



Tilley & Barrett
DEMOLITION

Pre-Demolition Audit

Tilley and Barrett

TCL1182 - Project Union - Addison Lee

Union Park, North Hyde Gardens, UB3 4QR

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1 Introduction

Toureen has produced this pre-demolition document for the proposed development to take place at Project Union, Addison Lee.

The key project objective is to reduce waste and support circular economy to ensure that consideration is made to the impact of materials waste and works to be carried out at early planning stages.

The audit aims to assist in maximising resource recovery by ensuring that the maximum potential for salvage, reuse, recycling, recovery and minimising waste as a priority.

It is considered that this phase of the project is a very important part of the whole development and it is essential that all involved contractors in the project delivery fully understand the impacts of material arisings and waste generated and contribute on achieving the projects targets.

Toureen have a target to achieve at least 95% diversion from landfill of non-contaminated waste, with an aim for zero non-hazardous waste to landfill.

This audit is based on information from the following sources:

- Greenhatch Groups Topographical Survey 30160_T, dated April 2018
- Photographic records from external and internal walkarounds in November 2024
- An external walkaround carried out on 19 November 2024.
- Powell tender and associates structural drawings 6385/1 through 6, dated October 1997.

1.1 Site Description

The site is located at address: Union Park, North Hyde Gardens, UB3 and is located on the Project Union development site.

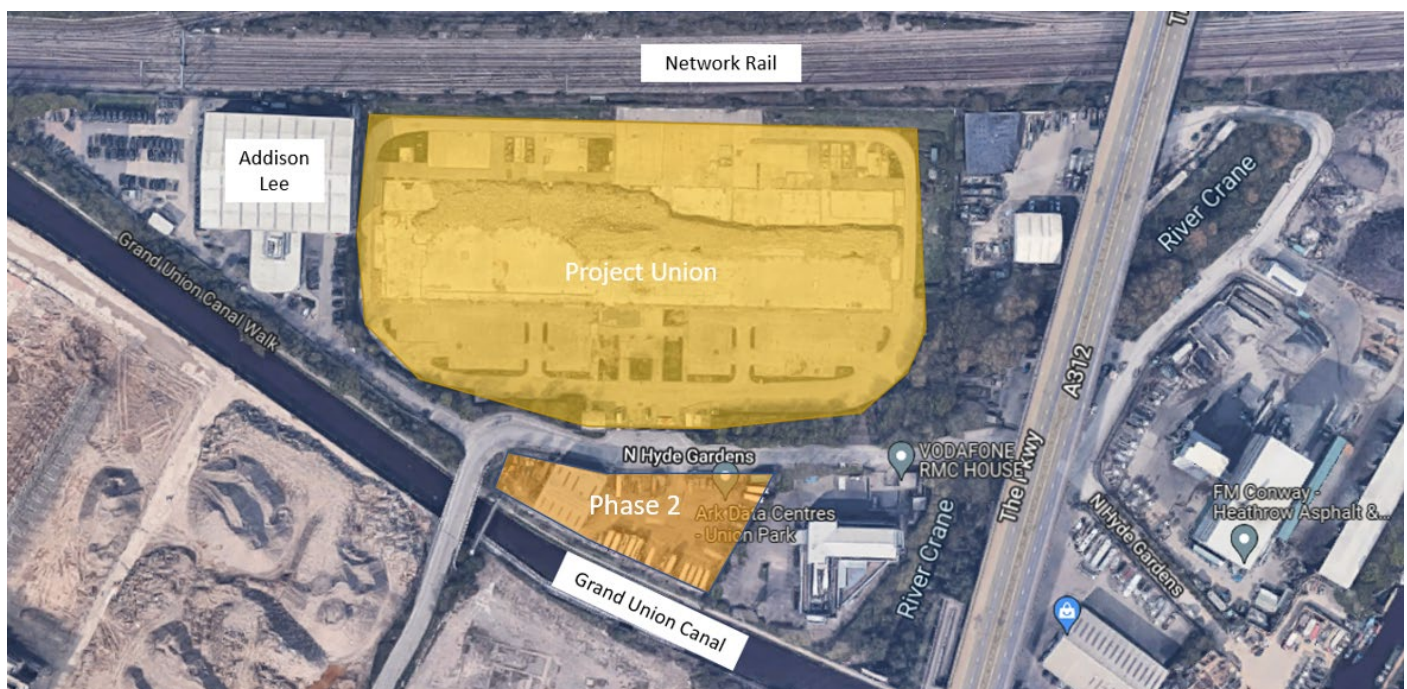


Figure 1 – Site location

The Addison Lee building is part of a wider development site where a number of data centres

are being constructed.

The Addison Lee building is split into two segments – an office and a warehouse. The office building is a two-storey brick building with a small plant room located on the roof. There is a party wall which connects the warehouse segment to the offices. The warehouse is a predominantly steel structure with blockwork elements at the low level. It is clad with steel sheeting and has a corrugated roof.

The Gross internal area is estimated at 3493m², broken down as below:

Office Ground floor:438m²

Office first floor:438m²

Plant room: 77m²

Warehouse:2540m²

The building is being demolished because it no longer fulfils a functional role within the new, broader development plan. The site is being redeveloped to accommodate several data centres, and since this building does not serve that purpose, it is considered redundant. The decision to demolish the structure has been carefully evaluated and justified as part of the planning process.

As per the London Plan legacy asset decision making tree, if the building is proposed to be demolished then the building is recommended to be carefully disassembled and reused to maximise residual value of the existing elements and materials, as informed by this pre-deconstruction audit upholding good practice circular economy targets such as the GLA's pioneering project targets.

Further, to mitigate and offset the emissions associated with demolition, it recommends upholding voluntary good practice targets on embodied and operational carbon.

1.2 Audit Methodology

The audit methodology is in alignment with the GLA London Plan policy SI 7 circular economy statements guidance (March 2022) section 4.6. Further, audit is aligned to the BREEAM New Construction Wst 01 pre-demolition audit requirements and the BRE pre-redevelopment audits Code of Practice (July 2017) requirements

2 Key Materials

This audit has identified the key materials that will arise as a result of the demolition. The most suitable management options have then been determined for key materials identified in order to maximise the recovery of each of the materials.

European Waste Catalogue	Key Group	Examples
17 01 01	Concrete	<ul style="list-style-type: none"> Office first floor slab Plant room slab
17 01 02	Bricks/Blockwork	<ul style="list-style-type: none"> Bricks on office elevations Low-level blockwork
17 01 03	Tiles and ceramics	<ul style="list-style-type: none"> Ceramic tiles Sanitary ware (toilets, sinks)
17 02 01	Timber	<ul style="list-style-type: none"> Board products such as plywood for internal partitioning Door frames Skirting boards

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17 02 02	Glass	<ul style="list-style-type: none"> • Windows • Secondary glazing • Glass door/entryway • Internal partitioning
17 02 03	Plastics	<ul style="list-style-type: none"> • Drainage Pipes
17 04	Metals	<ul style="list-style-type: none"> • Structural Steel – columns and beams • Secondary steel – purlins, bracings • Corrugated roof • Roller shutter doors • Steel cladding • Stair handrail and nosing • Reinforcement • Radiator • Cables • Window frames
17 06 04	Insulation	<ul style="list-style-type: none"> • Glass fibre • Mineral wool • Foamed plastic
17 08 02	Gypsum	<ul style="list-style-type: none"> • Plasterboard
15 01	Packaging	<ul style="list-style-type: none"> • Pallets • Cardboard • Cable drums • Wrapping bands • Polythene sheets
16 02	Electrical and electronic equipment	<ul style="list-style-type: none"> • Cables • Various kitchen appliances (kettle/toaster/microwave) • Redundant plant • TVs
20 01 11	Floor coverings (soft) / textiles	<ul style="list-style-type: none"> • Carpet tiles • Underlay • Blinds
20 02 21*	Fluorescent tubes	<ul style="list-style-type: none"> • Lights
20 03 01	Canteen/office	<ul style="list-style-type: none"> • Office waste • Canteen waste
20 03 07	Furniture (it is currently unknown whether the furniture will be removed from the building when it is vacated)	<ul style="list-style-type: none"> • Tables • Chairs • Desks

3 Outline Demolition Methodology

A soft strip will be carried out to remove internal finishing materials and the existing mechanical electrical plant. It is currently unknown whether any furniture or internal partitions will remain in the building once it is vacated.

The core materials for removal during soft strip will include (but are not limited to): timber, plasterboard, ceiling tiles, carpet tiles, linoleum and plastics, mild steel, plumbing and electrical cables. To maximise opportunities for reuse and resale to secondary markets, the quality of materials salvaged during soft strip must not be degraded significantly during their removal, segregation, and storage.

Once the soft strip is complete, it is anticipated there will be two main phases of work: first the deconstruction and dismantling of the warehouse section and then the demolition of the office building.

The warehouse will be demolished by cutting and removing the steel panelling and roof, using a crane to lift the large steel elements out. The secondary steel will then be cut at the joints and lifted out. Finally the main steel frame will be pushed to the ground and cut into segments on the ground. Temporary support structures will be used to ensure stability throughout the deconstruction process. The structure is only to be demolished to ground slab level.

The offices will be demolished using excavators and hydraulic breakers. All materials will be transported to a central stockpile before being removed from the site.

4 Potential waste routes

In order to achieve the waste recovery potential, on site segregation would be expected. Dedicated storage on hard standing with appropriate signage and sorting processes need to be in place to ensure segregation is upheld on site. Waste must be collected and disposed of by a licenced contractor to an appropriately licenced waste destination in accordance with the Duty of Care and all other relevant environmental legislation.

The recycling of scrap metal and inert demolition materials yields the highest recycling rates, due to the inherent recyclability of these materials, with waste management contractors in London frequently reporting recycling rates at or near to 100%. As these materials typically constitute the bulk of waste generated by full demolition projects, it is not uncommon for such projects to achieve overall diversion rates of 95% to 100% from landfill for the demolition phase.

For other waste streams, the degree of segregation, wherever practical, significantly contributes to achieving high recycling rates. The waste transfer stations referenced in Section 6 are equipped with advanced sorting and recycling facilities, enabling them to routinely achieve good recycling rates for various waste fractions generated during demolition and construction projects. Any remaining waste is usually either sent to landfills or processed as refuse-derived fuel (RDF).

The recycling rate for materials that are more challenging to recycle, such as wood, carpet, insulation, polystyrene, canteen waste, and residual waste resulting from the sorting of mixed skips, can vary widely. The recycling rate for non-metal and non-inert waste streams can range from 65% to 98%, contingent on the specific materials or the contents of the mixed waste streams being sent offsite and the remaining sent for energy recovery and a very small percentage (if any) sent to landfill.

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Material/Waste type	Quantity	% Reused (offsite)	% Recycled	% Energy Recovery	% Diverted from landfill
	Forecast	Target	Target	Target	Target
17 01 01 – Concrete	104.8m3	100			
17 01 02 - Bricks	165.4m3		100		
17 01 03 - Tiles and ceramics	<1ton	Potential reuse of sink basins depending on market and damage during removal.	100		
17 02 01 - Timber	0.5ton		Potential Recycling/reuse opportunity with community wood scheme	100 (Demolition timber usually sent for incineration)	
17 02 02 - Glass	180m2		100		
17 02 03 - Plastics	~250kg		100		
17 04 - Metals	140ton	45	55		
17 06 04 - Insulation	460m2		100		
17 08 02 - Gypsum	-		95-100	0-5	
15 01 - Packaging	-		95	5	
16 02 - Electrical and electronic equipment	1ton		100		
20 01 11 - Floor coverings (soft) / textiles	876m2	40		60	
20 02 21* - Fluorescent tubes	~120units		98.5		1.5
20 03 01 - Canteen/office	-			100	
20 03 07 - Furniture	-	TBC – potential for charity donation			

5 Best Practice Opportunities

To maximise material recovery and reuse rates in the deconstruction of the Addison Lee building, best practice opportunities will be implemented where possible within program timeline and cost constraints. Best practice opportunities for materials recovery have been identified based on classification of site materials based on their embodied carbon content, condition, deconstructability, reclamation potential and value in the secondary marketplace. Key considerations for the adoption of best practice materials recovery strategies include: extensions to programme timelines and costs; health and safety; materials segregation and assessment; storage and transport logistics; offsite brokers and secondary materials marketplaces.

A number of opportunities for reuse have been identified:

- **Structural Steel** – Substantial steel columns and beams are visible in the building frame, with high recovery potential following further structural investigation. Cleveland Steel and European Metal Recycling (EMR) accept reclaimed structural steel for reuse following circular economy principles. Collaboration between Cleveland Steel / EMR would be required prior to demolition for identification of steel sections for recovery and implementation of removal strategies to minimise damage to valuable steel. The steel will be cut at the joints to be lifted out by the crane. Is likely that only lengths of steel over 3m will be salvaged by Cleveland Steel and EMR.
- **Metal sheeting on the façade and stair handrails** can be recovered for resale through Cleveland Steel. Cleveland Steel's relationship with the agricultural industry provides an established reuse pathway for reclaimed metal sheets. Handrails can be unbolted during the soft strip phase. The metal sheeting will be cut in sections and lifted down by the crane. Condition will be assessed to determine if there are opportunities for salvaging. If not, the steel will be scrapped.
- **Carpet tiles** - A large area of the flooring in the office building is carpet tiles. There is a market for these to be reused. These are stuck down with adhesive so some will be damaged during removal. It is likely that 40% will be in good enough condition for reuse.
- **Wood** – Early engagement with Community Wood Recycling to scope whether any timber arisings would be suitable for higher grade recycling or reuse. They are a social enterprise collecting waste wood to remanufacture into products for resale.
- **Sanitary installations** – the sinks and basins left in the building are of a good condition and there is some potential for reuse. These items could be damaged while removing due to the fixings. Condition will be assessed once items are removed.
- **Internal Fire doors** – the fire doors are in good condition and can be easily dismantled for reuse. O'Donovan Re-use hub and Community wood recycling will be explored as options.
- **Furniture** - Furniture recovered during soft strip can be donated to local charities such as Emmaus or the British Heart Foundation. Condition assessment of furniture during soft strip will provide justification for careful handling and storage. Dependent on furniture being left in building when vacated.

Other options:

The secondary materials marketplace is growing in London through hubs, platforms and community initiatives. O'Donovan's Re-use Hub accepts pallets, wood, doors and furniture for repurposing; Globechain is an online platform for listing of reclaimed materials for free. Direct engagement with end-users or resellers is the preferred approach, since off-site storage of materials in alternative facilities can lead to valuable materials sitting in storage and ultimately being disposed of through conventional waste streams with heightened carbon footprint due to extra handling and transport. Early engagement, collaboration and planning with third parties is essential to facilitate maximal materials recovery and reuse.

Material/Waste type	Issues for the reuse and recycling of materials
Steel (17 04)	Any lengths over 3m will be considered for reuse. Anything less than this will be scrapped. A crane will be used on site allowing for large steel sections to be lifted safely. There is structural steel within the office segment however this will be difficult to salvage because the columns are encased in concrete/masonry and the beams have precast slabs on top and could therefore be damaged during demo works.
Brick (17 01 02)	Technically feasible to reuse, although not with existing demolition methodology. Scaffolding would be required. Requires high labour, programme and associated costs and quality obtained not high due to mortar.
Timber (17 02 01)	Community wood will be explored as a first option. Otherwise, demolition timber predominantly sent for incineration. Limited timber waste identified on site, mdf has low grade reuse potential.
Glass (17 02 02)	There is potential for high level of recycling through Saint Gobain recycling scheme. This requires glass to be segregated and non-contaminated. Due to the methodology of demolition, this will not be feasible.
Ceramics	The toilets, sinks and ceramic tiling in the bathrooms are in good condition however there is low potential for reuse. There is a potential reuse market for sinks and basins which will be explored. Fixing methods means damage whilst removing is highly likely.
Plasterboard / Gypsum (17 08 02)	Installation of plasterboard not designed for disassembly. It will be segregated and sent for recycling separately.
Fluorescent tubes and other mercury-containing waste (20 01 21*)	98.5% of this waste stream can be recovered (metal and glass). Phosphor powder goes to landfill via licenced contractor.
Electrical equipment (16 02 16)	WEEE to be sent to appropriately licenced waste management contractor. CO2e factors to be considered for this transport.
Furniture (20 03 07)	It is currently unknown what furniture will be left in the building once it is vacated.

	Furniture recovered during soft strip can be donated to local charities such as Emmaus or the British Heart Foundation. Condition assessment of furniture during soft strip will provide justification for careful handling and storage.
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6 Waste Processing Routes

Once onsite applications for material arisings have been exhausted, the London Waste Map is a useful tool to identify suitable waste contractors local to the project, with the view to also keep resources localised in London: <https://apps.london.gov.uk/waste/>.

Identification of local waste management contractors has also been considered to reduce distance travelled and associated carbon emissions for the development's waste removal and to support the wider sustainability strategy. This will be further developed during the site establishment phase.

Material/Waste type	Contractor / Destination	Permit Number
Inert Demolition Material (concrete, bricks etc.)	Foley Haulage Limited (4 miles)	JB3209LR
Metals	B.F.A Recycling Limited (10 miles)	EB3931RY
	European Metal Recycling (12 miles)	FB3205MK
Plastic	X-BERT Haulage Limited (12 miles)	ZP3497NS
Timber		
Textiles		
Gypsum		
Electrical Equipment		
Canteen waste		
Floor coverings	Tarkett Restart (carpet/vinyl/linoleum takeback Scheme)	n/a
Hazardous waste	Wastecare Limited (33 miles)	EP3494VG
Furniture	Local Furniture Charities: British Heart Foundation TW13 4AU (5 miles) Sue Ryder TW14 9BP (5 miles) Princess Alice Hospice TW18 4PQ (11 miles)	n/a

7 Existing Site Plans

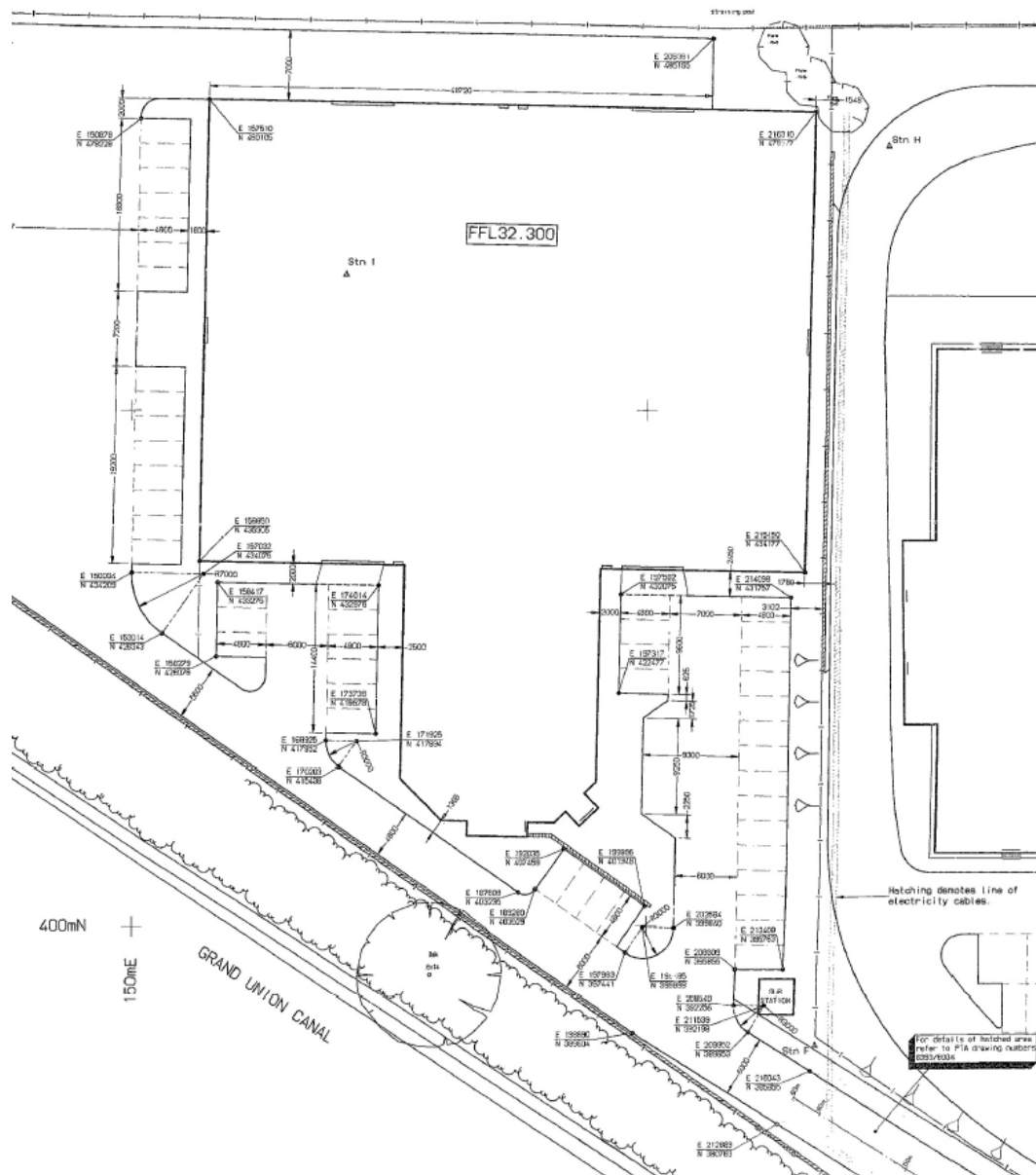


Figure 2 - Site layout Plan

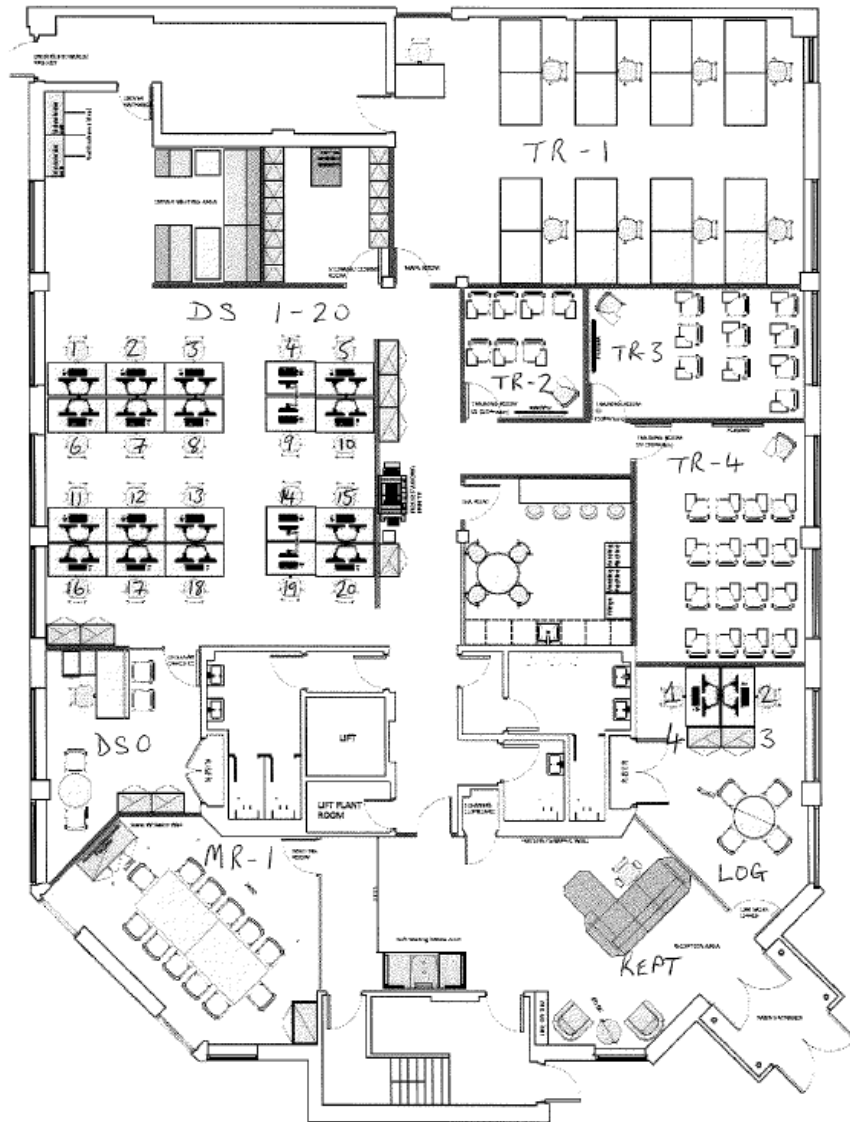


Figure 3 – Ground floor office layout

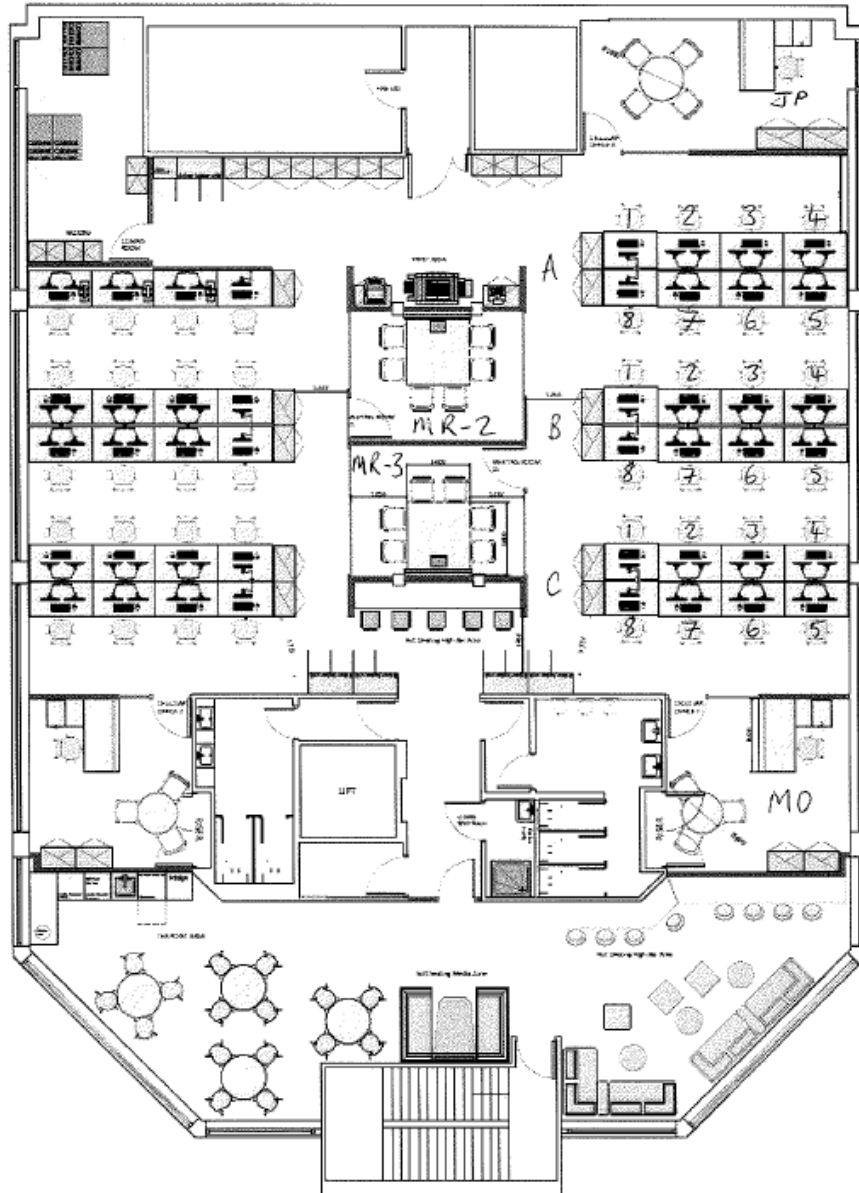










Figure 4 – First floor office layout

Appendix A – Site Photos

		
External wall – Office Building	Steel Cladding - Warehouse	Carpet tiles
		
Stairs with metal handrails	Internal Fire door	WC
		
Office reception	Kitchen units	Shower room tiling



Warehouse steel frame



Warehouse steel frame



Warehouse roller doors

Appendix B – Material Inventory

Description	Material	EWC Code	Condition	Deconstructability	Reclamation suitability	Area (m2)	Volume (m3)	Density (kg/m3)	Mass (tonnes)	ECF (A1-A5)	CO2e	Reuse Potential
Office												
1st Floor RC Floor Slabs	Concrete	17 01 01	Unknown - assumed good.	Concrete slab will be broken out by Hydraulic Breaker mounted on an anticipated 35 Ton Demolition Excavator or Similar.	Recovered concrete will be stockpiled as hardcore and then removed from the site for offsite crushing and reuse. Due to limited space on site, resulting from ongoing construction activities within the wider development, on-site crushing is not feasible.	466	93.2	2400	224	0.1	22.4	Offsite Reuse
Plant Room RC slab	Concrete	17 01 01	Unknown - assumed good.	As Above	As Above	77	11.6	2400	28	0.1	2.8	Offsite Reuse
Steel Reinforcement	Steel	17 04 05	Unknown - assumed good.	Will be broken out when encasing concrete is demolished.	No - will be removed and recycled through appointed scrap metal yard.				30	1.7	51	Recycle
Walls	Brick/Blockwork	17 01 02	Good	No	No	460	115	2000	230	1.357	312.11	Recycle
Roof Panels	Steel	17 04 05	Unknown - assumed good.	Will be cut out in sections and lifted down.	Dependent on size of sections cut out and any damage during the process, some sheeting could be reclaimed.	520		7800	5.2	1.7	8.84	Reuse/Recycle
Windows	Glass	17 02 02	Good	Investigation to determine whether laminated and could be recycled separately. Glass would normally through the course of the demolition become a product within the hardcore and be crushed accordingly and re used on site as fill or piling mat.	As the overall condition of each panel of glass cannot be assured the risk to the operative from severe laceration is extremely high, therefore the recovery of glass we believe is not an option to be considered. If glass can be broken/shattered and recovered for recycling that is an option to be explored further.		14.4	2500	36	1.792	64.512	Recycle
Bathrooms	Tiling and Ceramics	17 01 03	Good	Tiles are fixed with adhesive and grouted in place, making it difficult to remove without damage. Sinks are fixed mechanically and sealed in place. Fittings will be unbolted where possible.	Toilets are easier to remove without damage, however less market demand due to cleanliness issues. Sinks have higher market value and will be explored if they are removed without damaged.			2500	1	1.305	1.305	Reuse/Recycle

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Internal Doors	Timber	17 02 01	Good	Removed from hinges and segregated during soft strip.	If the doors are not damaged and are able to pass fire safety regulations then they would be suitable for reuse.			400	0.5	0.483	0.2415	Reuse/Recover
Warehouse												
Steel Frame	Steel	17 04 05	Good	Steel columns and beams will be cut at the joints and removed by crane.	Any length over 3m will be suitable for reclamation. Any sections under this length will be removed and recycled through appointed Scrap Metal Yard.			7800	110	1.7	187	Reuse/Recycle
Walls	Brick/Blockwork	17 01 02	Good	No	N/A	360	50.4	2000	101	1.357	137.057	Recycle
Roof Panels	Steel	17 04 05	Unknown - assumed good	Will be cut out in sections and lifted down.	Dependent on size of sections cut out and any damage during the process, some sheeting could be reclaimed.	2740		7800	27.4	1.7	46.58	Reuse/Recycle
Cladding Panels	Steel	17 04 05	Fair - some damage	As Above	As Above	1900		7800	19	1.7	32.3	Reuse/Recycle