



ELEMENT
SUSTAINABILITY

FIRST STREET PLOT 9B, MANCHESTER

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1. INTRODUCTION

Element Sustainability has been commissioned by Renaker to prepare a technical report in support of the discharge of Condition 3B of the Planning Discharge Support in relation to the First Street 9B project.

Condition 3B reads as follows:

Prior to above ground development submission of a Construction Environmental Management Plan (CEMP)- Circular Economy Statement (Materials) to include details of the strategy for securing more efficient use of non-renewable material resources and to reducing the lifecycle impact of materials used in construction and how this would be achieved through the selection of materials with low environmental impact throughout their lifecycle



2. DEVELOPMENT PROPOSALS

Development Site

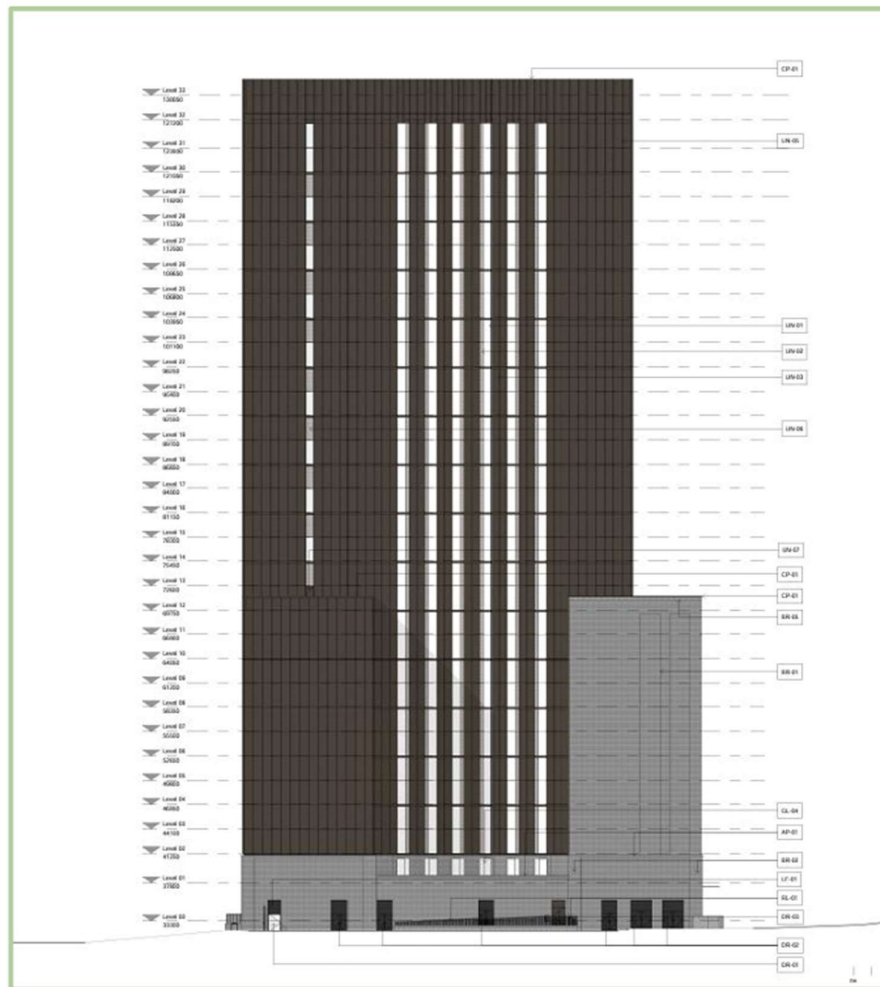
The VITA Group are developing a new purpose-built student accommodation, providing a 32-storey building (G+31) containing 861 studios on the site known as Plot 9b, First Street in Manchester.

The site location and building elevation are presented in Figures 2.1 & 2.2.

Figure 2.1 – Site Location Plan



Figure 2.2 – Elevation of building



3. METHODOLOGY / WORK SCOPE

To assess the performance of the Embodied Carbon Reduction Strategy previously prepared for this scheme, we will prepare a monitoring report detailing:

- Principle materials used within the construction;
- Recycled material content;
- Potential for future recycling

The report includes details of the strategy for efficient use of non- renewable resources, detailing how the material selection has led to more efficient resource use, and demonstrating how the selection of low-impact materials has reduced the lifecycle impact of the project

The report shows evidence of compliance with the previously submitted Circular Economy Statement, through monitoring and mitigation based on the RIBA Stage 4 design specification of the following issues:

- Maximise Reuse
- Building Design Optimisation
- Standardisation
- Minimise Materials Impact and Waste

The below tables summarise how the development has addressed the requirements, therefore supporting the discharge of Condition 3B of the planning approval (141786/FO/2024) for this scheme.



4. CIRCULAR ECONOMY MONITORING FRAMEWORK – VITA, FIRST STREET 9B

Maximise Reuse (including refurbishment and repurpose)		
Objective	Commitment	Evidence
Reuse the existing asset	<p>As the site was formerly a vacant brownfield plot of land, there was no existing asset to reuse. The ground has also been previously cleared and levelled before the client, VITA Meadows, acquired the development plot.</p> <p>The Ground Investigation report produced by Ramboll dated 24.02.2017 noted that it was unlikely significant quantities of site won fill would be reused on site in an engineering capacity.</p> <p>The waste management procedures will be communicated to staff members and subcontractors on site to ensure everyone involved in the project understands the targets, how to sort and dispose of waste and what information and paperwork will be required to ensure waste is recorded correctly.</p> <p>As part of the Site Waste Management Plan (SWMP), toolbox talks will be delivered frequently to the site staff to train them on reducing waste and / or salvaging materials for repurposing, and the periodic reporting against targets set for waste diversion.</p> <p>A detailed Bill of Materials will be used to benchmark quantity of recycled content and re-used building materials.</p> <p>Renaker Build Limited's waste management strategy confirms they are committed to implementing the waste hierarchy in order to minimise waste and promote sustainability, the re-use of whole items or materials is one of the most preferred waste management options in this hierarchy.</p>	<p>BREEAM MAT 06 – Material Efficiency produced by Tim Groom Architects dated 11.03.2025</p> <p>Phase 3a Site Remediation Strategy Plot 9B First Street, Manchester produced by ROC Consulting.</p> <p>VITA 9B Site Waste Management Plan produced by Renaker.</p>
Recover materials and products on site or from another site	<p>The Material efficiency report produced by Tim Groom Architects details that extensive site investigation will be undertaken at an early stage to consider the reuse of existing material and services on the site. Very little site excavation is required, wherever land is excavated efforts will be made to reuse this material within the landscaping design for drainage features.</p> <p>During construction, the main contractor has aimed to maximise the quantity of materials being recovered for reuse. This will include the efficient use of materials through effective design considerations, using reclaimed materials and substituting materials for more durable alternatives.</p> <p>All necessary measures have been taken to maximise the diversion of construction waste from landfill. Site management procedures will be followed, which outline the strategy for collecting, storing, management and collection of construction waste</p> <p>Waste and recycling reporting metrics e.g. How much waste the demolition, construction and operation phase of the proposal is expected to generate, and how and where the waste will be managed in accordance with the waste hierarchy.</p>	<p>BREEAM MAT 06 – Material Efficiency produced by Tim Groom Architects dated 11.03.2025</p> <p>VITA 9B Site Waste Management Plan produced by Renaker.</p>
Share materials or products for onward reuse	<p>The building will be designed to be easily adapted internally for reuse and individual materials such as the external brickwork can be easily replaced or reused. The strategy for reuse and recovery is outlined in the Material Efficiency report prepared for this scheme.</p> <p>Regular waste/recycling reports will be completed stating the progress as a % of reuse or recycling.</p>	<p>BREEAM MAT 06 – Material Efficiency produced by Tim Groom Architects dated 11.03.2025</p>



Building Design Optimisation		
Objective	Commitment	Evidence
Design for longevity	<p>Use of glues and composite materials will be minimised wherever possible Elements such as the brickwork and unitised facade are able to be reused.</p> <p>The sustainability materials procurement plan outlines how and where durable materials will be used on site to increase the material longevity:</p> <ul style="list-style-type: none"> - External material selections for the site includes robust construction / vehicle impact protection methods where possible, for example, brickwork walls, bollards, raised kerbs. - Internally, the team have favoured the use of robust (e.g. heavy or severe duty plasterboard) or treated, exposed brickwork in circulation areas. For internal walls with a structural load, the scheme will utilise concrete and concrete blocks with robust plastering. - The design favours hard wearing and easily wash able floor finishes, e.g. lino, vinyl or hard-wearing carpet. - WC and wash area specifications employ vinyl and / or ceramic tiles with IPS panels as appropriate. 	<p>BREEAM MAT 06 – Material Efficiency produced by Tim Groom Architects dated 11.03.2025</p> <p>Sustainable Materials Procurement Plan – VITA Plot 9b First Street Manchester</p>
Design for adaptability/Flexibility	<p>The material efficiency report produced by Tim Groom Architects confirms the material envelope will be designed for deconstruction/ and adaptation, and the structure will be open plan to allow for future adaptation of the floor layouts.</p> <p>The design and structure will accommodate for the building to be adapted and re purposed in the future to avoid the need for extensive material removal or change.</p>	<p>BREEAM MAT 06 – Material Efficiency produced by Tim Groom Architects dated 11.03.2025</p>
Design for assembly, disassembly and recoverability	<p>A Design for disassembly and adaptability report has been produced by Tim Groom Architects. This report outlines recommendations and solutions for the project and shows where they can be implemented. Use of glues and composite materials will be minimised wherever possible Elements such as the brickwork and unitised facade are able to be reused.</p>	<p>BREEAM MAT 06 – Material Efficiency produced by Tim Groom Architects dated 11.03.2025</p>

Standardisation		
Objective	Commitment	Evidence
Standardised, modular elements in buildings are created with less waste and are easier to reuse.	<p>The material efficiency report produced by Tim Groom Architects highlights that the use of modular elements have been considered and utilised wherever possible.</p> <p>The majority of the building envelope will relocate some of the assembly process off-site, helping to control and mitigate wastage. Pre-cast stairs, cladding banding and ramps will be utilised in order to reduce concrete pouring on-site.</p> <p>Elements such as facade panels/ windows, doors and internal wall types are to be designed and scheduled to reduce variation wherever possible. This support both material efficiency and viability of the scheme.</p>	<p>BREEAM MAT 06 – Material Efficiency produced by Tim Groom Architects dated 11.03.2025</p>



Minimise Materials Impact and Waste		
Objective	Commitment	Evidence
Use low impact new materials	<p>A preliminary Life Cycle Analysis (Stages 2&4) was undertaken at the concept and technical design stage to benchmark the development's environmental impact (particularly in relation to global warming potential) and number of iterations were carried out to identify opportunities for reducing the embodied carbon of materials such as concrete and steel, by reducing the quantities proposed or by suggesting other materials, for example the use of aluminium cladding (aspect cassette system) as an alternative for aluminium cladding (Focchi).</p> <p>A separate RICS Life Cycle Assessment (LCA) has been undertaken at the concept design – planning stage, this study found that life cycle modules A1 to A3 (materials) to have the highest carbon emissions. However, the embodied carbon associated has been significantly reduced through cement replacement alternatives in the form of granulated blast furnace slag (GGBS). The results show the scheme's whole life carbon equivalent (kgCO₂e/m²) improves upon the Low Energy Transformation Initiative (LETI) 2020 upfront and whole life 2030 carbon targets.</p> <p>The BREEAM MAT 02 Material Tracker is being used to track which products being used on site have an EPD so its impact can be assessed and minimised on site.</p>	<p>MAT 01 Technical Design Option Appraisal Report.</p> <p>BREEAM MAT 02 Materials Tracker.</p> <p>2-2024.118-First Street-RICS LCA-CD-1.0</p>
Use recycled content or secondary material	<p>A detailed Bill of Materials has been produced, specifying all materials used in the project, including their quantities and costs. This helps calculate the recycled content by value.</p> <p>The RICS LCA report confirms that 96% recycled content concrete reinforcement bars will be used on this project. With the total upfront embodied carbon being 471kg CO₂e/m² for the project which improves upon the Low Energy Transformation Initiative (LETI) 2020 upfront and whole life 2030 carbon targets</p> <p>In compliance with Planning Condition 3B, monitoring reports will be prepared that record the recycled content of materials, the potential for future recycling, and are benchmarked against a relevant industry standard.</p>	<p>2-2024.118-First Street-RICS LCA-CD-1.0</p>
Design out waste	<p>The LCA helps reduce demand for materials and minimise quantities used by identifying where materials and their impacts are focused, which enabled the design team to create a more resource efficient design.</p> <p>The waste & Servicing strategy was developed to ensure that multiple waste streams are segregated at source and most efficiently collected from across the multiple living and communal spaces.</p> <p>The residents will be provided with waste storage facilities that are intended to minimise general waste and encourage the recycling of paper/cardboard, metal and glass.</p> <p>The on-site management team will ensure that waste from communal spaces is collected, managed and stored accordingly</p>	<p>Waste & Servicing Strategy produced by SLR Consulting Limited dated 12th December 2024</p>
Reduce construction impacts	<p>As part of the BREEAM assessment, this project has construction waste requirements for the Wst 01 criteria. The targets are as follows:</p> <ul style="list-style-type: none"> The amount of construction waste generated per 100m² (GIA) to be less than or equal to 6.5 tonnes; and, Diversion from landfill benchmarks: <ul style="list-style-type: none"> Non-Demolition – 70% Demolition – 80% <p>Regular waste reports will be provided of evidence to ensure the targets above are being met.</p> <p>As referenced above the majority of the building envelope will relocate some of the assembly process off-site, helping to control and mitigate wastage. Pre-cast stairs, cladding banding and ramps will be utilised in order to reduce concrete pouring on-site.</p> <p>The Site Waste Management Plan outlines Renaker's commitment to implementing the waste hierarchy across all projects and ensuring that site waste rules and arrangements are communicated to all employees and sub-contractors within the site induction.</p>	<p>2024.118-First Street-Circular Economy Statement-1.0</p> <p>VITA 9B Site Waste Management Plan produced by Renaker</p>

