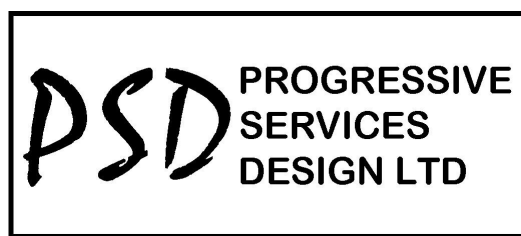


TALBOT MILL MANCHESTER

ENVIRONMENTAL STANDARDS STATEMENT

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SECTION 1

EXECUTIVE SUMMARY

This document has been provided in support of the refurbishment works to existing mill buildings 01, 02 and the new build apartment building which forms part of the development scheme at Ellesmere Street and Bridgwater Canal.

For the New Building the report considers specific guidance referring to housing standards and the associated residential development.

As a result of the abolition of 'The Code for Sustainable Homes' (CSH) there is no intention, nor is there any requirement, to achieve certification under the CSH scheme. This report is provided in support of this application which outlines what is embedded within the scheme and how it would have met criteria set out within CSH (Level 4).

This report seeks to fulfil this requirement with reference to the following sustainability commitments:-

- i. Aspiring to exceed 2013 Building Regulations carbon emission toward the levels required under Level 4 of the Code for Sustainable Homes;
- ii. Use of efficient space and water heating systems allied with renewable technologies in the form of photo voltaic (PV) panels mounted at roof level;
- iii. Use of materials in the construction process which have a low environmental impact as determined by the BRE's Green Guide;
- iv. Waste minimisation principles adopted both during construction and in the lifespan of the development through promotion of recycling measures;
- v. Maximising the use of recycled and sustainably sourced building materials.
- vi. The development will occupy previously developed land and utilise areas of underdeveloped brown field site adjacent to the site.
- vii. There will be no adverse impact on biodiversity and the immediate environmental surrounding as a result of the development given the sites city centre location.
- viii. Ensure the building has sound weather resilience following remedial works to existing fabric and replacing where possible with new elements.

In our view the incorporation of the above, and other recommendations made within this report, will deliver a sustainable development.

SECTION 2

ENERGY EFFICIENCY MEASURES

The broad energy strategy for the proposed development is to design a scheme which will positively influence the overall predicted energy supply and demand.

As existing buildings 01, 02 are in conservation areas, allowances are made in Building Regulations Part L1B. Every effort will be made to ensure improvements can be made to the existing fabric where feasible with due regard to the sensitive historic and architectural characteristics of the buildings. All new building fabric elements will be designed to exceed building regulations.

The aim for the new Building is to create a development which uses less energy and for the energy supply to be clean and efficient and with enough generated by renewable technology to achieve the emission levels required under 2013 Building Regulations with an aspiration to deliver CO₂ reductions associated with Level 4 of the code for Sustainable Homes.

3.1 Natural Daylight

The building offers a good glazing balance with all habitable rooms having windows that create good levels of natural light. In addition to creating a pleasant living environment these characteristics help to reduce the lighting load and therefore electricity consumption.

3.2 Building Fabric

Fundamental to energy efficiency best practice is a 'fabric first' approach. This is underpinned by the notion that it is much better to ensure less energy is needed in the first place so that regardless of how energy is generated and supplied, a building requires less of it. This means that less renewable technology has to be implemented thus potentially reducing capital costs and ensuring that should future owners remove any technology e.g. if it reaches the end of its serviceable life, then the latent energy demand will be lower than otherwise.

In the New Building the glazing is to be specified with an overall U-value of 1.4 Wm²K for the frame and glass. This will provide a balance between maximising solar gain and light levels into the internal spaces whilst keeping heat loss down and with a reasonable range of product choice. The selected windows are to be 'A' rated by the BFRC.

The following tables shows the proposed U Values for the refurbishment works to the existing buildings 01& 02 which will be applied to any new elements of the building fabric including new windows throughout.

The new windows to buildings 01, 02 and new building will be provided to meet the Secured By Design requirements with Aluprof SBD frames and glazing panels designed to be an improvement on the limiting U-Values set out in Building Regulations Part L1B as shown in the tables below.

Element	Proposed U-Value (W/m ² K)	Part L1B limiting / improved U-Values (W/m ² K)
New External Walls	0.23	0.28
New Windows	1.53	1.6
Existing Ground Floor	0.25	0.25
Existing Roof	0.18	0.18

On existing building fabric elements the U Values are what can be reasonably achieved with due regard to the conservation characteristics of the existing construction.

The following table shows the U-Values that have been used in the SAP calculations for the new Building.

Element	Proposed U-Value (W/m ² K)	Part L1A limiting U-Values (W/m ² K)
External Walls	0.20	0.30
Ground Floor	0.15	0.25
Roof	0.15	0.20
Windows	1.40	2.00

All the U Values for the new building elements are an improvement on the Building Regulations.

3.3 Air Permeability

An air permeability test target of 5.0m³/m².hr has been set; 50% lower than the Building Regulations requirement but without being so low as to create unfavourable conditions with the potential for mould growth and implications for respiratory health.

3.4 Ventilation

Sufficient rapid, mechanical extract and background ventilation will be provided to ensure habitable areas meet the requirements of Part F of the Building Regulations. All apartments have been ventilated by 'whole house' mechanical extract ventilation (MEV) systems, with specific fan powers of 0.3 w/l/s.

3.5 Lighting, Appliances & Usage

The proposed development will make use of low energy lighting in line with BRE and former Code for Sustainable Homes methodology – 100% of the lighting is to be provided by energy efficient fittings. This will apply to both internal and external lighting and any security lighting will have appropriate wattage, sensors and controls to ensure efficient operation.

In line with the requirements of category ENE 5 of the Code for Sustainable Homes any fridge freezers will have an energy rating of 'A+', washing machines and dishwashers will be 'A' rated and, if fitted, tumble dryers or washer dryers will have a minimum 'B' rating.

As per the requirements of category MAN 1 of the former Code for Sustainable Homes, a Home User Guide will be supplied to all dwellings. This will detail ways residents can make best use of the features in their homes to promote energy efficiency.

The Home User Guide will also cover information on the site and local facilities to promote, amongst other things, public transport and recycling.

Further information on local transport is also provided within the Transport Statement provided as part of the planning documentation.

3.6 Heating System & Controls

Space heating is to be provided by electric panel heaters which operate at 100% efficiency. The units are fitted with programmable controls as well as room thermostats to allow efficient operation while meeting the demands of the occupants.

3.7 Hot & Cold Water Services Systems

Water heating will be provided by electric immersion heaters and hot water storage systems. The storage capacity will be sized specifically to the needs of the apartment and installed with thermostats to maximise system efficiency.

SECTION 3

WATER MANAGEMENT

The water management strategy is to reduce the consumption of potable water for sanitary use through the use of water efficient components and equipment. Water use shall also be monitored and managed to encourage reductions in water consumption.

The system shall comprise a pulsed water meter on the main incoming supply which shall be interlinked with the Building Management System. The maintenance team can then monitor the water consumption and report against target benchmarks. This can also be set to warn the maintenance team of any out of range values which indicate any issues which require addressing.

Each apartment will also be provided with the facility for metering to provide localised water management.

All sanitary appliances and brassware shall be WRAS approved and selected to minimise water consumption. Water saving products shall be utilised where applicable as follows:-

- Water efficient eco showerheads
- Reduced capacity baths
- Water efficient appliances – where possible products with Water Efficient Product Label and/or Waterwise Recommended Checkmark
- Low flow taps to bathroom and kitchen sinks
- Flow tap aerators and regulators

The water consumption shall be designed to meet the requirements in Building Regulations Approved Document G and also the Previous Code For Sustainable Homes Level 4 Wat 1 requirements.

Implementing all of these factors into the water management strategy encourages a best practice approach to measuring and managing water use, reducing energy consumption and will also provide the residents with opportunities to reduce their water utility bills.

SECTION 4

WEATHER RESILIENCE

Existing elevations are to be locally rebuilt where high level areas of brickwork have become water damaged and locally repointed in suitable materials to ensure they are capable of resisting all elements of weather. Internal brickwork walls are to be exposed to preserve and celebrate the original fabric allowing moisture generated from internal environment to escape naturally. Rain is normally absorbed into the outer layers of permeable material, and then safely evaporate back out again when the weather changes.

Windows are to be set back as far as possible within the openings to ensure their heads are well protected from the elements. Their detailing and specification will be a major contributor to the air-tightness of the new residential realm.

All adjustments / additions within the development will be made using materials which are compatible with the historic fabric. Consideration is to be given to new work placed directly adjacent to historic fabric as being slightly weaker and more permeable to ensure that it will weather preferentially to the more significant older work.

Two different strategies are proposed on the roofs of the existing mills, however there are similarities. Mill 01 will have a new penthouse on top of the existing roof, while Mill 02 will have its existing roof removed, and a three storey penthouse built onto the jack-arch floor on level 03. Any remaining exposed roof will have new coverings and junctions between existing and new will be carefully detailed to ensure weatherproofing.

New roofs to the penthouses, as well as the new build, will have a flat roof single ply system.

Rainwater pipes are internal to the building, rather than being exposed on the facade. Rainwater outlets will be located on the main roof, on both the mills and the new build. Rainwater from the penthouses will be collected via a hopper and discharged onto the main roof. The number of outlets will be calculated to suit.

All new interventions will be designed to be maintenance free and offer a long weatherproof and serviceable life.

SECTION 5

WASTE MANAGEMENT

The legal requirement to produce a Site Waste Management Plan for the construction phase of a development was removed in 2013, however, the Principal Contractor will be required to produce and define a waste management hierarchy of control (i.e. a Waste Management Strategy).

This shall include the following:-

- Mitigation of waste generated
- Re-use of materials where possible
- Recycling of materials
- Disposal of remaining waste at a suitable facility.

Waste produced during the construction process will be cleared on a regular basis. On each floor of the buildings, a series of paladin bins will be deposited within easy reach of the workstations. Contractors will deposit waste in these bins during the day. The bins are then to be transported to the skip via a hoist.

Because of space limitations on this site, it is not envisaged that many skips can be positioned on site. Therefore, to reduce the amount of waste for landfill, waste is to be segregated at the waste transfer station into the following categories:

- Cat A: Hazardous waste i.e. paint tins, mastic tubes etc.
- Cat B: Metal
- Cat C: General waste / building debris

The recycling and waste objectives relating to the Talbot Mill development once complete, are summarised below:

1. Introduce an appropriate collection system for household waste.
2. Provide adequate storage facilities to enable residents to segregate mixed dry recyclables, organics, residual waste and bulky items.
3. Educate household residents on the waste segregation facilities at the development through the home owners information pack.
4. Enable compliance with the Building Regulations and the MCC Requirements.

Due to the extended distances from the apartments to the communal refuse store, residents will drop waste at separate locations on the courtyard level. The refuse stores accessible to residents will be located within Mill 02, for both mills, and the new build. The management company will then rotate the refuse bins at regular intervals between the residential buildings and the communal refuse store. Refuse stores will encourage residents to recycle waste.

Waste will be split into the following bins which are offered by MCC:

1. Blue - Pulpable material (recycled) - paper, cardboard, tetrapak etc
2. Brown - Co-mingled material (recycled) - glass, cans, tins, plastic etc
3. Green - Organic waste (recycled) - food stuffs etc
4. Black General waste (non-recycled) - all non-recyclable

Enterprise Manchester collects recyclables and general waste on behalf of MCC from flats and households on a weekly basis and will collect at Talbot Mill on Fridays.

Manchester City Council offers a weekly refuse and recycling collection service. Ahead of the weekly refuse collection, the management company will ensure bins are assembled and presented at pavement level. Following collection by Enterprise Manchester, the bins will be returned to the communal and buildings refuse store. A refuse tow-tug (PT4000) can be used to facilitate movement of the heavier bins through the site.

Recycling placed in blue bins is taken to the materials recovery facility (MRF) where it automatically gets separated in different types of recycling material.

The total quantity of bins serving the development located on each floor can be seen in the diagram and calculations below and have been calculated from guidance provided in Manchester City Councils document 'GD04 Waste Storage and Collection Guidance for New Developments V3.00 (July 2016). Compliance with this Waste Strategy by the completed development will ensure that there is sufficient waste storage areas across the development to enable residents to segregate their recyclables and waste, and provide appropriate access for refuse collection vehicles (RCVs).

Calculations:

1. Black bins (1100L) - 21 bins stored on site collected weekly
2. Blue bins (1100L) - 11 bins stored on site collected weekly
3. Brown bins (55L) - 11 bins stored on site collected weekly
4. Green bins (240L) 13 bins stored on site collected weekly

Permanent signage to the entrance doors to the recycling and waste storage areas as well as for each bin will be provided to promote effective segregation. Double doors will have the ability to be held open during collection.

Adequate lighting will be employed. The floor shall be laid to falls in a surface of a material that can be easily cleaned as all stores will be fitted with taps for sluicing with localised gullies. 'Bump Strips' will be placed around the edge of the waste storage area at bin height to prevent damage caused when using the bins.

Bins will be cleaned and disinfected on a regular basis in line with MCCs requirements.

Refuse collection will take place on Ellesmere street as this is the only public vehicular access to the development.

SECTION 6

CONSTRUCTION MANAGEMENT

The Construction Design and Management Regulations 2015 will apply to this project and all appropriate controls and systems will be in place to comply with the standards of the Regulations and associated guidance.

Every stage of the project will be pre-risk assessed and appropriate controls applied, sub-contractors will be pre-vetted and will be subject to extensive pre-contract requirements of information transfer and risk assessment.

A fundamental aspect of the Principal Contractor's role is the development of a Construction Phase Plan will take account of all known risks, which will be identified at pre-construction stage by the Principal Designer/CDM Consultant, the Design Team and also through site investigations.

The Construction Phase Plan will describe arrangements and procedures for managing these key risk areas in more detail, as well as any future risk. It will also describe the resources, including personnel, which will be applied to the scheme to ensure the Health and Safety of all those working on or affected by the project works.

As part of the Construction Phase Plan the principal contractor shall develop and implement a Construction Environmental Management Plan (CEMP).

The CEMP will identify construction activities, environmental aspects and impacts, and describe the measures that are to be implemented to mitigate those impacts. It will also identify the Contractors' legal requirements associated with site environmental management, such as permits, emissions thresholds to be met, and other compliance issues.

The CEMP shall set out the minimum requirements for managing the environmental aspects of the development that must be met.

The CEMP will address issues associated with:

- Noise & Vibration
- Air Quality
- Archaeology & Cultural Heritage
- Visual Impact
- Ecology
- Water Pollution
- Waste
- Contaminated Land
- Construction Traffic Management
- Protection of Existing Services
- Community Responsibility

This will be a live document that will evolve throughout the life of the project.

SECTION 7

BIODIVERSITY

A Bat Survey & Assessment has been carried out by Rachel Hacking Ecology Ltd and shall form part of the planning application documentation.

The summary highlighted “No evidence of Bat activity could be located on site and the existing buildings offer negotiable Bat roost suitability”.

The scheme involves cleaning the branch of the canal adjacent to Mill 02.

No existing trees are present on site but the landscape will be adorned with new species located within the courtyard.

It is not seen that the proposals will have any adverse impact on biodiversity.

The landscaping to the new development involves the existing central courtyard being redeveloped as a series of multi-purpose garden and social spaces for the exclusive use of residents. The existing Timekeepers Cottage within the courtyard will become a key focal point, with further animation provided via a raised ‘sun deck’ - providing an element of height to enjoy and utilize, as well as a functional sheltered space beneath.

The visual aspiration for the courtyard is to achieve a lush and green vegetative aesthetic, with carefully selected planting interspersed throughout the space to provide interest, increase biodiversity, frame spaces, and encourage exploration. The tree species are to be confirmed but will meet the following criteria:

1. Be suitable to meet the amount of natural daylight penetration in the site
2. Add to the character of the space without creating excessive additional shading
3. Provide visual variety and seasonal interest

The majority of the courtyard will be paved with masonry materials with the access ramp formed in concrete. This concrete area will provide for vehicle access through the archway for sub-station maintenance. The ramp will then transition down to the lower courtyard level to allow bin collection movements – The bin store will be located under the access ramp.

To the perimeter of the courtyard, semi-private defensible spaces will be positioned outside of courtyard level residential units to afford these with a usable external space. The courtyard will also be furnished with an assortment of seating and table components, low-level lighting bollards, fire pits, elements of play (such as table tennis) and visitor cycle stands.

SECTION 8

CONCLUSIONS

The design principles for the development may be stated as being that of a “fabric first” approach, with the intention of limiting energy demand and CO₂ emissions at source and provide a development which reduces consumption of energy resources over the long term.

Facilities to be included comprise the following:-

- Construction of the thermal envelope (walls, roofs, floors, windows and doors) which meet or exceed the requirements of current Building Regulations;
- A design air permeability of 5.0m³/m².hr; 50% lower than current Building Regulations requirements;
- Installation of highly efficient space and water heating systems with user controls that further improve efficiency;
- Installation of a roof mounted PV array and 100% low energy lighting throughout the development;
- Renewable technologies in the form of photo voltaic panels (approx. 48 kwp/350m²)

These factors will allow the proposed development to exceed the CO₂ targets of 2013 Building Regulations as well as reducing the energy usage of the new build apartment block in the order of 10%.

Other factors that will be incorporated into the design and construction of the development can be summarised as follows:-

- A water management strategy to meet the requirements set out in the Building Regulations Approved Document G and the Code For Sustainable Homes section Wat 1.
- Refurbishments to existing building fabric to ensure sound weather resilience.
- A waste management strategy for both the construction phase and for the residents upon completion.
- A construction management strategy that embraces minimising the impact on the environment.
- New landscaping opportunities and a development with no adverse effects on biodiversity.

In our view the incorporation of the above, and other recommendations made within this report, will satisfy the relevant requirements of the Local Planning Authority.