

Environmental Management Plan (EMP)

Project Name:	Neath Town Centre – Phase 2	Contract No:	TBA
Completed by:	Jason Bowen	Date:	06.03.19

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This document forms Appendix B.10 of the Construction Phase Plan.

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1. Introduction

This EMP has been prepared in accordance with the Kier SHEMS Environmental Management Standards and Guidance. It identifies specific environmental issues associated with Neath Town Centre and stipulates the procedures that will be used to manage them. Relevant environmental information will be communicated as required.

All amendments to this EMP must be made and documented by project management in consultation with the Safety, Health and Environmental Manager or Environmental Manager / Adviser.

2. Environmental Aspects & Impacts

Prior to commencement of the project an environmental aspect and impact assessment must be undertaken in accordance with the Risk and Impact Management Standard [SHEMS-STD-GR-014](#). For guidance on completing the assessment please contact your Safety, Health and Environmental Manager or Environmental Manager / Adviser.

The assessment looks at each site activity against the following environmental aspects:

- Emissions to Air
- Emission to Land
- Emissions to Water
- Waste Generation
- Nuisance & Environmental Health
- Ecology & Biodiversity
- Cultural Heritage
- Use of Raw Materials
- Use of Natural Resources

Details of the control measures identified in the assessment will be communicated to relevant subcontractors. Subcontractors must manage all risks / impacts associated with their work activity / package in accordance with this document.

Where the subcontractor identifies additional environmental risk / impacts the Project Environmental Co-ordinator (PEC) and Project Manager must be informed and the Aspect & Impact Assessment must be reviewed and amended as required.

In the event subcontractors undertake works that require reference to document(s) listed in section 2.3 of the Construction Phase Plan (Part A), these will be provided / incorporated into their contract as part of the subcontract documentation.

Kier may, from time to time, externally communicate information relating to significant environmental aspects and the company's performance. Such decisions will be made by appropriate management and documented.

3. Specific Project Environmental Requirements

This section incorporates information derived from documents scheduled in 2.3 of the Construction Phase Plan.

3.1 Unexploded Ordnance

- N/A

3.2 External (Client / Enforcing Authority) Requirements

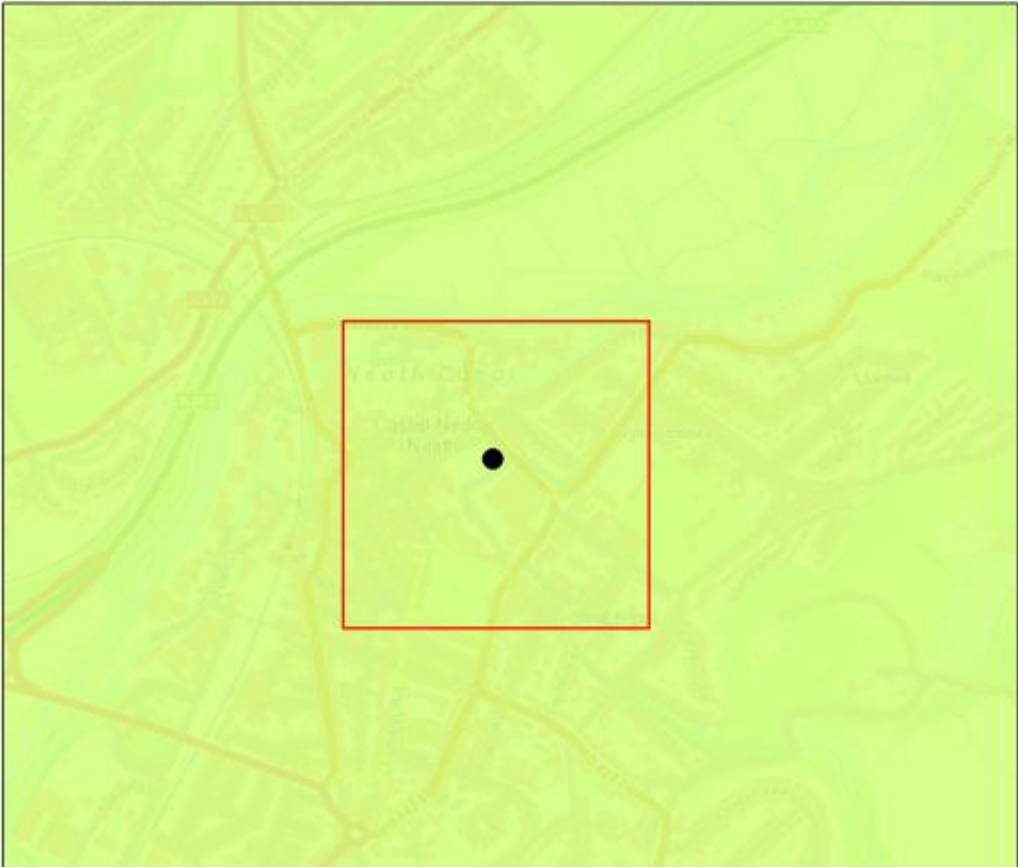
- **Planning conditions**
- Site Hours – 08.00 – 18.00 Monday – Friday & 08.00 – 13.00 Saturday , Sunday working to be agreed with local authority
- There shall be no vehicular access or parking within the service yard, apart from the access for delivery/servicing vehicles, stopping and unloading. There shall be no external storage whatsoever, outside of the identified refuse storage areas.
- In the event that contamination is found at any time when carrying out the approved development that was not previously identified, work on site shall cease immediately and shall be reported in writing to the Local Planning Authority. A Desk Study, Site Investigation, Risk Assessment and where necessary a Remediation Strategy must be undertaken in accordance with the following document:- Land Contamination: A Guide for Developers (WLGA, WAG & EAW, July 2006). This document shall be submitted to and agreed in writing with the Local Planning Authority. Prior to occupation of the development, a verification report which demonstrates the effectiveness of the agreed remediation, shall be submitted to and agreed in writing with the Local Planning Authority
- The 5 trees identified with the Tree report (dated October 2018) located within Area 1 that are to be retained shall be protected during construction in accordance with BS5837:2012 Trees in relation to design, demolition and construction

3.3 Surface Waters, Wells and Source Protection Zones

Wales – click [here](#) for Source Protection Zones

Project Located Within	Applicable (Y / N)	Notes
Flood Zone 1, 2 or 3	N	Where one or more of the items listed opposite are applicable, please contact your environmental adviser / manager immediately.
Source Protection Zone 1	N	
50m of a Main River	N	
50m of any other watercourse	N	
250m of a Drinking Water Protection Area	N	
250m of a Drinking Water Safeguard Zone	N	
8m of a Main River culvert / flood defence	N	
16m of a tidal river or culvert / flood defence	N	
16m of a sea defence structure	N	

GeoIndex Report



Map Key

Hydrogeology 1:625,000 scale

- Aquifers with significant intergranular flow
- Highly productive aquifer
 - Moderately productive aquifer
 - Low productivity aquifer
- Aquifers in which flow is virtually all through fractures and other discontinuities
- Highly productive aquifer
 - Moderately productive aquifer
 - Low productivity aquifer
- Rocks with essentially no groundwater

Selection Results

Hydrogeology 1:625,000 scale

Rock unit	Character	Summary
SOUTH WALES UPPER COAL MEASURES FORMATION	Moderately productive aquifer	Regional, cyclic multi-layered aquifer with moderate yields from sandstones and many springs. Mine water quality poor but elsewhere reasonable.

3.4 Contaminated Land / Groundwater & Dewatering

- Areas used for the disposal of other wastes,
- Waste classification testing for existing demolition hardcore undertaken previously ,further testing to be undertaken
- Re-use or disposal of groundwater, e.g. permits required / obtained.
As Per NRW PS

3.5 Standing Heritage & Archaeology

- N/A

3.6 Sensitive Neighbours

- Schools. – Alterman Davies Primary School
- Healthcare facilities. – Gnoll Nursing Home
- Places of worship. – St David's Church
- Residential areas. – Neighbouring communities
- Local Businesses

3.7 Ecology & Biodiversity

Project Located Within	Applicable (Y / N)	Notes
Site of Special Scientific Interest (SSSI)	N	Where one or more of the items listed opposite are applicable, please contact your environmental adviser / manager immediately.
Special Area of Conservation (SAC)	N	
Special Protection Area (SPA)	N	
RAMSAR	N	
National Nature Reserve (NNR)	N	
Local Nature Reserve (LNR)	N	
Local Wildlife Site (LWS)	N	

- Tree retention and protection. 5 no along Water St

4. General Project Environmental Requirements

4.1 Waste Management

All waste will be managed in accordance with the Waste Management Standard [SHEMS-STD-GR-065](#) and where relevant, the Earthworks and Contaminated Land Procedure [SHEMS-STD-GR-061](#).

Neath Town Centre will manage waste through the implementation of a bespoke version of the Building Research Establishment (BRE) SMARTWaste tool. The project team will use SMARTWaste to identify and record waste streams, forecast waste volumes and identify suitable methods to eliminate, or where this is not practicable, reduce waste generated by the project.

When considering management options for identified waste streams, Kier and supply chain members will adhere to the principles outlined in the waste hierarchy below.



Kier and its sub-contractors must ensure waste is stored away from drains, boreholes, wells and controlled waters. Containers shall be in good condition and, where required, covered to prevent dust and litter being blown out. If there is any likelihood of stored waste contaminating the area surrounding the site, all necessary steps must be taken to ensure no contamination occurs. This may include the use of containment bunds with rain shelters and the use of sealed containers, i.e. clip-top drums and fluorescent tube coffins.

Before waste is treated and / or removed from Neath Town Centre, all subcontractors / waste contractors must provide the project team with legible copies of the following documentation:

- Environmental permits (mobile plant licences) and exemption certificates authorising on-site crushing and screening activities.
- Waste Carriers Registration Certificates.
- Environmental Permits, (Waste Management Licences and Pollution Prevention Control Permits).
- Notification certificate of exemption from environmental permitting.

The project team and, where applicable, subcontractors will ensure that the removal of all inert / non-hazardous waste is recorded on Waste Transfer Notes (WTNs). Legible copies of all WTNs must be kept for a minimum of two years following collection. These documents will be stored on site and made available on request.

The project team and, where applicable, subcontractors will ensure the removal of all hazardous waste is recorded on Hazardous / Special Waste Consignment Notes (H/SWCNs). Legible copies of all H/SWCNs must be kept for a minimum of three years following collection. These documents will be retained on site and made available on request.

Legible copies of all WTNs and H/SWCNs, recording the removal of waste from Neath Town Centre must be issued to Kier. This includes waste generated on site by subcontractors.

A premises code will be obtained from [Natural Resources Wales](#) in accordance with section 4.4.1 of the Waste Management Standard [SHEMS-STD-GR-065](#). The premises code for the project will be registered upon Contract Award

4.2 Storage of Fuel, Oils & Building Chemicals

Fuel, oil and chemicals will be managed in accordance with the Pollution Prevention Standard [SHEMS-STD-GR-064](#) and COSHH Standard [SHEMS-STD-GR-051](#). Please also refer to Oil & Fuel Storage – Above Ground [SHEMS-MST-BUK-0080](#) and Chemical & Paint Storage [SHEMS-MST-CIS-0042](#) Minimum Standards.

Containers must be stored within a Spill Nappy (or similar), bund or any other suitable secondary containment system (SCS). All containers must be located in a safe place to minimise the risk of damage and locked-off when not in use.

For oil tanks, intermediate bulk containers and mobile bowsters the SCS must be able to hold:

- Where one container is being stored - a minimum of 110% of the total volume.
- Where more than one container is being stored - a minimum of 110% of the largest container's storage volume, or at least 25% of their total volume (whichever is greater).
- For drum storage, the interceptor tray must be able to hold at least 25% of the total storage capacity of the drums.

Bunded areas must be made impermeable to water and oil and protected from the ingress of rainwater. The base and walls must not be penetrated by any valve, pipe or opening that is used for draining the system.

4.3 Managing Concrete Wash Water

Concrete wash water contains suspended solids and is highly alkaline (has a high pH). Solutions that are highly alkaline are as harmful to the environment as strong acids. Unlike wet concrete that is poured into the ground, concrete wash water is very mobile and can easily enter drains and controlled waters, e.g. groundwater, rivers and reservoirs, causing significant harm to aquatic life and the environment.

The hierarchy of control described in BUK Managing Concrete Wash Water [SHEMS-MST-BUK-0082](#) will be used to identify and implement suitable control measures for managing concrete wash water. Options 1C-3A will **only** be considered where the subcontractor and / or concrete supplier can demonstrate 1A and 1B are not practicable. A member of the Kier SHE team must approve selected management options prior to concrete being delivered to site.

4.4 Particulate Matter (Dust) & Noise

Dust and noise will be managed in accordance with the Nuisance Management Standard [SHEMS-STD-GR-063](#) and Pollution Prevention Standard [SHEMS-STD-GR-064](#).

4.4.1 Mobile Crushing & Screening Process

Crushing and screening will be managed in accordance with the Waste Management Standard [SHEMS-STD-GR-065](#) and the Demolition – Mobile Crushing and / or Screening Operations Minimum Standards ([SHEMS-MST-CIS-0051](#)).

Crushing and screening of demolition material must be conducted in accordance with the plant operation manual and, where applicable, environmental permit (mobile plant licence) / waste exemption certificate. The operator must use the best available techniques (BAT) for preventing or, where this is not practicable, reducing emissions from the installation. The following items must be considered when attempting to reduce the environmental impact of this process:

- Location
- Operation
- Maintenance
- On-site transfer of dusty materials
- Condition of roadways / haulage routes
- Stockpiling materials

4.4.2 General Site Activities

With regard to nuisance, the methodology in which work activities are undertaken must apply best practicable means (BPM) in order to minimise negative impact on local, sensitive receptors, such as schools and domestic dwellings. However, if measures to reduce excessive dust and noise are unsuccessful, work must stop and an alternative method devised before work can resume.

The following measures must be considered when attempting to reduce noise and dust:

- Use sheeted lorries and sealed / covered skips.
- Use dust extraction equipment when drilling and cutting.
- Damp down haulage roads and stockpiled materials in dry or windy weather.
- Sweep access roads regularly.
- Grass over / stabilise topsoil which is being stockpiled for landscaping or off-site re-use.
- Locate plant and equipment away from sensitive receptors.
- Use screens, including earth bunds to act as acoustic barriers.
- Isolate plant and equipment when not in use.
- Fit white noise systems on vehicles to reduce noise nuisance when reversing.
- Keep engine compartment doors closed.
- Limit vehicle movements on-site, e.g. use of one-way system.

4.5 Previously Unidentified Issues

If one or more of the following is discovered, work in that location must stop immediately and the Project Environmental Co-ordinator (PEC) informed:

- Contaminated soils.
- Archaeological remains or features.
- Suspicious objects.
- Underground storage tanks.
- Invasive species, e.g. Japanese Knotweed.
- Protected species, e.g. badgers, bats, amphibians, reptiles and plant life.

4.6 Subcontractor and Supplier Environmental Reporting

Subcontractors and suppliers must adhere to the Responsible Procurement Policy [SHEMS-POL-GR-004](#). Where applicable, they must also provide the following information / documentation on a weekly basis to the Kier project team:

- A record of the number of litres of fuel delivered to site, e.g. red diesel (gas oil), white diesel and petrol.
- Volume of water used on site (where separate subcontractor supplies are in use, e.g. stand pipes).
- Legible copies of all waste transfer notes (WTNs) and hazardous/special waste consignment notes (H/SWCNs).
- Legible copies of all chain of custody certificates belonging to suppliers delivering new timber to site.
- Legible copies of all timber delivery notes.
- Legible copies of all recycled aggregate delivery notes (volume of aggregate must be recorded on notes).

4.7 Emergency & Incident Preparedness

To minimise the risk of a pollution incident, subcontractors must ensure all operatives understand the environmental risks associated with their work activity and what control measures are in place to eliminate or reduce negative environmental impact.

Major environmental incidents shall be reported and managed in accordance with MIRP Standard [SHEM-GR-STD-013](#).

Environmental emergency planning must be managed in accordance with the Fire Management Site Standard [SHEMS-STD-GR-021](#) and Appendix B.6 of the Construction Phase Plan. The Major Incident Response Plan must be implemented where relevant.

Investigation and reporting of environmental incidents must be undertaken in accordance with the Incident and Near Miss Reporting Standard [SHEMS-STD-GR-011](#).

4.8 Monitoring, Auditing & Reporting

Please refer to 6.18 of the Construction Phase Plan.

4.9 Management Structure & Responsibilities

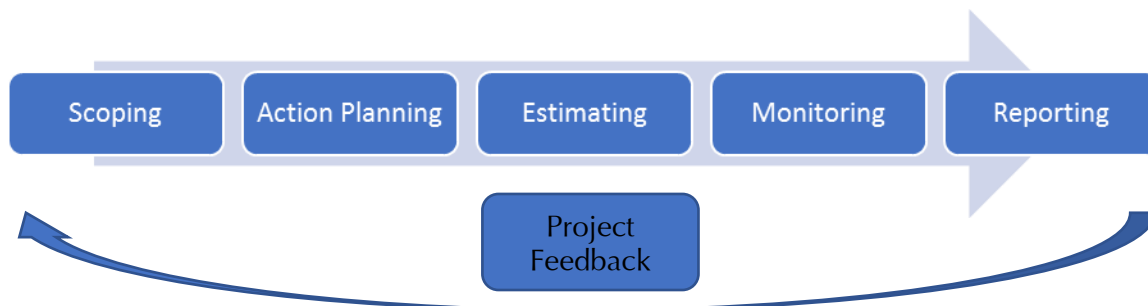
Please refer to 6.1 and 6.2 of the Construction Phase Plan.

4.10 Training Awareness & Competence

Please refer to 6.14 of the Construction Phase Plan

5. Resource Efficiency

Kier have adopted the principles of resource management planning as developed by the Waste and Resources Action Programme (WRAP). The purpose is to detail the planning of resources during the design, construction and life of the building. The resource management planning process is broken into five stages, together with a feedback loop.



By implementing the BUK Resource Efficiency Strategy the project team will be able to:

- Demonstrate innovation.
- Support the requirements of environmental assessment methods, such as BREEAM.
- Go beyond compliance.
- Build more efficiently and reduce risk.
- Achieve environmental benefits.
- Create savings for all stakeholders.

Kier's SMARTWaste platform and Energise software will be used throughout the project to monitor, record and report environmental performance. Resource Management planning will be documented in SMARTWaste sections 2, 3 and 4. Section 2 will be used to record the waste and resource minimisation measures that will be implemented during design and construction.

5.1 Materials & Design

A list of design decisions have been recorded in schedule III of this plan. The items listed are based on the twelve resource efficiency themes identified by WRAP. Further information can be obtained from the project design manager / assistant design manager.

All materials and products used on the project will comply with the Responsible Procurement Policy [SHEMS-POL-GR-004](#). Timber and timber based products will comply with the Timber Purchasing Minimum Standard [SHEMS-MST-GR-0007](#).

5.2 Waste Management

For detailed information relating to the management of waste at Neath Town Centre, e.g. targets, waste forecast, waste minimisation measures and waste records, please refer to the project's SMARTWaste Plan.

5.3 Energy, Fuel & Water

By following the measures outlined below, we will minimise our energy, fuel and water usage.

The Kier Power Planning Tool will be used to ensure the correct type and size of generator is specified for the project. It will also indicate whether a hybrid generator is appropriate (moderates diesel use at times of low demand, such as overnight). Where applicable, the tool will also be used to determine the size of the temporary electricity supply required for the project.

Over the course of the project, the tool will be used periodically to review the size of generators in use. Where recommended by the Kier Power Planning Tool, generators will be downsized.

[SHEMS-FOR-GR-037](#) Kier Power Planning Tool (existing sites)

[SHEMS-FOR-GR-038](#) Kier Power Planning Tool (new sites)

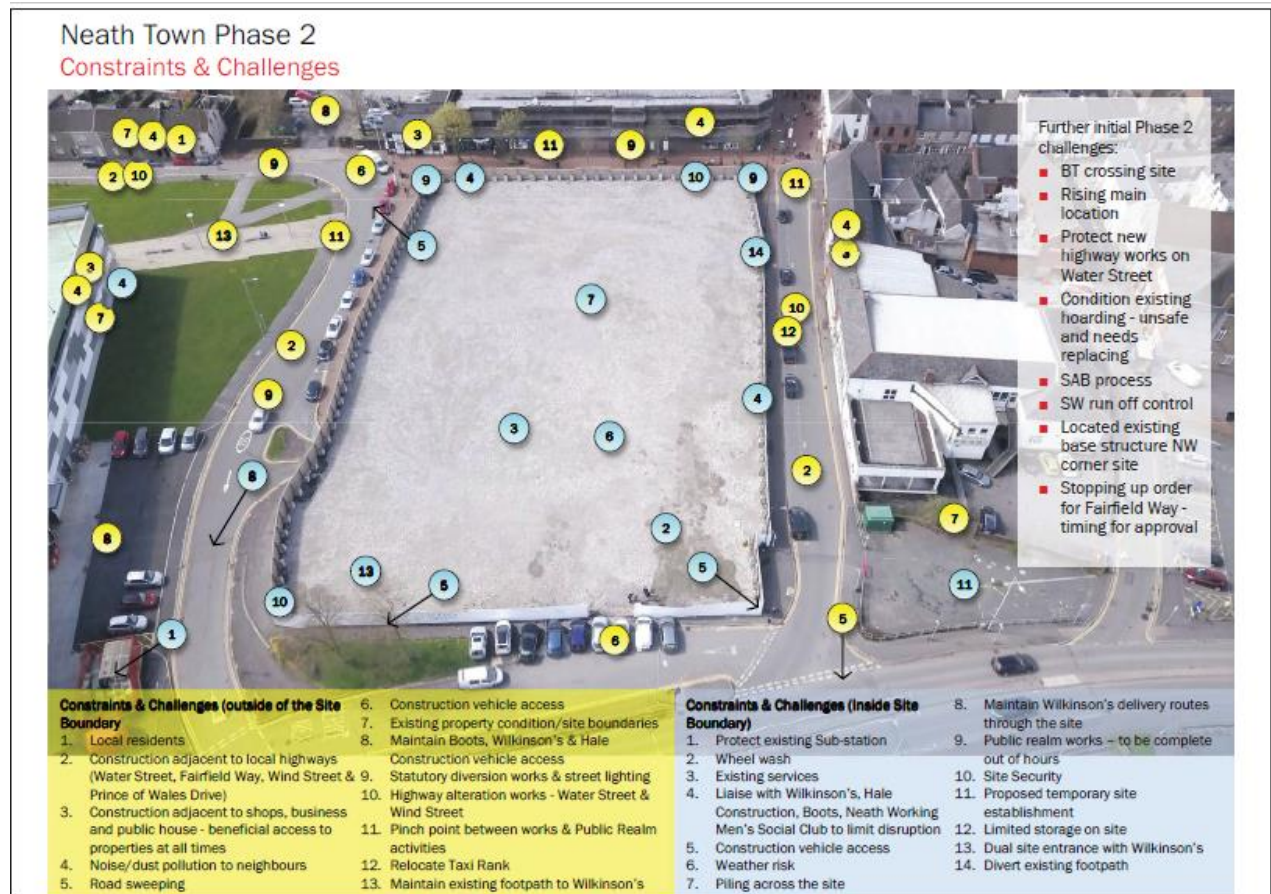
Site accommodation at Neath Town Centre conforms to the BUK Site Accommodation & Welfare Units Minimum Standard [SHEMS-MST-BUK-0081](#).

A full list of energy and water saving measures and initiatives are listed under section 2 of the project's SMARTWaste Plan to commence upon contract award

Schedule I - Environmental Aspect & Impact Assessment

Located within CPP

Schedule II - Site Constraints Layout Plan



Schedule III - Design Decisions

Design Decisions	Y / N
Reclaimed products or components have been specified	N
Materials from demolition and / or other work phases have been incorporated into the design <i>Examples: Bricks and tiles to be reused, soils to be reused, stonework to be reused, architectural features, e.g. large coping stones to be reused as bench seating in landscaped areas.</i>	N
The design, form and layout have been simplified <i>Examples: Size and position of window and door openings to suit whole brick / block / plasterboard dimensions. Room sizes to match plasterboard dimensions, identical grids to allow for formwork reuse. Designing out basements, raising formation levels, soil stabilisation, displacement piling or mini piles.</i>	Y
Components have been designed for off-site manufacture <i>Examples: Precast edge / ground beams / manholes. Prefabricated toilet / bathroom / kitchen pods, prefabricated service runs / risers, pre-packaged plant rooms, etc.</i>	Y
Designed as a process of assembly rather than construction	N
Wet trades have been designed out	N
Materials known to contain a high recycled content have been specified	Y
Materials and products are suitable for their application <i>Example: Floor tiles and wall finishes are not under / over specified.</i>	Y
Locally sourced and / or rapidly renewable materials have been specified <i>Example: Cork, linoleum and Grown in Britain (GiB) timber.</i>	TBC
Using products with lower embodied water and / or carbon	Y
Low energy light fittings have been specified	Y
Low / zero carbon technologies have been specified	N
High specification thermal insulation will be used	Y
Thermal modelling undertaken	N
Effective ventilation systems used to reduce energy loss	N
User control is carefully considered to ensure a healthy environment as well as allowing efficient energy use	N
Rain / Grey / black water harvesting has been specified	N
Low flow rate fittings have been specified	N
Design adaptable for a variety of purposes during its life span	Y
Building elements and components can be maintained, upgraded or replaced without creating waste	Y
Design incorporates reusable / recyclable components and materials	Y
Building elements / components / materials easily disassembled	Y