

5.0 ACCIDENT PREVENTION AND MANAGEMENT

During the construction phase of the development there is the risk of accidents, for example equipment breakdowns, enforced shutdowns, fires, vandalism, flooding or other incidents which may cause an unexpected change to normal operations.

The risk assessment for the site included as Appendix C identifies the likelihood, probability, risk management technique and consequence of an accident for a range of various scenarios on the site.

In the event of an accident occurrence a formal record must be taken to ensure actions can be made to prevent it occurring again in the future. The Table below sets out an example table that can be used to record this information, this should be completed by the site operator/owner with all relevant information.

<i>Accident that occurred</i>	<i>Date of accident</i>	<i>Persons involved</i>	<i>Actions to prevent future re-occurrence</i>	<i>Comments</i>

6.0 CHANGING CLIMATE

As a result of climate change there is widely accepted to be future changes in temperatures and rainfall. This means that river levels in the River Derwent could rise in the future, although this is limited somewhat by the presence of the upstream sluice that diverts flood water to the Sea Cut. The site should be designed to be resilient to future changes in climate and increase river heights. However it is unlikely that river levels will rise to a level whereby the clear span bridge impedes flow through the Derwent.

7.0 COMPLAINTS PROCEDURE

In the event of a scenario arising that a member of staff or third party is unhappy with they should follow the formal complaints procedure for the wider development and the company that manages the site at the time. This management document is relevant to the construction of a boardwalk and a clear span bridge, and operation of the clear span bridge post construction. Therefore the following procedure should be used for all complaints relating to the development.

In summary, the procedure should:

- Advertise how to make complaints;
- Give a contact method;
- Acknowledge the complaints and provide details on what the next steps are; and
- Give you further actions to take if you are not content with the outcome of the complaints procedure.

Complaints about the development should be thoroughly investigated and necessary changes to the management of the development should be undertaken within reasonable timescales. These will be situation specific and therefore have not been discussed here.

8.0 MANAGING STAFF COMPETENCE AND TRAINING RECORDS

During construction phase, the site will need to have enough staff and resources to ensure that the development can take place effectively and efficiently, in order to comply with the permit.

The site operator should fill in the table below, expanding as necessary, to detail who is responsible for what procedures, who is technically competent, named staff roles and what training is required or has been completed.

<i>Procedure</i>	<i>Responsible staff member</i>	<i>What training carried out?</i>	<i>Further training needed?</i>	<i>Comments</i>

9.0 KEEPING RECORDS

Any and all documents relevant to the development and associated infrastructure or maintenance must be kept for as long as detailed on the document or for no less than 3 years as a minimum.

Records are required to provide evidence on the management of the development and associated infrastructure. These could include (but are not limited to):

- permits issued to the site
- other legal requirements
- risk assessments
- all management system plans
- any plans required by the application or permit
- all operating procedures
- staff competence and training (for example qualifications, courses attended)
- emissions and any other monitoring undertaken (for example water samples)
- compliance checks, findings of investigation and actions taken
- complaints made, findings of investigation and actions taken
- audits of management systems, findings (reports) and actions taken
- management reviews and changes made to the management system
- where applicable, certification audit reports and any actions carried out

10.0 REVIEWING THE MANAGEMENT SYSTEM

In the event that any changes take place on the site that affect the development the management system should be updated to reflect this as necessary.

The management system should also be updated to reflect any lessons learnt from accidents on the site or any changes in permit type.

11.0 ENSURING PEOPLE KNOW WHAT TO DO

All staff should have access to the management system for the development and understand the risk involved with such a system. Staff should be made aware of the development and the management of it as part of any induction on the site and named contacts should be given in the event of an issue arising from the development to minimise the time that any issues are outstanding.

Status	Originator	Checked by	Date
Final	J. Shelton	D. Nicholls	17/06/19

Appendix A
Proposed Site Layout

Appendix B
Management Schedule

MAINTENANCE SCHEDULE

Contents

1	Regular Maintenance.....	Error! Bookmark not defined.
2	Occasional Maintenance.....	17
3	Pipework, Manhole Access, and General Maintenance.....	Error! Bookmark not defined.

1 MAINTENANCE DURING CONSTRUCTION

Inspection date	Regular Maintenance	Frequency	Details	Y/N	Action required	Date completed
General inspection items (During Construction)						
	Flood risk. Ensure no unnecessary barriers or disturbance to flow occurs during construction.	As required				
	Sedimentation. Ensure that sediment mobilisation is minimised during construction and no disturbance occurs where avoidable.	As required				
	Habitat. Ensure no aquatic habitats are disrupted where avoidable during construction.	As required				
	Inspection of water quality. Ensure harmful construction material is not entering watercourse through runoff.	As required				
	Lighting. Ensure no unnecessary lighting occurs on watercourse and lighting is limited to construction working hours.	As required				

2 REGULAR MAINTENANCE OF CLEAR SPAN BRIDGE

Inspection date					
Occasional Maintenance	Frequency	Details	Y/N	Action required	Date completed
General inspection items (Post Construction)					
Ensuring that bridge remains structurally sound following construction and is not at risk from failure.	5 Years or appropriate				

3 OCCASIONAL MAINTENANCE OF CLEAR SPAN BRIDGE

Inspection date					
Pipework and Manhole Access Maintenance	Frequency	Details	Y/N	Action required	Date completed
General inspection items (Post Construction)					
Ensure no blockage occurs as a result of the bridge and flow is not impeded.	Bi-annually				
Ensure that the bridge remains an adequate distance from the river level of the River Derwent.	Bi-annually				
Inspection of bridge's structural integrity.	Bi-annually				

Appendix C

Risk Assessment in support of development

This risk assessment has been prepared to support section 4c of an Environmental Permit application for a development at Forge Valley, Scarborough

Hazard	Receptors	Pathway (s)	Risk Management Technique	Probability of Exposure	Consequence	Overall Risk
Reducing the capacity of the flood plain and increasing risk to the local population.	Local population.	Out of channel flow.	Include a condition that the land surrounding the bridge and ramp or steps shall not be raised. Development proposals indicate the ground levels across the site are being retained as close to existing as possible.	Low.	Increased flood risk, impact on local population and businesses, damage to property.	Low.
Working close to a structure may cause damage or increase flood risk.	Local population.	Out of channel flow.	Include a condition that works are not carried out within 8m of a flood risk management structure or works.	Low.	Increased flood risk, impact on local population and businesses, damage to property.	Low.
Working in the channel may increase flood risk to the local population.	Local population.	Out of channel flow.	Include a condition that works are not carried out within 100m of any non-agricultural buildings in the flood plain.	Low.	Increased flood risk, impact on local population and businesses, damage to property.	Low.
Will provide capacity for flood water and potential debris.	Local population.	Out of channel flow.	Include a condition that the soffit is a minimum of 0.6m above the maximum flood level in the river channel. Foundations must be set back suitably such that they do not impact on flood flows.	Medium.	Increase flood risk, impact on local population and businesses, damage to property.	Low.
Construction works that dig into the ground can cause damage to scheduled monuments.	Historic environment.	During construction works.	Include a condition that prohibits works within 50m of a Scheduled Monument.	Low.	Physical damage to designated sites.	Low.

This risk assessment has been prepared to support section 4c of an Environmental Permit application for a development at Forge Valley, Scarborough

Hazard	Receptors	Pathway (s)	Risk Management Technique	Probability of Exposure	Consequence	Overall Risk
The activity can cause increased sedimentation and other damage, which may be large enough to adversely affect the conservation site or habitat.	Habitats and species.	Change in quantity and dynamics of water flow; change in river connectivity; change in structure and substrate of river bed.	The operating techniques must address how the operator will manage and minimise silt arising through their activity. The necessary measures should be in place before work begins.	Medium.	Non-natural flow regimes may reduce flow variability; increased flows may increase floodplain connectivity.	Low
Spread of non-native species.	Habitat and species.	Spread of species in the catchment caused by non-native species being disturbed and spread downstream or transported by machinery and equipment to another site.	Operating techniques should include a plan of biosecurity and site management measures to prevent the spread of invasive non-native species and plants and animal diseases.	Medium.	Loss of or damage to habitats and species.	Low.
Works in watercourse disturb habitats or species.	Habitats and species.	Change in quantity and dynamics of water flow; Change in river depth and width variation.	To qualify as a clear span bridge the works must involve no bed or bank reinforcement and no in-stream pier/support.	Medium.	Direct loss of or damage to habitat/species; indirect changes to ability of river to form and sustain habitat.	Low.

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Hazard	Receptors	Pathway (s)	Risk Management Technique	Probability of Exposure	Consequence	Overall Risk
Lighting used during the construction phase.	Species.	Lighting.	Include a condition that there should be no light spill from external artificial lighting into the watercourse or adjacent river corridor habitat. Minimise light usage when construction is not in operation.	Medium.	Loss of or damage to species.	Low.
Loss of connectivity.	Species.	Connectivity.	Include the following conditions: bridge deck should not be wider than 4.2m, the bridge should not be associated with a public highway, the bridge will not be placed across a watercourse over 8m wide, ensure that there are no bridges or culverts with 200m of bridge.	Low	Loss of or damage to species.	Low.
Direct run-off from site, or in-channel flow from works within bank.	Water quality.	Increase siltation caused by working in the river, direct disturbance whilst undertaking construction works or footprints of the finished works.	Include a condition that risks to water quality and sediment control will be minimised.	Medium.	Increase in sediment load.	Low.

This risk assessment has been prepared to support section 4c of an Environmental Permit application for a development at Forge Valley, Scarborough

Hazard	Receptors	Pathway (s)	Risk Management Technique	Probability of Exposure	Consequence	Overall Risk
Changes in: quantity and dynamics of water flows; connection to groundwater bodies; river connectivity; river depth and width variation; structure and substrate of river bed; and structure of riparian zone.	WFD biological quality elements.	Changes in flow, water quality or to habitat.	Include general conditions which limit size, scale and magnitude of loss.	Medium.	Deterioration of ecological status through loss or harm to biology.	Low
Deterioration of high morphology status as measured by WFD.	WFD hydro morphology quality elements.	Geomorphological processes altered by activity.	Include a condition that prohibits the activities in or within 100m of high morphology status water bodies.	Low.	Deterioration of high morphology status measured by WFD.	Low.

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This document has been prepared in accordance with procedure OPIP02 of the Fairhurst Quality and Environmental Management System

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