Construction Environmental Management Plan

Laystall Street, Manchester

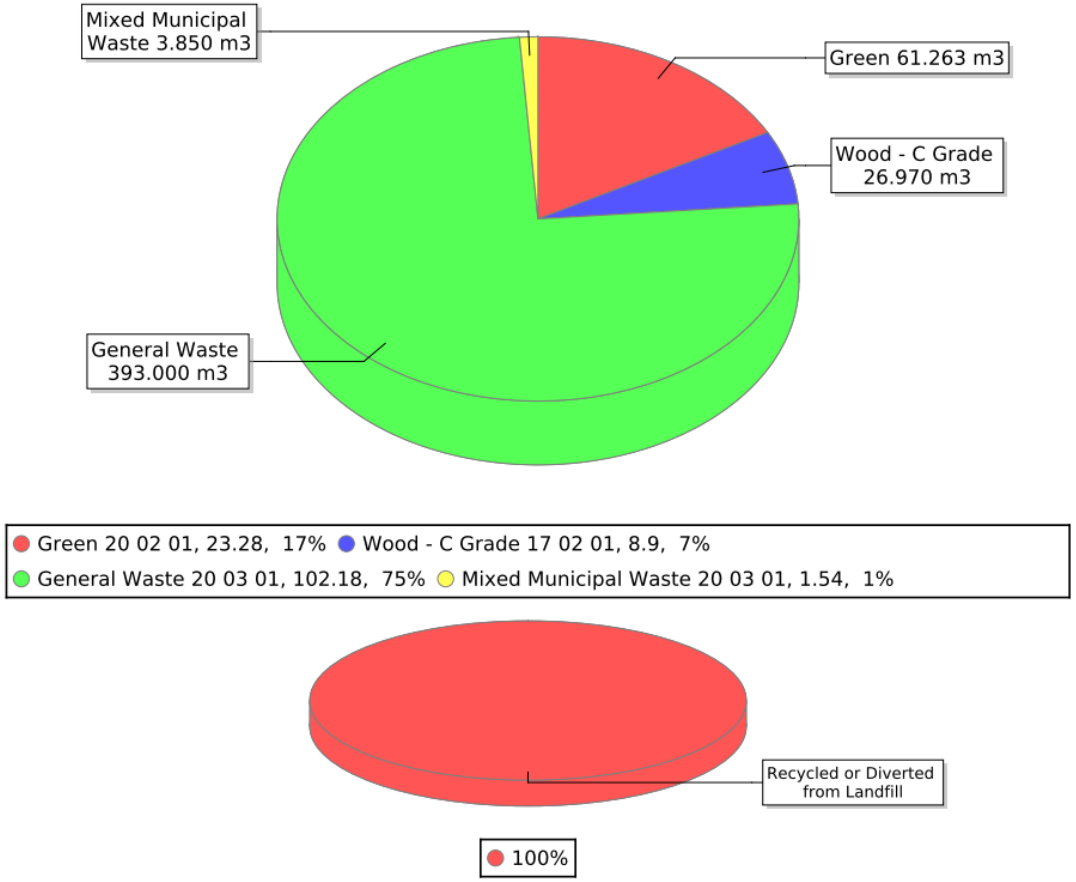
Extension of Grade ii listed building comprising four x 1-bedroom apartments across four storeys

Introduction to Circular Economy and our Aspirations.

The CE goals for the project have been set out below. The goals are for the project to align with the waste hierarchy and circular economy hierarchy.

Incorporating the associated targets and commitments within materials and elements will help to ensure the principles of circularity are incorporated into the design and construction of the project.

As part of the demonstration of commitments to sustainability and circular economy principles, the project aims to achieve, at a least 95% diversion from landfill rate and aiming to achieve less than 7.5m3 or 6.5 tonnes of waste produced per 100m2 of gross internal area. Over the last three years, 100% of our construction waste has been recycled or diverted from landfill. Below is a waste report from our latest project.



Circular Economy Principles and Commitments

A circular economy is one where materials are retained in use at their highest value for as long as possible and are then re-used or recycled, leaving minimal residual waste. A circular economy will save resources, increase our resource efficiency across our business and projects and help to reduce our carbon footprint.

For circular principles to be successful, a whole building life cycle approach is required. Therefore, the goals of the circular economy statements are closely entwined with the approach of the sustainability and energy.

National Policy

Planning policy is set at the national level by the national planning policy framework (NPPF) and associated planning practice guidance (PPG) as summarised below.

National Planning Policy Framework

Most recently updated in February 2019, the national planning policy framework (NPPF) sets out the governments planning policies for England. The NPPF 7 states "*the purpose of the planning system is to contribute to the achievement of* ***sustainable development***".

Key requirements for the environmental objective of relevance to this statement include making efficient use of land, using resources prudently, minimising waste and pollution and mitigating climate change.

Planning Practice Guidance

Planning practice guidance (PPG) underpins policies within the NPPF and provides guidance on their implementation. As such PPG is a material consideration in planning decisions and should generally be followed unless there are clear reasons not to. PPG includes a specific section on the implementation of waste planning policy. It explains how local planning and authorities can help ensure waste is handled in a manner which protects humans health and the environment.

Local planning authorities, to the extent appropriate to their responsibilities, should look to drive waste management up the 'waste hierarchy'.

Manchester Core Strategy 2012-27

The core strategy is the key development plan which was adopted in 2012 and sets out the following policies pertaining to waste:

Policy EN19 Waste – requires all developers to demonstrate the proposals consistency with the principles of the waste hierarchy.

Policy DM1 Development Management – All developments should have regard for refuse storage and collection in the design.

Greater Manchester Spatial Framework 2020-2037

The production of the greater Manchester spatial framework, an update to the core strategy, is no longer being progressed in its current form however the draft plan sets out the ambition for greater Manchester to achieve a circular economy and a zero-waste economy, by implementing the following policy:

Policy GM-S 7 – Resource efficiency

The following measures will help achieve a circular economy: using sustainable design and construction techniques to reduce carbon emissionsm adapt and future proof the impact of climate change, reduce and recycle waste and minimise water use; and designs should incorporate storage space to facilitate recycling.

Goals

The national principles and guidance policy EN19 and DM1 of the adopted Manchester core strategy, along with the development of the Greater Manchester spatial framework, demonstrates the ambition to move to a circular economy. The proposed development wants to demonstrate the clear commitment to designing and building a development which considers the impacts of circularity in relation to materials and waste.

Our Goals

Goal 1 – Waste and Resource Management through adoption of principles of waste hierarchy.

Follow the principles set out in the waste hierarchy with the goal to conserve resources; design to eliminate waste to landfill; and increase recycling rates. In accordance with their sustainability commitments, the contractor aims to utilise optimum level of resource and minimise waste output and achieve high levels of recycling and reuse.

Goal 2 – Adopt principles of circular economy hierarchy

Deeper analysis of the waste hierarchy enables the circular economy hierarchy and avoidance of the linear “take-make-dispose” economy.

PRINCIPLE 1: CONSERVE RESOURCES, INCREASE EFFICIENCY AND SOURCE SUSTAINABLY

Commitment 1.1: Minimise the quantities of materials used	
Responsibility	Primary: Client. Secondary: Architect, Structural Engineer.
Proposed Approach	The form of the building at Laystall Street is an existing building with a small new extension which is simple and efficient, thereby using less materials within the design. Furthermore, the design and procurement process will aim to specify robust materials for elements that historically required regular replacement. During the design, the Client, Architect and Contractor have investigated the standardisation or modularisation of key components such as windows, lighting and cladding that will simplify maintenance, part repair and replacement for the operations, asset management and maintenance team. Furthermore, the standardised or modular elements may be able to be demounted or dis-assembled, relocated and refurbished thereby extending the lifespan of these building elements and reducing the demand for new raw materials. The aim will be to: • Investigate the use of demountable aluminium cladding elements. • Set out building elements based on standard fabric sizes. • Investigating the off-site manufacture of pod bathrooms to encourage modularisation in the development. During construction, the project team will also aim to ensure where possible, efficient materials procurement and reduced construction waste by designing for less material use and less construction waste produced by: • Off-site prefabrication has been promoted and maximised where possible to minimise the potential for both on-site and off-site construction waste. • Reinforced steel is pre-cut off-site to minimise off-cuts and therefore waste. • Pre-cast concrete is used throughout the development, including pre cast columns will be used where practicable. This is a more efficient use of concrete as components are made in factory where exact quantities can be used to reduce waste.

PRINCIPLE 1: CONSERVE RESOURCES, INCREASE EFFICIENCY AND SOURCE SUSTAINABLY

Commitment 1.2. Minimise the quantities of other resources used	
Responsibility	Primary: Client. Secondary: Architect, MEP and Structural Engineers.
Proposed Approach	The aim is to mitigate the potential impact of the development by addressing key sustainability issues and incorporate a range of procedures to maximise resource efficiency and minimise waste during all stages of the development. The Laystall Street project takes a fabric first approach in reduction of operational energy (heating/cooling/ventilation) by having a low U-Value façade, low Y-value thermal bridging, improved air tightness, and a very efficient form factor and optimised glazing ratio. A fabric-first and all-electric energy strategy will be adopted, resulting in a reduction of energy demand by approximately 22%. The development will benefit from the ongoing decarbonisation of the UK electricity grid. McCauls will assess the environmental impact associated with all the phases of the life cycle of the new building, from the manufacture of the building materials through to the operation of the building and how it will be demolished and replaced, focusing on a range of sustainability metrics. Each design and specification decision is to be measured against the impact it will have on the net of the whole life carbon of the project. The offices will be designed to reduce water consumption and will include water efficient devices and equipment, including 'A' rated appliances. The Energy and Environmental Standards Statement concluded a daily consumption rate of 125 litres / person / day. There will be a maximum dead leg of 1 litre of hot water pipework. 'Green' Euro Water Label to be used for hot water outlets (e.g. certified 6l/min shower head). The use of water, electricity and fuel will be monitored to track performance throughout construction, with decisions being taken considering these KPIs.

PRINCIPLE 1: CONSERVE RESOURCES, INCREASE EFFICIENCY AND SOURCE SUSTAINABLY

Commitment 1.3. Specify and source materials and other resources responsibly and sustainably	
Responsibility	Primary: Architect, Structural Engineer. Secondary: Main Contractor.
Proposed Approach	McCauls will endeavour to reduce the reliance on raw virgin materials and procure from sustainable sources. McCauls will also aim to ensure a construction specification that maximises energy and resource efficiency. To reduce the reliance on virgin materials in the construction material, the Contractor seeks to specify the use of recycled materials wherever viable including steel content, aggregates, blockwork and building finishes and furnishes. The procurement team will ensure use of products from certified sustainable sources, and ensure the availability of supply for the needs of the development e.g. FSC/PEFC certified timber.

PRINCIPLE 2: DESIGN TO ELIMINATE WASTE (AND FOR EASE OF MAINTENANCE)

Commitment 2.1. Design for longevity, adaptability or flexibility and reusability or recoverability	
Responsibility	Primary: Client Secondary: Architect and Structural Engineer
Proposed Approach	In order to ensure that circular economy principles are embedded within the construction process, the development aims to meet long term needs while being durable and resilient. It should be able to cope with change from, for example, climate change or different ways of living. The lightweight partitions and riser arrangements mean the internal arrangements can be adapted at a later date with little impact. The materials have been specified to be robust and long lasting and based on standard fabric sizes. Material specifications and procurement will aim to achieve durability standards. Materials are to be demountable and recyclable where practicable. Off-site prefabrication and design for modularisation / standardisation will be promoted and maximised where possible to ensure ease of maintenance and repair/replacement during operation.

PRINCIPLE 2: DESIGN TO ELIMINATE WASTE (AND FOR EASE OF MAINTENANCE)

Commitment 2.2. Design out construction, demolition, excavation and municipal waste arising	
Responsibility	Primary: Architect, Structural Engineer. Secondary: Main Contractor, Waste Contractor.
Proposed Approach	During construction, the team will work together to maximise the value and quantity of materials recovered for potential reuse and recycling. This will include encourage efficient use of materials by applying lean design principles, using reclaimed materials, and components, and substituting high replacement cycle materials with more robust materials, including the use of pre-fabrication and modularisation, as described above in Principle 1. The contractor will continue review the reuse and recovery of materials & components, such as offering roller shutters on the existing building to local companies to be reused.

PRINCIPLE 3. MANAGE WASTE SUSTAINABLY AND AT THE HIGHEST VALUE

Commitment 3.1. Manage demolition waste	
Responsibility	Primary: Architect, Structural Engineer. Secondary: Main Contractor, Waste Contractor.
Proposed Approach	As the scheme is the refurbishment of an existing building, there will be very little demolition. However what demolition may be required will be segregated as follows: • Joinery, doors, architraves, skirtings, etc. will have nails, screws and ironmongery removed and sent to the Particle Board Industry. • Glass, where suitable, will be sent for Cullet Merchants. • Plasterboard will be sent for recycling by British Gypsum. • Ferrous and non-ferrous materials will be sent to scrap metal merchants for recycling. During the M&E strip, plant will then be cut out in large sections and will then be reprocessed by a larger machine with a scrap shear before being placed in bins for recycling. All waste is further segregated and sorted off site prior to recycling in order to achieve the minimum amount of material sent to landfill. Mixed waste collected from site will be segregated off site at a local transfer station, where all materials will processed through a material recycling facility. The project team will agree a benchmark for waste reclamation which will include reuse on site, reuse on other sites, salvaged for reuse & collected from site by an approved waste management contractor. During the demolition there are waste streams that are considered non-recyclable and they include asbestos waste and bitumen roofing. This is anticipated to be minimal, approximately 26 tonnes. Monthly environmental inspections will take place and KPIs will be monitored. The KPIs will include waste generation, segregation and diversion from landfill.

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Commitment 3.2. Manage excavation waste	
Responsibility	Primary: Main Contractor & Waste Contractor Secondary: Site Manager
Proposed Approach	The proposed development will encourage on-site reuse and recycling of excavation waste where possible. Excavated materials will also follow the waste hierarchy. Only if excavated material is not required or is unsuitable / considered hazardous for the construction of the Proposed Scheme would it be considered waste

PRINCIPLE 3. MANAGE WASTE SUSTAINABLY AND AT THE HIGHEST VALUE

Commitment 3.3. Manage construction waste	
Responsibility	Primary: Main Contractor. Secondary: Project Managers.
Proposed Approach	The proposed approach to management of construction waste is to follow the waste hierarchy and circular economy hierarchy. The proposed development will aim to minimise the total amount of construction waste produced on-site through best practice material handling procedures. Appropriate materials storage and handling onsite will help to reduce the amount of waste produced at source. Careful segregation of waste will occur where space allows on site, which enables higher quality recycled materials and encourages local reprocessing. This will help to improve the transparency of waste processing and confidence in the end use of waste materials. The contractor will be tasked with maximising site segregation of construction waste to enable local reuse of waste materials and increase the quality of recyclable materials. Where this is not practicable, the waste will be handled by a Material Recovery Facilities, where the onsite team will also need to work together to improve the transparency of the waste management supply chain. This procedure is set out in the Site Waste Management Plan with the aim of meeting the 95% diversion from landfill target. Construction materials arriving to site on pallets will be carefully unloaded and neatly stored to enable their reuse on other sites and depots. The pallets are given back to the delivery lorry upon next delivery. During construction, the team will work with suppliers to further investigate packaging reduction measures. Monthly environmental inspections will take place and KPIs will be monitored. The KPIs will include waste generation, segregation and diversion from landfill.

PRINCIPLE 3. MANAGE WASTE SUSTAINABLY AND AT THE HIGHEST VALUE

Commitment 3.4. Manage municipal waste	
Responsibility	Primary: Client and Architect. Secondary: Property Manager / Retail Tenant(s) and Residents.
Proposed Approach	A Waste Management Strategy has been developed, ensuring that adequately sized bin storage areas are provided, access for collection personnel and vehicles has been established and other aspects of waste management is designed into the development at an early stage of the design. The estimated volumes can be found within the Site Waste Management Strategy. There will be four bins. One for general waste, one for pulpable waste, one for mixed recyclables and one for food waste, stored internally in each office before decanted into the communal bins in the ground floor bin store. This allows for appropriate waste management facilities in accordance with the Waste Hierarchy to enable segregation and recycling. It is anticipated that 50% of the bins would be dedicated for recycling, including organic waste. This meets the Greater Manchester Municipal Waste Management Strategy, which aims to achieve 50% recycling and composting of households rates by 2020. This recycling rate will be reviewed upon occupation. Waste collection frequency will be dependent upon the volume of waste generated, the storage method (i.e. whether balers and waste compactors are used) and the schedule of the appointed waste contractor. It is anticipated that commercial waste will be collected once a week. The management company would be responsible for the monitoring of recycling rates and promote actively high recycling rates in the building, e.g. by providing information on segregation. Commercial tenants will be served by private waste contractors.

End of Life

In order to promote use of materials and elements at the end of the buildings' life, the team will investigate the following and where possible;

- Select products and materials that can be remanufactured or reused at end of first life, largely brick, concrete and steel.
- Use materials with recycled content.
- Select products that are designed for disassembly, such as demountable cladding.
- Select materials that can be recycled or composted at end of life.
- Consider leasing short-lived components
- Avoid permanent fixing or products, such as by glue and cement mortar, to enable end of life deconstruction and salvage of building elements; and
- Ensure fixings are easy to access to enable disassembly.

When the asset is approaching obsolescence, McCauls will aim to investigate the feasibility of options to extend end of life. If extending is not feasible, McCauls may be in a position to consider replacement scenarios where appropriate.

Conclusion

McCauls have a proactive approach to sustainable development and takes a holistic view to delivering a building that embraces the principles of the circular economy.

This circular economy statement has been prepared to demonstrate how the proposed development at Laystall Street has and will deliver the principles of circularity to discharge condition 3b made on the decision notice for full planning permission.

In this context the key circular economy commitments incorporated into the proposed development include the following;

- Ongoing encouragement of the specifications that maximises energy and resource efficiency (e.g water efficiency) within the design.
- Ongoing investigation into the inclusion of modularisation into the design including bathroom pods and demountable cladding/fixtures.
- Seek to specify the use of recycled materials wherever viable including steel, concrete, aggregates and building finishes such as carpets.
- Utilise off-site prefabrication and precast concrete where possible.
- Procurement of sustainable and robust/durable materials.
- Continue to investigate flexibility within the design to allow for changing and future needs of the development.
- Reuse of the site worn materials within the in site construction, or where possible investigate options for recovery and reuse of material to increase diversion from landfill.
- Continue to work with suppliers to reduce packaging waste or investigate take-back schemes.
- The demolition and construction waste targets and commitments will be monitored.