duration of works under license from NIEA.</p> <p>Rotary CFA piling technique to be utilised during bridge construction/installation in order to minimise vibration impact on nearby (~40m) badger sett. Use of rock hammers and similar percussive devices for breaking up of car park surfacing etc (within 100m of badger sett) shall not be permitted.</p> <p>Vibration monitoring will be required during bridge and car park construction works to ensure disturbance impact at sett is insignificant.</p>	Construction
	Disturbance of badger sett Impacts to habitat	<p>Buffer planting to shield proximal areas of the sett from view and prevent access to sett by park users.</p> <p>Replanting of disturbed areas to minimise impact to foraging lands.</p> <p>Badger gates to be installed at regular intervals along eastern site boundary to allow access through to foraging lands beyond the site.</p>	Operational
	Disturbance of Atlantic Salmon and Riverine Habitat	Use of single span bridge to avoid in-channel support pier. Temporary crane platform (in the river channel) and working platform (on the river bank) will need to be constructed in order to construct and install the bridge. Mitigation of temporary works platform to prevent silt release through design and control methods.	Construction

Environmental Topic	Potential Impacts (without Mitigation)	Mitigation Measures	Phase
		<p>Seasonal restrictions implemented for bridge construction and associated works to minimise impact on migratory fish.</p> <p>Due to the embankment works close proximity to the River Foyle there is an increased risk of pollution from silt and debris disturbance, potential oil and hydrocarbon spills as well as vibration disturbances. As such, it is recommended that in order to reduce these potential risks all surface water contaminated by spoil during the embankments excavation works should be collected and treated before discharged in order to remove and potential contaminants. Spill kits and plant nappies must be readily available along# with the use of silt fencing and bunds in order to capture any potential silt, oil and hydrocarbon spills and leaks. Part of the process will involve compacting the freshly laid fill in order to achieve robust embankments. This poses a risk to aquatic species due to the potential risk of vibrations produced causing disturbance and disorientating migratory fish e.g: during the salmon run. Similar mitigation to what has been previously mentioned with regards to the bridge landing is required through the implementation of low vibration methods. Conventional vibratory rollers are only to be used with the vibration turned off allowing for a low impact method to ensure the fill can be appropriately compacted.</p> <p>Due to the location or the proposed carpark on the Strabane side of the site, within the old halting area located within the sites southern corner, there is a perceived risk of runoff water from the car park potentially introducing pollutants and hydrocarbons into</p>	

Environmental Topic	Potential Impacts (without Mitigation)	Mitigation Measures	Phase
		<p>the water systems. Therefore, it has been recommended that the SUDS scheme developed to create an environmentally safe drainage system to protect the nearby riverine habitat from potential pollution through surface runoff. The SuDS Drainage scheme is detailed in the Sustainable Drainage Strategy (Appendix 9-3) but in summary comprises hardstanding incorporating areas of permeable surfacing which allows infiltration of runoff waters into a permeable substrate. The substrate will be hydraulically sealed from the underlying made ground (under the permeable substrate) using an impermeable membrane to prevent downward migration of runoff into the underlying groundwater system. This prevents any enhancement of mobilisation of any contamination in the made ground soils, and also prevents any oil spillage from entering the groundwater system. The infiltrated runoff within the substrate layer, which will provide SuDS source control for sediment and pollutants, is captured by a series of laterally-laid perforated pipes, directing the runoff to one of two suitably-sized Class 1 full retention interceptors, discharging to the Park Road Drain along the eastern site boundary. This drainage system will prevent the release of oil to the environment from worst case accidental spillages under all weather conditions.</p>	
	<p>Restriction of mammal movement within the site & lands beyond the site</p> <p>Otter</p> <p>Badger</p>	<p>Mammal gates proposed to be situated at intervals along peripheral fencing within the site to enable badgers and other mammals to move around the site and in and out of the site unrestricted, thereby not interfering with any foraging.</p>	<p>Construction & Operational</p>

Environmental Topic	Potential Impacts (without Mitigation)	Mitigation Measures	Phase
		<p>Exclusion fencing be installed around the perimeter of the halting area (car park development) and temporary construction compounds in order to prevent the badgers and otters from accessing the site during works in order to avoid accidental injury to badgers or otters. This should be removed following completion of construction.</p> <p>Either a small culvert or small ledge structure must be worked into the bridge landing areas to allow otters free land access across the areas where the bridge makes contact with the banks of the River Foyle. These culverts or ledges will follow best practice guidance and meet current specifications for dimensions. These culverts/ledges must be of minimum 500mm x 600mm diameter and be at least 150mm above the highest water level and run the length of the bridge landing sites extending past the bridge landing to re-join the riverbank allowing the otters free unhindered access along the riverbanks out of the water.</p>	
	<p>Disturbance of bats</p> <p>Construction Compound</p> <p>Operational Lighting Scheme</p>	<p>Light spill from the proposed development should be minimised as far as possible.</p> <p>No lighting should be directed towards existing mature vegetation i.e. mature trees or boundary hedgerows.</p> <p>All terrestrial lighting should be fitted with directional hoods and/or luminaires to direct the light downwards onto targeted areas and to prevent unnecessary light-spill.</p>	<p>Construction & Operational</p>

Environmental Topic	Potential Impacts (without Mitigation)	Mitigation Measures	Phase
		<p>Any external lighting around any buildings / structures (e.g. safety lights at the front and rear) should be fitted with motion sensors (timer of up to 60 seconds).</p> <p>The intensity of lighting should be kept to the minimum level required for safety. Low-UV LEDs or low / high pressure sodium lamps will be the preferred bulb type, as they have least adverse effect on bats. Adaptive lighting, presence and absence controls and seasonal lighting should be implemented where possible to minimise the length of time open areas are lit up during the hours of darkness.</p> <p>With respect to the bridge lighting, lights should be directed away from the river and the riverbanks so as to not directly land on the water surface or tress and vegetation on the banks.</p> <p>Lighting of roads, paths, car parks and temporary construction compounds to be ecologically-friendly and in accordance with relevant ecological guidance to strike a balance between safety needs and environmental protection of foraging habitat.</p>	
	Spread of Invasive plant species.	An Invasive Species Management Plan has been prepared and will be implemented during the construction and operation of the Project. This is designed to manage invasive plant species through a combination of ex-situ treatment of key areas in direct conflict with the development and in-situ treatment of other areas within the site.	Construction & Operational

Environmental Topic	Potential Impacts (without Mitigation)	Mitigation Measures	Phase
		<p>Installation of a root barrier membrane within areas of footpaths, roads, hardstandings, buildings etc. which are at risk from potential Japanese Knotweed encroachment. These areas at risk are where Japanese Knotweed remains in close proximity to the structures, or where the required excavation is not achievable.</p>	
	<p>Spread of Invasive bivalve species. Asian Clam</p>	<p>Biosecurity measures (washing facility at Construction Compound) which require measures to eradicate importation of invasive bivalves during the construction phase.</p> <p>Signage to be erected at slipway to advise users to follow Loughs Agency and NIEA Biosecurity Guidance.</p>	<p>Construction</p> <p>Operation</p>
	<p>Disturbance of fish species</p>	<p>Bridge designed to be a single span with no in- channel support structures so as not to disturb the riverbed and channel.</p> <p>Bridge lighting controlled to ensure that there is no direct lighting of the river and to be ecologically-friendly and in accordance with relevant ecological guidance to strike a balance between safety needs and environmental protection of the River Foyle SAC.</p> <p>Seasonal restrictions on bridge construction and piling works within the SAC have been implemented to avoid the most ecologically-sensitive period (salmon runs).</p>	<p>Construction & Operational</p>
	<p>Disturbance of Long Eared Owl</p>	<p>All construction works within 150m of owl nest must be undertaken outside the bird breeding season and under license from NIEA. It is also recommended that replacement raptor boxes be installed within 200m of the area as a compensatory/mitigation measure</p>	<p>Construction</p>

Environmental Topic	Potential Impacts (without Mitigation)	Mitigation Measures	Phase
		to ensure the long-eared owl has appropriate replacement nesting. All works near the long-eared owl nesting site and installation of replacement raptor boxes must be carried out under supervision and installed by a suitably qualified ecologist via the presence of an ecological clerk of works. The use of rodenticides for any pest control are prohibited on site.	
	Disturbance of other potential nests	Any scrub or tree clearance should be kept to a minimum and undertaken outside of the breeding season 1st March – 31st August. (Seasonal Constraints of elements of construction works). Clearance of scrub/hedgerow's during the breeding season be required, this must be undertaken under the supervision of a qualified ecologist and appropriate surveys undertaken prior to any scrub clearance.	Construction
Lands, Soils and Waters	Land Contamination Hot spots of contaminated Shallow Soils	Two small areas of shallow contaminated soils were identified on former railways lands. Remediation by dig and ump technique is required to safeguard risk to huma health.	Construction & Operational
	Erosion of exposed soils/subsoils and entry of sediment laden run-off to nearby surface water.	A Construction Environmental Management Plan (CEMP), agreed by statutory consultees and implemented prior to commencement of construction works. A detailed copy of the oCEMP is presented in Appendix 3-1. An Outline Surface Water Management Plan (SWMP) and Water Quality Monitoring Plan (WQMP) are provided as Appendix 9-11. A	Construction

Environmental Topic	Potential Impacts (without Mitigation)	Mitigation Measures	Phase
		<p>programme of routine surface water and groundwater quality monitoring must be undertaken to ensure that no water pollution is caused during the construction phase.</p> <p>Earthworks shall be carried out in a phased manner, limiting exposed areas and timed to avoid sensitive periods.</p> <p>Stockpiles of topsoil / soils will be covered/dampened during dry weather to prevent spreading of sediment / dust.</p> <p>Run-off from the site will pass through temporary settlement lagoons and / or sediment tanks prior to discharge to the site watercourse / drains.</p> <p>Top-soiling and landscaping of the works will take place as soon as finished levels are achieved.</p> <p>Silt fences will be erected adjacent to watercourses during construction. Matting may also be used to capture silt-laden runoff.</p>	
	Excavations may act as barriers to runoff diverting surface water away from existing routes or cause flooding elsewhere	Overland flow should be captured by strategically sited peripheral cut-off ditches and directed to settlement lagoons or proprietary settlement tanks.	Construction

Environmental Topic	Potential Impacts (without Mitigation)	Mitigation Measures	Phase
	<p>Unsecured loads during transport pose a potential risk to the water environment should there be an accidental leakage/ spillage of materials</p>	<p>Fine materials (e.g. sand and / or cementitious products) shall be covered and secured with heavy duty canvas / tarpaulin. Routine checks should be made for rips and tears and repaired immediately.</p> <p>For vehicles and plant leaving material deposition / stockpile areas, wheel wash facilities shall be installed at the exit and all vehicles will be required to pass through them.</p>	Construction
	<p>Stockpiling of materials may pose a risk as they can be a ready source of loose material if not adequately protected from water and wind.</p>	<p>Avoid unnecessary stockpiling. Stockpiling areas should be appropriately lined and positioned away from watercourses (at least 10m away for all watercourses, and at least 100m for River Foyle SAC).</p> <p>An Outline Surface Water Management Plan (SWMP) and Water Quality Monitoring Plan (WQMP) are provided as Appendix 9-11. A programme of routine surface water and groundwater quality monitoring must be undertaken to ensure that no water pollution is caused during the construction phase.</p> <p>Stockpiles of topsoil / soils will be covered / dampened during dry weather to prevent spreading of sediment/dust.</p> <p>In advance of construction, silt fences and bunds shall be provided around the footprint of any stockpiles.</p>	Construction
	<p>Temporary compaction of soils caused by construction phase plant and site traffic</p>	<p>Overland flow should be captured by strategically sited peripheral cut-off ditches and directed to settlement lagoons or proprietary settlement tanks.</p>	Construction

Environmental Topic	Potential Impacts (without Mitigation)	Mitigation Measures	Phase
	<p>movements, may increase the rate and volume of surface water runoff.</p>		
	<p>Works to existing surface watercourses (i.e. installation of a permanent bridge on the River Foyle) have the potential to cause an obstruction to flow and may alter conveyance capacities</p>	<p>The temporary crane pad shall be constructed, used and dismantled in a manner which shall protect the river from silt release. Temporary and permanent piles will be employed using techniques suitable for high-sensitivity sites. No permanent piles for crane pad.</p> <p>CEMP / Pollution Prevention Plan (PPP) including emergency response plan shall be prepared, agreed by statutory consultees and implemented prior to commencement of construction works. An Outline Surface Water Management Plan (SWMP) and Water Quality Monitoring Plan (WQMP) are provided as Appendix 9-11. A programme of routine surface water and groundwater quality monitoring must be undertaken to ensure that no water pollution is caused during the construction phase.</p> <p>Concrete mixing and washing areas should be located at least 10m from water bodies (100m for River Foyle SAC) and have settlement and re-circulation systems for water reuse. Isolation of working area, protective sheeting to be utilised.</p> <p>Chemical, fuel and oil storage will be undertaken within a site compound, which will be located on stable ground at a low risk of flooding and at least 10 m from any watercourse (100m for River Foyle SAC). The stores will also be locked and sited on an impervious base within a secured bund with 110% of the storage capacity.</p>	<p>Construction</p>

Environmental Topic	Potential Impacts (without Mitigation)	Mitigation Measures	Phase
		<p>The oCEMP sets two types of environmental protection buffer zone, as follows:-</p> <ul style="list-style-type: none"> • 15m Buffer to all watercourses / areas of standing water. • 100m Buffer to River Foyle SAC. <p>Buffer zones must be clearly defined by marker tape and/or posts. Silt fencing must also be placed around the entire perimeter of each buffer zone (including the SAC buffer zone) at the 15m limit to prevent water-laden sediment flowing toward watercourses.</p> <p>Where appropriate, these boundary markers can also be used to restrict access to the buffer zones.</p> <p>Each buffer zone should be assigned a reference number which should be displayed at the buffer boundary limit for easily identification of which buffer works are being completed near or within. This will assist in record keeping and incident reporting.</p> <p>The following activities are routinely prohibited from being carried out within buffer zones:-</p> <ul style="list-style-type: none"> • Oil storage, oil drums / cans and refuelling activities. • Chemical storage (including road salt). • Vehicle servicing / mechanical repairs. 	

Environmental Topic	Potential Impacts (without Mitigation)	Mitigation Measures	Phase
		<ul style="list-style-type: none"> • Vehicle / machinery parking, Lay-up or washing down. • Concrete Mixing, washing out. • Storing of stockpiles of soil, clay, cement, vegetation or any wastes. • Placement of welfare units. • Vehicle movements, unless these cannot be avoided by using an alternative route. • Ground disturbance, excavations, vegetation stripping, application of chemicals* <p>* Unless being carried out as part by trained personnel as part of the implementation of the Invasive species management system</p> <p>For these activities with buffer zones, the following mitigation measures will apply:</p> <ul style="list-style-type: none"> • Where possible silt fencing shall be installed between the activity and any downslope watercourse at the maximum achievable buffer zone distance, or at an appropriate break in slope or natural containment feature if present. • Where installation of silt fencing is not feasible, Installation of shallow (0.2m deep) elongate cut-off trench downslope of the 	

Environmental Topic	Potential Impacts (without Mitigation)	Mitigation Measures	Phase
		<p>activity to catch sediment etc and prevent it reaching the watercourse. Reinstatement thereafter.</p> <ul style="list-style-type: none"> • Silt traps must be deployed in any minor watercourses immediately downstream of the works and inspected on a daily basis with any captured debris / silt removed to the waste storage area at the construction compound. The silt traps must be removed following completion of works within the buffer zone. • Plant nappy style drip trays shall be deployed around all portable oil-containing equipment. These must be inspected on a daily basis and renewed as necessary with all contaminated materials removed from the site with 24 hours. • Double skinned fuel / oil bowsers only to be used. Bowsers to be locked at all times during transport, with access to the fuel controlled by the site manager. Bowsers shall be brought into to the buffer zone as and when required for refuelling of static plant only (cranes and piling rigs) and removed immediately to the construction compound thereafter. No fuel / oil bowsers shall be stored within the buffer zone. • It is permissible to undertake emergency repairs and essential maintenance of static plant, whilst positioned in the buffer zone, 	

Environmental Topic	Potential Impacts (without Mitigation)	Mitigation Measures	Phase
		<p>provided all appropriate oil spill prevention and clean-up measures are in place, including deployment of plant nappies under any works and spill kits are available at close quarters within the buffer zone.</p> <ul style="list-style-type: none"> • Non-putrescible wastes to be stored in covered skips or covered bins which must be removed to the construction compound for emptying on a twice weekly basis. No putrescible wastes permitted in buffer zones. • The following activities are not permitted within Buffer Zones:- <ul style="list-style-type: none"> ○ Chemical storage (including road salt). ○ Vehicle servicing / mechanical repairs (apart from undertaking emergency repairs to static plant – cranes and piling rigs). ○ Vehicle / machinery parking, Lay-up or washing down. ○ Concrete Mixing, washing out. ○ Storing of stockpiles of soil, clay, cement, vegetation or any wastes. ○ Placement of welfare units. 	

Environmental Topic	Potential Impacts (without Mitigation)	Mitigation Measures	Phase
		<ul style="list-style-type: none"> All works within buffer zones must be approved in advance by the site manager. <p>All buffer zones shall be inspected in a daily basis by the Environmental Clerk of works and records kept of these inspections. The inspection must include assessment of the conditions of mitigation measures such as condition and status of silt traps, general site conditions, any evidence of increased pollution risk or spillages, with any significant findings reported immediately to the site manager for appropriate remedial actions to be undertaken if necessary.</p>	
	<p>Installation of culverts and drainage system outfalls can cause damage to bank side / riparian habitats, mobilising sediment and releasing material into the surface watercourse.</p>	<p>Outfall design should comply with good practice and should consider directing each outfall downstream to minimise impacts to flow patterns, avoiding projecting the outfall into the watercourse channel, directing an outfall away from the banks of a river to minimise any potential risk of erosion (particularly on the opposite bank), and minimising the size / extent of the outfall headwall where possible to reduce the potential impact on the banks.</p>	Construction
	<p>Potential leakage or spillage of cement or other potentially polluting substances resulting in surface water contamination.</p>	<p>CEMP / Pollution Prevention Plan (PPP) including emergency response plan shall be prepared, agreed by statutory consultees and implemented prior to commencement of construction works. A detailed oCEMP is presented in Appendix 3-1. An Outline Surface Water Management Plan (SWMP) and Water Quality Monitoring Plan (WQMP) are provided as Appendix 9-11. A programme of routine surface water and groundwater quality monitoring must be undertaken to ensure that no water pollution is caused during the construction phase.</p>	Construction

Environmental Topic	Potential Impacts (without Mitigation)	Mitigation Measures	Phase
		<p>Concrete mixing and washing areas should be located more than 10m from water bodies and have settlement and re-circulation systems for water reuse. Isolation of working area, protective sheeting to be utilised.</p> <p>Chemical, fuel and oil storage will be undertaken within a site compound, which will be located on stable ground at a low risk of flooding and at least 10 m from any watercourse (100m from SAC). The stores will also be locked and sited on an impervious base within a secured bund with 110% of the storage capacity.</p> <p>Spill kits to be retained on-site.</p> <p>For vehicles and plant leaving material deposition/ stockpile areas, wheel wash facilities shall be installed at the exit and all vehicles will be required to pass through them.</p>	
	<p>Temporary compaction of soils caused by construction phase plant and site traffic movements, may increase the rate and volume of surface water runoff.</p>	<p>Overland flow should be captured by strategically sited peripheral cut-off ditches and directed to settlement lagoons or proprietary settlement tanks.</p>	Construction
	<p>Potential accidental leakage or spillage of hydrocarbons from vehicles/ machinery resulting in surface water contamination.</p>	<p>CEMP/ PPP including emergency response plan shall be prepared, agreed by statutory consultees and implemented prior to commencement of construction works. A detailed oCEMP is presented in Appendix 3-1. An Outline Surface Water Management Plan (SWMP) and Water Quality Monitoring Plan (WQMP) are provided as Appendix 9-11. A</p>	Construction

Environmental Topic	Potential Impacts (without Mitigation)	Mitigation Measures	Phase
		<p>programme of routine surface water and groundwater quality monitoring must be undertaken to ensure that no water pollution is caused during the construction phase.</p> <p>Stationary plant will be fitted with drip trays and emptied regularly, and plant machinery will be regularly inspected for leaks with maintenance as required. Spillage kits will be stored at key locations on-site, and all construction activities will comply with a Pollution Incident Control Plan to be prepared by the appointed Contractor prior to commencement of works.</p> <p>Only designated trained and competent operatives will be authorised to refuel plant and all refuelling will be undertaken at designated refuelling areas (e.g. on hardstanding, with spill kits available, and >10 m from water features) where practicable. Appropriate measures will be adopted to avoid spillages.</p> <p>Double-skinned fuel bowsers only to be used for delivery refuelling and limited to traverse areas >10m from a watercourse. Bowsers to be locked at all times.</p>	
	<p>The development will involve cut – fill operations. Imported materials have the potential to be contaminated, introducing new contamination sources to the site</p>	<p>Re-use of site-derived materials between jurisdictions is not permitted.</p> <p>Materials shall be imported subject to compliance with all Duty of Care and Waste Management legislative requirements. All materials derived from sites other than licensed quarries will be considered as waste.</p>	<p>Construction</p>

Environmental Topic	Potential Impacts (without Mitigation)	Mitigation Measures	Phase
		<p>Imported clean topsoil and clay must be imported by pre-movement agreement with regulator bodies will all permissions in place.</p> <p>Imported clean topsoil and clay must be imported by pre-movement agreement with regulator bodies will all permissions in place, including compliance with NIEA Regulatory Position Statement 'Guidance on the Regulation of Greenfield Excavated Materials in Construction and Development' and any other relevant guidance.</p> <p>All imported soils and clays shall be subject to appropriate human health screening assessment testing at a density of at least one sample per 1,000 m³ of materials imported.</p> <p>All imported wastes, including clays, shall be subject to appropriate waste classification (WAC and WM3) testing at a density of at least one sample per 1,000 m³ of materials imported.</p> <p>Proper records shall be kept by the contractor and made available for all topsoil, clay and wastes imported to the site to serve as make-up or fill. Records shall include including waste transfer notes, details of the volume and nature of imported materials, photographic records of the materials, the position and extent of deposits for each individual source, the exact source of the materials and date imported.</p> <p>No suspect contaminated materials or materials from other brownfield sites shall be imported to the site.</p>	

Environmental Topic	Potential Impacts (without Mitigation)	Mitigation Measures	Phase
	<p>Potentially polluting substances such as hydrocarbons, heavy metals, and polycyclic aromatics hydrocarbons (PAHs) may be contained in runoff from roads and car parking areas.</p>	<p>Water quality risk management techniques shall be used to determine the appropriate stormwater management system required for the site. The approach shall utilise SuDS mitigation indices (i.e. those outlined in the SuDS Manual (C753) – Chapter 26) to inform the design of the stormwater management system.</p> <p>This SuDS Drainage scheme is fully detailed in the Sustainable Drainage Strategy (Appendix 9-3) but in summary comprises hardstanding incorporating areas of permeable surfacing which allows infiltration of runoff waters into a permeable substrate. The substrate will be hydraulically sealed from the underlying made ground (under the permeable substrate) using an impermeable membrane to prevent downward migration of runoff into the underlying groundwater system. This prevents any enhancement of mobilisation of any contamination in the made ground soils, and also prevents any oil spillage from entering the groundwater system. The infiltrated runoff within the substrate layer, which will provide SuDS source control for sediment and pollutants, is captured by a series of laterally-laid perforated pipes, directing the runoff to one of two suitably-sized Class 1 full retention interceptors, discharging to the Park Road Drain along the eastern site boundary. This drainage system will prevent the release of oil to the environment from worst case accidental spillages under all weather conditions.</p> <p>The SuDS drainage system including the car park surface substrate drainage pipework and interceptors must be regularly inspected and maintained to ensure ongoing performance and compliance with any statutory flow/quality consents deemed</p>	Operational

Environmental Topic	Potential Impacts (without Mitigation)	Mitigation Measures	Phase
		appropriate by regulatory bodies. Refer to Table 6-1 of the Sustainable Drainage Strategy (Appendix 9-3) for suitable maintenance schedule.	
	Potential to increase flood risk by reducing the area of permeable land cover compared to existing conditions (i.e., greenfield site).	The proposed drainage design will incorporate SuDS components to drain the site. These will be designed in accordance with industry good practice guidance and current planning standards and regulations. Final flows discharged from the site will be controlled to calculated greenfield run-off rates up to the 1 in 100 year plus allowance for climate change rainfall event.	Operational
	Works to existing surface watercourses have the potential to disrupt flow and sediment regime.	Outfall design should comply with good practice and should consider directing each outfall downstream to minimise impacts to flow patterns, avoiding projecting the outfall into the watercourse channel, directing an outfall away from the banks of a river to minimise any potential risk of erosion (particularly on the opposite bank), and minimising the size / extent of the outfall headwall where possible to reduce the potential impact on the banks.	Operational
Air and Climate	Poor communication leading to air quality/issued issues being unresolved	<p>Develop and implement a stakeholder communications plan that includes community engagement before work commences on site.</p> <p>Display the name and contact details of person(s) accountable for air quality and dust issues on the site boundary. This may be the environment manager/engineer or the site manager.</p> <p>Display the head or regional office contact information.</p>	Construction

Environmental Topic	Potential Impacts (without Mitigation)	Mitigation Measures	Phase
	<p>Poor site management leading to adverse air quality/dust impacts</p>	<p>Record all dust and air quality complaints, identify cause(s), take appropriate measures to reduce emissions in a timely manner, and record the measures taken.</p> <p>Make the complaints log available to the local authority when asked.</p> <p>Record any exceptional incidents that cause dust and/or air emissions, either on- or offsite, and the action taken to resolve the situation in the logbook.</p> <p>Hold regular liaison meetings with other high risk construction sites within 500 m of the site boundary, to ensure plans are co-ordinated and dust and particulate matter emissions are minimised. It is important to understand the interactions of the off-site transport/deliveries which might be using the same strategic road network routes.</p>	Construction
	<p>Poor/lack of monitoring leading to adverse air quality/dust impacts</p>	<p>Undertake daily on-site and off-site inspection, where receptors (including roads) are nearby, to monitor dust, record inspection results, and make the log available to the local authority when asked. This should include regular dust soiling checks of surfaces such as street furniture, cars and windowsills within 100 m of site boundary, with cleaning to be provided if necessary.</p> <p>Carry out regular site inspections to monitor compliance with the DMP, record inspection results, and make an inspection log available to the local authority when asked.</p>	Construction

Environmental Topic	Potential Impacts (without Mitigation)	Mitigation Measures	Phase
		<p>Increase the frequency of site inspections by the person accountable for air quality and dust issues on site when activities with a high potential to produce dust are being carried out and during prolonged dry or windy conditions.</p> <p>Agree dust deposition, dust flux, or real-time PM10 continuous monitoring locations with the Local Authority. Where possible commence baseline monitoring at least three months before work commences on site or, if it a large site, before work on a phase commences. Further guidance is provided by IAQM on monitoring during demolition, earthworks and construction.</p>	
	<p>Poor preparation/maintenance of site leading to adverse air quality/dust impacts.</p>	<p>Erect solid screens or barriers around dusty activities or the site boundary that are at least as high as any stockpiles on site.</p> <p>Fully enclose site or specific operations where there is a high potential for dust production and the site is active for an extensive period.</p> <p>Avoid site runoff of water or mud.</p> <p>Keep site fencing, barriers and scaffolding clean using wet methods.</p> <p>Remove materials that have a potential to produce dust from site as soon as possible, unless being re-used on site. If they are being re-used on-site cover as described below.</p> <p>Cover, seed or fence stockpiles to prevent wind whipping.</p>	<p>Construction</p>

Environmental Topic	Potential Impacts (without Mitigation)	Mitigation Measures	Phase
	Adverse air quality impacts from operating vehicles/machinery and travel	<p>Ensure all vehicles switch off engines when stationary - no idling vehicles.</p> <p>Avoid the use of diesel or petrol powered generators and use mains electricity or battery powered equipment where practicable.</p> <p>Impose and signpost a maximum-speed-limit of 15 mph on surfaced and 10 mph on unsurfaced haul roads and work areas.</p> <p>Produce a Construction Logistics Plan to manage the sustainable delivery of goods and materials.</p> <p>Implement a Travel Plan that supports and encourages sustainable travel (public transport, cycling, walking, and car-sharing).</p>	Construction
	Adverse air quality/dust impacts from general construction operations	<p>Only use cutting, grinding or sawing equipment fitted or in conjunction with suitable dust suppression techniques such as water sprays or local extraction, e.g. suitable local exhaust ventilation systems.</p> <p>Ensure an adequate water supply on the site for effective dust/particulate matter suppression/mitigation, using non-potable water where possible and appropriate.</p> <p>Use enclosed chutes and conveyors and covered skips.</p>	Construction

Environmental Topic	Potential Impacts (without Mitigation)	Mitigation Measures	Phase
	Adverse air quality/dust impacts from construction waste management	Avoid bonfires and burning of waste materials.	Construction
	Adverse air quality/dust impacts from demolition	<p>Soft strip inside buildings before demolition (retaining walls and windows in the rest of the building where possible, to provide a screen against dust.</p> <p>Ensure effective water suppression is used during demolition operations. Handheld sprays are more effective than hoses attached to equipment as the water can be directed to where it is needed. In addition, high volume water suppression systems, manually controlled, can produce fine water droplets that effectively bring the dust particles to the ground.</p> <p>Avoid explosive blasting, using appropriate manual or mechanical alternatives.</p> <p>Bag and remove any biological debris or damp down such material before demolition.</p>	Construction
	Adverse air quality/dust impacts from construction	<p>Avoid scabbling (roughening of concrete surfaces) if possible.</p> <p>Ensure sand and other aggregates are stored in banded areas and are not allowed to dry out, unless this is required for a particular process, in which case ensure that appropriate additional control measures are in place.</p>	Construction

Environmental Topic	Potential Impacts (without Mitigation)	Mitigation Measures	Phase
		<p>Ensure bulk cement and other fine powder materials are delivered in enclosed tankers and stored in silos with suitable emission control systems to prevent escape of material and overfilling during delivery.</p> <p>For smaller supplies of fine power materials ensure bags are sealed after use and stored appropriately to prevent dust.</p>	
	<p>Adverse air quality/dust impacts from trackout</p>	<p>Use water-assisted dust sweeper(s) on the access and local roads, to remove, as necessary, any material tracked out of the site. This may require the sweeper being continuously in use.</p> <p>Avoid dry sweeping of large areas.</p> <p>Ensure vehicles entering and leaving sites are covered to prevent escape of materials during transport.</p> <p>Inspect on-site haul routes for integrity and instigate necessary repairs to the surface as soon as reasonably practicable.</p> <p>Install hard surfaced haul routes, which are regularly damped down with fixed or mobile sprinkler systems, or mobile water bowsers and regularly cleaned.</p>	<p>Construction</p>

Environmental Topic	Potential Impacts (without Mitigation)	Mitigation Measures	Phase
		<p>Implement a wheel washing system (with rumble grids to dislodge accumulated dust and mud prior to leaving the site where reasonably practicable).</p> <p>Ensure there is an adequate area of hard surfaced road between the wheel wash facility and the site exit, wherever site size and layout permits.</p> <p>Access gates to be located at least 10 m from receptors where possible.</p>	
Noise and Vibration	Disturbance of badger sett	Rotary piling technique to be utilised during construction of bridge abutments in order to minimise vibration impact on nearby (~40m) badger sett.	Construction
	Noise disturbance outside of regular working hours	<p>Working hours during site construction operations will be restricted to daytime hours from 07:30 hours to 18:00 hours (Monday to Friday) and, as may be required, from 08:00 hours to 13:00 hours (Saturdays). Evening and night-time work is not expected to take place although it is possible that limited 24 hours working may be required to take place on occasion. This will only take place with the prior agreement of Derry & Strabane District Council and Donegal County Council.</p> <p>Night-time Working - If there are items of plant (e.g. dewatering pumps and similar) in use during night-time hours they will be chosen, sited and enclosed such that levels at the nearest properties do not exceed the measured background noise levels.</p>	Construction
	Adverse noise impacts from construction vehicles and plant	An on-site speed limit will be enforced for all traffic. Drivers of vehicles will be advised of the speed limits through the erection of signs i.e. a typically recommended on site speed limit is 10 km/hr.	Construction

Environmental Topic	Potential Impacts (without Mitigation)	Mitigation Measures	Phase
		<p>Where practicable, the use of quiet working methods and the most suitable plant will be selected for each activity having due regard to the need for noise control.</p> <p>Best practicable means will be employed to minimise noise emissions and will comply with the general recommendations of BS 5228. To this end operators will use “noise reduced” plant and/or will modify their construction methods so that noisy plant is unnecessary.</p> <p>By positioning potentially noisy plant as far as possible from noise sensitive receivers the transmission of sound can be minimised. Earth mounds and/or stockpiles of material or perimeter hoarding on site can be used as a physical barrier between the source and the receiver.</p> <p>Mechanical plant used on site will be fitted with effective exhaust silencers. Vehicle reverse alarms will be silenced appropriately in order to minimise noise breakout from the site while still maintaining their effectiveness.</p> <p>All plant will be maintained in good working order. Where practicable, machines will be operated at low speeds and will be shut down when not in use.</p>	

Environmental Topic	Potential Impacts (without Mitigation)	Mitigation Measures	Phase
		<p>Compressors will be of the “noise reduced” variety and fitted with properly lined and sealed acoustic covers.</p> <p>In all cases engine and/or machinery covers will be closed whenever the machines or engines are in use.</p> <p>All pneumatic percussive tools will be fitted with mufflers or silencers as recommended by the equipment manufactures. Where practicable, all mechanical static plant will be enclosed by acoustic sheds or screens.</p>	
	Lack of staff training leading to adverse noise impacts	<p>Employees working on the site will be informed about the requirement to minimise noise and will undergo training on the following aspects:</p> <ul style="list-style-type: none"> • The proper use and maintenance of tools and equipment. • The positioning of machinery on-site to reduce the emission of noise to the noise sensitive receivers. • Avoidance of unnecessary noise when carrying out manual operations and when operating plant and equipment. <p>The use and maintenance of sound reduction equipment fitted to power pressure tools and machines.</p>	Construction
	Lack of monitoring leading to adverse noise impacts	Responsible Person –The Contractor will appoint a responsible and trained person who will be present on site and who will be willing to answer and act upon complaints and queries from the local public.	Construction

Environmental Topic	Potential Impacts (without Mitigation)	Mitigation Measures	Phase
		<p>Where excessive noise levels are recorded, further mitigation measures will be employed which may include temporary wooden hoarding / acoustic screening to be installed to a height of no less than 2.5m around areas of construction where loud noise levels occur.</p> <p>Where deemed necessary due to excessive impact or complaints received, noise and vibration monitoring will be undertaken during construction works to determine noise and vibration levels at sensitive receivers. On the basis of the findings of such noise and vibration monitoring, appropriate noise and vibration mitigation measures will be implemented to reduce noise and vibration impacts.</p>	
	Risk of cosmetic damage from vibration frequency	The contractor will ensure that the TII Guidelines which identify limits for protection against cosmetic damage as a function of vibration frequency are not exceeded through the use of the selected low vibration piling method.	Construction
	General disturbance from vibration	<p>Agree working hours for piling activities for less sensitive time or days i.e during the day-time between 0700h and 1900h for Monday to Friday, avoiding weekends.</p> <p>Use of minimal vibration piling equipment i.e using a CFA drill.</p> <p>An alternative low vibration method for removal of the hardstand not involving the use of rock hammers or similar percussive methods must be deployed.</p>	Construction

Environmental Topic	Potential Impacts (without Mitigation)	Mitigation Measures	Phase
		<p>Carry out a baseline vibration survey to determine current ambient vibration levels at the proposed piling and vibration-sensitive receptor locations.</p> <p>The measurement location at the vibration-sensitive receptor should be close to, but far enough away so not to disturb i.e 10 m away.</p> <p>Identify vibration levels the vibration-sensitive receptors are currently exposed to, and assess the potential impact from CFA piling on the vibration-sensitive receptors.</p> <p>Determine action and limit values based on the baseline vibration survey and available guidance from international standards.</p> <p>Install continuous vibration monitoring equipment at the piling location and the vibration-sensitive receptor location measuring the vibration levels.</p> <p>Monitor the vibration levels and compare with the agreed action and/or limit values.</p> <p>It is recommended the PPV is measured and if possible, the weighted acceleration and hence the VDV could also be measured (and/or determined).</p>	
Material Assets (including traffic)	Increase in dust and dirt from construction vehicles	During the construction phase the increase in dust and dirt will be minimised by effective site management. The construction routes will be discussed and agreed with respective roads departments and disruption will be mitigated. The construction routes and the phasing of the scheme will be agreed with respective roads departments.	Construction

Environmental Topic	Potential Impacts (without Mitigation)	Mitigation Measures	Phase
		<p>Wheel washing facilities will be provided for all construction vehicles and construction areas will be fenced-off.</p> <p>Any impact will be ameliorated using best practice including damping down excavated material and haul roads when the roads are dry and covering loads of surplus material leaving and entering the site. Wheel washing will be provided on site.</p>	
	Risk to built services during construction phase	<p>A construction, including traffic, management plan should be implemented during the construction phase to protect local amenities and the integrity and operation of the local road network.</p> <p>Provision of utilities should be carried out in accordance with the recommendations of the relevant statutory bodies (NIE, NI Water, DfI Rivers etc.)</p> <p>Water Metering should be included in each unit to record consumption.</p>	Construction
	Poor pedestrian access to the Project due to lack of pedestrian crossings	A new toucan crossing will be introduced on the A5 Barnhill Road some 100m north of the ADSA Roundabout.	Operational
Cultural Heritage	Inadvertent damage during construction works to Bridge (IHR 00017:054:00)	This feature should be clearly fenced off during Construction Phase to prevent vehicular access to it. Should vegetation removal or subsequent conservation of this structure be required, this should be done in a careful and controlled manner and under advice from a conservation specialist.	Construction

Environmental Topic	Potential Impacts (without Mitigation)	Mitigation Measures	Phase
	<p>Possibility of encountering archaeological finds/remains or remains associated with the industrial heritage sites recorded in this area during ground reduction works</p>	<p>A programme of archaeological works taking the form of archaeological monitoring (watching brief) shall be undertaken by a suitably qualified archaeologist, during ground reduction works. The programme of archaeological monitoring shall occur during Construction Phase. Topsoil/overburden shall be removed by 360-degree tracked machines fitted with toothless buckets under constant archaeological supervision, down to the uppermost archaeological horizon, the level of the natural subsoil or formation level, whichever is encountered first. This shall be done under an archaeological licence from Historic Environment Division within the Department for Communities (HED:DfC). The watching brief shall include archaeological monitoring of soil removal or landscaping of the railway embankment (not a recorded feature of industrial heritage), should this occur.</p> <p>If archaeological material (including industrial heritage) is identified during archaeological monitoring, provisions will be made by the developer for its preservation <i>in situ</i> or if this is not feasible a fully programme of archaeological excavation and recording (preservation by record). Where archaeological excavations occur, this will be followed by an off-site phase of post-excavation analysis and reporting. The level of the analysis shall be commensurate with the level of archaeology excavated.</p>	Construction
Landscape and Visual Impact	Negative visual impact from the Project	<p>It is proposed to re-use earth material for landform rather than removal off site in order to reduce carbon emissions and landfill.</p> <p>The use of timber from sustainable sources will be considered.</p>	Construction & Operational

Environmental Topic	Potential Impacts (without Mitigation)	Mitigation Measures	Phase
		<p>Use of site contours for new path networks to minimize site impact and the carbon footprint of new path infrastructure.</p> <p>Vehicular roads, main footpaths and cycle ways will use an asphalt surface, matching the specified surface on Strabane North Greenway for consistency. Secondary paths will use either reinforced grass or a bound path with local aggregate. Irish Limestone paving will be used around the Hub building. This will ensure that all the main areas of the park will be wheelchair accessible and that defined routes around the building will be DDA compliant.</p> <p>As much of the wetland habitat as possible will be retained. An elevated boardwalk will minimise disruption to existing habitats, planting and wildlife through routes during construction and use. Timber guarding will be incorporated where falls exceed 600mm and an assistance edge will be provided elsewhere.</p> <p>Conservation of the wetland areas with proactive biodiversity and environmental training programmes will encourage its enhancement and protection. Allocation of space for outdoor learning, interpretation and organised group activities will promote involvement and ownership by the community.</p>	

Environmental Topic	Potential Impacts (without Mitigation)	Mitigation Measures	Phase
		<p>Invasive species on both sides are to be managed by the respective council and include a specific Invasive Species Management Plan.</p> <p>The Halting Site - the existing concrete base is to be removed and seeded with native wildflower/grass meadow mix.</p> <p>Additional native whip planting will be planted in areas that do not conflict with the proposed A5 and where it is agreed will be beneficial.</p> <p>The removal of trees to create entrance/egress to the car park is not quantified but a native hedgerow is proposed along the eastern edge of the entrance/egress road.</p> <p>The car park has asphalt parking spaces and is planted with a SUDs mix, wild flower mix (WF1), and native and ornamental trees.</p> <p>Riverside edge seed mix is proposed west of the car park in existing woodland on the north west border of the site.</p> <p>The majority of the centre of the site is wetland and marsh, which will be retained with some augmentation with wild flower seeding (WF1) and native tree planting.</p> <p>A native hedgerow is proposed for the northern boundary, which will give access to the Strabane North Greenway.</p>	

Environmental Topic	Potential Impacts (without Mitigation)	Mitigation Measures	Phase
	Construction of the bridge landing, paths and boardwalk.	The construction works are largely contained within the site and screened by the existing mature boundary trees and planting, particularly to the south of the site and by the mature trees lining Barnhill Road.	Construction
	Entrance/egress and car parking located on existing halting site	The existing access road from the roundabout to the halting site is to be repurposed and resurfaced and is screened by retained naturalised vegetation.	Construction
	Removal of vegetation to accommodate pedestrian paths including the Strabane North Greenway.	Existing vegetation is to be largely retained and protected where possible. Any removal will be compensated for by extensive new tree, shrub and wildflower planting to enhance existing habitats, create new ones and increase biodiversity. Existing tracks, contours and gradients will be used for new path networks to minimise site impact and the carbon footprint.	Construction
	New pedestrian bridge across River Foyle	Single span structure reduces the negative impact to river/riverbank. Construction Management Plans to minimise disturbance, with focussed, managed lighting to minimise light pollution in area.	Construction
	Management of the landscape, increasing access to more diverse habitats and improved biodiversity.	Landscape impact will be positive. Glimpses of the site from Lifford Road bridge and the Lifford side of the site will be positive.	Operation
	New pedestrian bridge across River Foyle	The pedestrian bridge has little visibility from the south west on Lifford Bridge due to the curve of the River Foyle. Further screening is provided by existing woodland north of the site and along Barnhill Road.	Operation

Environmental Topic	Potential Impacts (without Mitigation)	Mitigation Measures	Phase
		Single span structure to reduce potential negative impact to landscape and visual amenity. Visual association and reference to history and heritage of the area reinforces a sense of place and will be a feature linking communities.	
	Removal of vegetation including trees from Lifford/Strabane side.	Planting protection will be managed through BS5837:2012 to minimise loss and/or damage during construction. Existing areas of native planting will be increased and supplemented to improve biodiversity. Reference will be taken from the National Biodiversity Action Plan (NI) and the Biodiversity Species List for County Donegal (ROI). Replacement planting will be of a reasonable specification for immediate visual impact and amenity.	Construction and Operation
	Disturbance of wetland habitat	An elevated boardwalk and timber guarding will minimise disruption to existing habitats, planting and wildlife. Proposed development will include conservation of the wetland areas with proactive biodiversity and environmental training programmes to encourage its enhancement and protection.	Construction and operation
	Introduction of vehicular roads and pedestrian and cycle paths.	Hard surfaces have been kept to a minimum and confined to the asphalt entrance/egress road and parking, and main pathways. Secondary paths will use either reinforced grass or bound local aggregate. Irish Limestone paving will be used around the Hub building. Accessibility will be a key consideration and design focus for all areas to be accessible for all and limit stepped and ramped access where possible.	Construction and Operation