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ENERGISING ENVIRONMENTS

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Circular Economy Statement – Supporting Document

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Residential Care Home,
Cricket Field Road,
Uxbridge

CLIENT:

Hillingdon Council



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Table of Contents

1.0	EXECUTIVE SUMMARY	1
2.0	METHODOLOGY AND DATA SOURCES.....	2
3.0	EXISTING BUILDING ASSESSMENT	3
3.1	EXISTING SITE.....	3
3.2	ASSESSMENT OF RETENTION OPPORTUNITIES	3
3.3	PRE-DEMOLITION AUDIT & DEMOLITION WASTE	3
3.4	RECOVERY STRATEGY – REUSE.....	4
3.5	RECOVERY STRATEGY – RECYCLING	4
4.0	PROPOSED DEVELOPMENT	5
4.1	DESIGNING OUT WASTE	6
4.2	DESIGNING FOR LONGEVITY	6
4.3	DESIGNING FOR ADAPTABILITY OR FLEXIBILITY	6
4.4	DESIGNING FOR DISASSEMBLY	7
4.5	USING MATERIALS THAT CAN BE RE-USED OR RECYCLED	7
5.0	BILL OF MATERIALS	10
6.0	RECYCLING AND WASTE REPORTING	12
6.1	DEMOLITION WASTE	12
6.2	EXCAVATION WASTE	12
6.3	CONSTRUCTION WASTE.....	13
6.4	MUNICIPAL WASTE	13
7.0	TARGETS	16
8.0	CONCLUSION	17
9.0	APPENDIX	18
9.1	GLA CIRCULAR ECONOMY TEMPLATE - BOM	18
9.2	GLA CIRCULAR ECONOMY – RECYCLED AND WASTE REPORTING TEMPLATE	19
9.3	ONECLICK LCA BUILDING CIRCULARITY RESULTS FOR MATERIALS RECOVERED AND RETURNED	20

1.0 EXECUTIVE SUMMARY

The Circular Economy Statement (CES) has been prepared to support the proposed redevelopment of Cricket Field Road, Uxbridge. The proposal comprises the demolition of the existing Civic Centre multi-storey car park and construction of a new 160-bed specialist residential care home with a Gross Internal Area (GIA) of approximately 8,658 m². The proposed development comprises a basement, ground floor and four upper floors.

The statement has been prepared in accordance with the Greater London Authority (GLA) Circular Economy Statement Guidance and London Plan Policy SI7, with the Whole Life Carbon Assessment and pre-demolition audit informing the material and waste strategy.

The existing car park has been assessed through the project pre-demolition audit. Approximately **9,977.83 tonnes of identified material arisings** comprise reinforced concrete, reinforcement steel, steel railings/guardrails and existing brickwork. Reinforced concrete represents the largest material stream, at approximately 9,275.78 tonnes, and will be prioritised for recycling, including potential on-site crushing where practicable. Reinforcement steel will be separated and directed to established steel recycling routes, while suitable brickwork, paving and metal components will be assessed for direct reuse.

The proposed development adopts a circular economy approach throughout the building lifecycle, with emphasis placed on:

- Maximising opportunities for direct reuse of suitable demolition materials, subject to pre-demolition inspection, with remaining arisings prioritised for recycling and recovery.
- Minimising excavation and maximising beneficial use of excavated materials.
- Reducing construction waste through material efficiency, coordination and segregation.
- Incorporating recycled and low-carbon materials where feasible.
- Designing for longevity, adaptability, maintenance and selective disassembly.
- Providing adequate facilities for separate operational waste collection.
- Monitoring waste generation and recovery through construction and operation.

Construction and excavation waste will be managed in accordance with the waste hierarchy, with materials reused on site where feasible, with surplus materials directed to licensed recovery facilities for beneficial reuse. A Resource Management Plan in conjunction with contractor waste reporting procedures will be used to monitor, record and report on waste arisings and recovery rates throughout the construction phase to ensure circular economy performance.

The project will adopt the GLA targets of a minimum **95% reuse, recycling or recovery of construction and demolition waste** and **95% beneficial use of excavation material**. Based on the current Stage 2 waste-management assumptions, the proposed municipal waste strategy demonstrates approximately **66% recycling and composting** by weight. The current assessment also indicates approximately **21% recycled content** across the building. These figures will be reviewed and refined as the design, procurement and operational arrangements develop.

At Stage 2, the design incorporates a low-carbon concrete strategy including **25% GGBS replacement and 25% recycled aggregate allowance**, together with reinforcement steel incorporating approximately **90–97% recycled content**, subject to structural and procurement requirements.

2.0 METHODOLOGY AND DATA SOURCES

The Circular Economy Statement has been informed by:

- The pre-demolition material assessment
- The project Whole Life Carbon Assessment
- Architectural drawings and design information
- Structural information available at RIBA Stage 2
- Building services information
- One Click LCA material model
- GLA Circular Economy Statement Guidance.

Material quantities for the proposed development have been derived from the Whole Life Carbon Assessment and the One Click LCA model. The material inventory has been used to establish the principal material stocks within the proposed development and to inform the assessment of recycled content, construction waste allowances, future material recovery opportunities and end-of-life scenarios.

The assessment has been undertaken at RIBA Stage 2 and therefore incorporates reasonable preliminary assumptions where coordinated structural, earthworks, MEP and product-specific information is not yet available. These assumptions will be reviewed and refined at later design stages as detailed design, specification and procurement information becomes available.

The GLA guidance recognises that quantities reported at the planning stage are estimates and may change as the design and construction progress. Actual waste arisings and management routes should subsequently be monitored and reported through the relevant construction-stage waste management processes.

3.0 EXISTING BUILDING ASSESSMENT

3.1 Existing Site

The site is currently occupied by the Civic Centre multi-storey car park with total area of 11800 m². The existing structure is predominantly reinforced concrete, with associated reinforcement steel, steel guardrails/railings and brickwork identified within the pre-demolition material inventory.

The proposed development replaces the existing car park with a purpose-designed specialist residential care home. The new building has a basement, ground floor and four upper floors, providing accommodation for 160 residents together with communal, care, staff, service and operational spaces.

3.2 Assessment of Retention Opportunities

Retention and adaptation of the existing structure were considered as part of the redevelopment strategy. The existing car-park form, floor-to-floor arrangement, ramps, circulation, servicing and accessibility requirements are not directly compatible with the proposed care-home accommodation. Retaining the reinforced-concrete frame would also require detailed structural appraisal and potentially significant strengthening and alteration.

Partial retention was also considered. At the current stage, the extent of alteration required to integrate retained structural elements with the proposed building does not provide a clear or efficient basis for the development. The project therefore proceeds on the basis of demolition and new construction, while prioritising recovery and retention of material value from the existing structure.

Planning-stage note: This conclusion relates to the current planning-stage design information. Any opportunities identified during construction planning for retaining discrete components or materials should continue to be considered before demolition.

3.3 Pre-Demolition Audit & Demolition Waste

The pre-demolition assessment identifies the following principal material arisings from the existing car park:

Material	Arising waste quantity	Recovery Opportunity
Concrete	9275.78 tonnes	Very high recycling potential; crush and recover as aggregate or engineered fill, subject to feasibility
Bricks	306.18 tonnes	Potential reuse of suitable bricks; recycle remaining masonry as crushed aggregates or transport to nearby facilities.
Reinforcement steel	376.81 tonnes	Very high recycling potential; segregate and send to established steel recycling route
Steelwork / guardrails and railings	19.06 tonnes	Very high recycling potential; segregate and send to established steel recycling route
Total waste arisings	9977.83 tonnes	

Table 1: Demolition material quantities. Source: Pre-Demolition Audit

3.4 Recovery Strategy – Reuse

The highest-value reuse opportunities will be considered before demolition and confirmed during pre-construction planning. Suitable components will be carefully removed, stored and assessed for condition and dimensional suitability.

Component type	Potential route	Planning-stage action
Bricks	Direct reuse where suitable; otherwise recycling	Assess condition, dimensions, contamination and demand before demolition
Pavers	Direct reuse where suitable	Lift carefully where practicable and assess for reuse in the new development
Steel guardrails/railings	Direct reuse of suitable components; otherwise recycling	Assess condition, dimensions and compatibility with potential reuse applications

Table 2: Material reuse strategy

3.5 Recovery Strategy – Recycling

Materials that cannot be directly reused will be segregated and directed to established recycling or recovery routes. Reinforced concrete is the dominant material stream and provides the principal opportunity for material recovery.

- Concrete: investigate on-site crushing for recycled aggregate or engineered fill, subject to space, environmental, technical and contractor constraints; otherwise use an approved off-site recycling facility.
- Reinforcement steel: segregate from concrete and direct to steel recycling.
- Steelwork and guardrails: retain suitable components for reuse and recycle remaining steel.
- Brickwork and other inert masonry: salvage suitable units for reuse and recycle remaining material as aggregate where appropriate.

The project will target at least **95% reuse, recycling or recovery** of non-hazardous demolition waste by weight. Waste transfer documentation and contractor waste records will be retained to verify actual destinations.

4.0 PROPOSED DEVELOPMENT

The circular economy strategy for the proposed care home focuses on reducing material demand, extending the useful life of building elements, avoiding unnecessary replacement, and maintaining the ability to repair, upgrade and selectively remove shorter-life components.

The project has considered the circular economy hierarchy in accordance with GLA guidance:

- Retain existing materials at highest value
- Reuse materials
- Recycle materials at highest value
- Recover value from remaining materials
- Minimise disposal to landfill

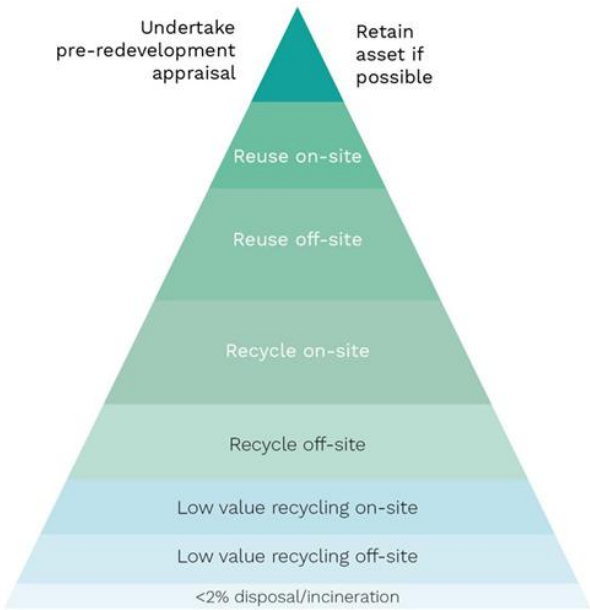


Fig 1: Value Retention Hierarchy

Recovery route	Description	Example relevant to construction
Reuse	Material or component is used again with minimal processing	Existing paving reused on site
Recycling	Material is processed into material for a new use	Steel recovered for steel manufacture
Downcycling	Material is recovered for a lower-value application	Concrete crushed for aggregate or engineered fill
Disposal	No practicable beneficial recovery route identified	Residual contaminated or unsuitable material

Table 3: Different types of potential material recovery for the proposed development

4.1 Designing out waste

The proposed development incorporates the following measures to reduce material waste during construction and throughout the building lifecycle:

- **Efficient and repeatable design:** Repetition of structural and architectural elements and standardised construction details will reduce cutting, off-cuts, over-ordering and material wastage.
- **Off-site fabrication and assembly:** the façade proposals incorporate prefabricated brick-faced cladding and components such as aluminium frame window and external door units.
- **Material optimisation:** Material dimensions and component sizes will be coordinated during detailed design with the Bill of Materials to minimise unnecessary cutting and material surplus.
- **Durability and site management:** Selection of durable components, alongside appropriate storage, handling and protection, will reduce damage, premature replacement and associated waste.

Further opportunities for prefabrication, modularisation and construction sequencing will be reviewed as the design progresses, and procurement information becomes available.

4.2 Designing for longevity

The proposed development has been designed around a durable reinforced concrete structural frame and piled foundation system intended to remain in service throughout the building design life with minimal structural intervention.

The external envelope comprises robust materials including brickwork, prefabricated brick panel cladding and aluminium-framed glazing selected for their **durability, weather resistance and long service life**. Building services will be specified based on durability, maintenance and replacement accessibility, allowing individual components to be upgraded without affecting the primary structure.

Internal partitions and finishes are expected to undergo **periodic refurbishment** during the operational life of the building; however, these elements can generally be repaired, replaced or upgraded independently of the primary structure and building envelope.

Collectively, these measures maximise the service life of the building, reduce premature replacement of major components and minimise future material consumption associated with refurbishment and maintenance works.

4.3 Designing for Adaptability or flexibility

The proposed development is purpose-designed as a specialist residential care home, so major change of use cannot be assumed. The circular economy opportunity is therefore primarily within the intended use of the building.

The robust primary structure allows internal spaces to be refurbished while retaining the structural frame. Lightweight internal partitions and coordinated services can support changes to room layouts, resident requirements and operational functions without wholesale structural intervention.

4.4 Designing for disassembly

The development supports selective disassembly of replaceable and shorter-life components, rather than full disassembly of the primary in-situ reinforced-concrete structure. Key measures include:

- Building services: arranged to allow access, maintenance and replacement of individual components.
- Internal and façade components: lightweight steel-stud partitions, glazing and aluminium framing can be removed or replaced with limited intervention to the primary structure where practicable.
- Information retention: relevant product and construction information will be retained through O&M/BIM records to support future refurbishment and material recovery.

Category	DfD potential	Mass disassembly potential
Load-bearing layer	2.81	839,855 kg
Non-load-bearing layer	3.36	127,491 kg
Product	2.92	30,780 kg
Surface layer	3.73	637,593 kg
Technical system	24.64	86,435 kg
Total	37.47	1,722,153 kg

Table 4: One Click LCA Design for Disassembly assessment

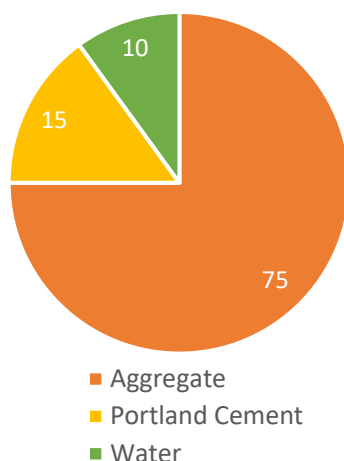
The OCLCA assessment indicates the greatest disassembly potential is associated with technical systems and accessible non-structural elements, while the primary load-bearing structure has more limited disassembly potential.

4.5 Using materials that can be re-used or recycled

The development has been designed using materials with established recovery and recycling pathways at end of life.

The primary reinforced concrete structure can be processed into secondary aggregate products, whilst reinforcement steel can be recovered through established steel recycling routes.

Conventional In-situ Concrete Mix



Green Concrete In-situ Concrete Mix

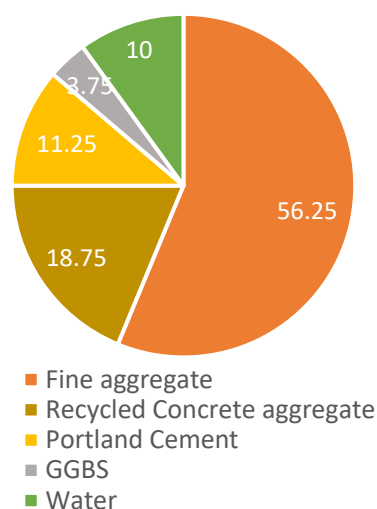


Fig 2: The composition of the proposed low carbon concrete mix. GGBS replacing Portland cement, Crushed/Recycled concrete aggregates replacing virgin aggregates – to reduce embodied carbon.

Material / strategy	Planning-stage commitment	Status
Concrete – GGBS	Minimum 25% GGBS replacement in relevant concrete mixes	Subject to final mix design
Concrete – RCA	25% recycled concrete aggregate allowance	Subject to mix design, technical requirements and supplier availability
Reinforcement steel	Approximately 90–97% recycled content	
Masonry / other products	Consider recycled-content alternatives where technically and architecturally suitable	To be confirmed through detailed design/procurement

Table 5. Planning-stage recycled and low-carbon material commitments.

Note: The project will seek opportunities to process and recycle demolition concrete waste on site as recycled aggregate or engineered fill. Where on-site recycling is not feasible, demolition arisings will be diverted to approved recycling facilities and equivalent recycled aggregate products sourced through the supply chain. The difference in specification is shown in Fig 2.

Building services contain valuable materials including steel, aluminium and copper that can be recovered and recycled following decommissioning. Similarly, internal fit-out elements such as steel partitions, plasterboard and insulation products can be segregated and diverted to appropriate recycling streams during refurbishment or demolition works.

Recycled content assumptions, material recovery rates and end-of-life scenarios will be reviewed and refined as the design develops, and additional information becomes available through procurement, detailed design and future Circular Economy reporting.

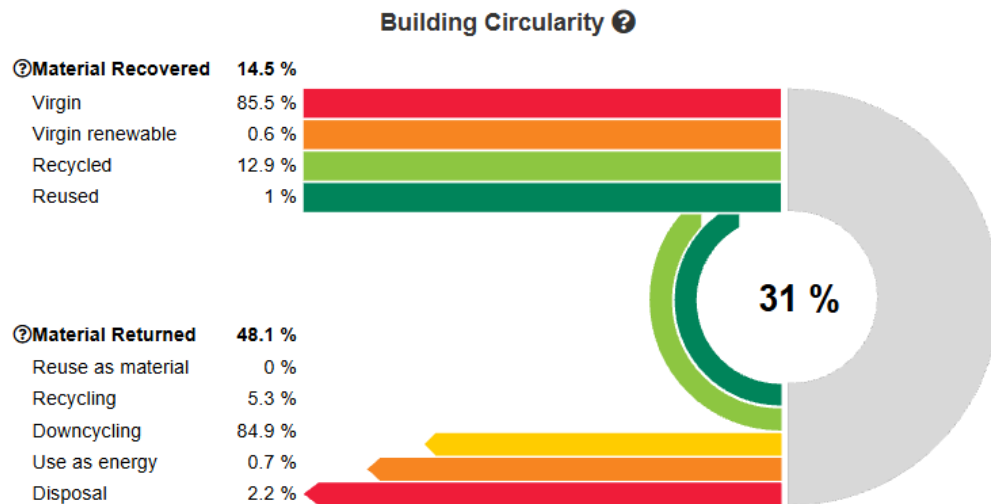


Fig 3: One Click LCA Building Circularity assessment

The One Click LCA Building Circularity assessment reports a **Material Recovered indicator of 14.5%**, comprising recycled, reused and virgin renewable material inputs.

At end of life, the model reports a **Material Returned score of 48.1%**, with the majority associated with downcycling. The resulting Building Circularity score is 31%.

Note: These metrics are separate from the project's recycled/reused content calculation reported in the GLA Circular Economy Statement.

5.0 BILL OF MATERIALS

The Bill of Materials (BOM) for the proposed development has been derived from the material quantity inputs compiled within the project's One Click LCA (OCLCA) model.

Building element	Material mass (kg)	Construction waste (kg)	Recycled content (kg)
Substructure	2,219,238	100,556	421,745
Superstructure – Frame	3,017,391	90,522	783,657
Superstructure – Upper Floors	3,011,050	90,332	684,429
Superstructure – Roof	615,308	0	153,067
Superstructure – Stairs & Ramps	277,450	0	61,410
Superstructure – External Walls	2,257,621	0	14,962
Windows & External Doors	31,971	0	9,914
Internal Walls & Partitions	205,626	0	1,013
Internal Doors	72,857	0	0
Finishes	233,937	0	6,107
Services (MEP)	182,658	0	0
External Works	3,452,172	0	0
Total – Proposed Development	15,577,279	281,409	2,136,303

Table 6: Bill of Materials by Building Element – Material Mass, Construction Waste and Recycled Content

The detailed GLA CES template includes recycled content associated with both existing demolition materials and the proposed development. The table above reports the proposed development only.

For the detailed breakdown of BOM, refer to Appendix 9.1 Table 13, extracted from CES Template.

	BUILDING ELEMENT CATEGORY	PRODUCT AND CONSTRUCTION STAGE (MODULE A)	END OF LIFE STAGE (MODULE C)					MODULE (D)
	Building Element Category	Material Type	DfD	Assumed EOL	% Reusing	% Recycling	% Landfill	Recyclable materials (kg)
0.2	Major Demolition Works	-	-	-	0%	90%	10%	9,203,596
0.2	Major Demolition Works	Concrete rubble	No	Crushed to aggregate	0%	90%	10%	8,348,202
		Brick masonry	No	Crushed to aggregate	0%	63%	37%	192,893
		Steel work	No	Steel recycling	0%	97%	3%	662,500
1	Substructure	-	-	-	0%	88%	12%	1,948,562
1	Substructure	Concrete mix C32/40 with 25% GGBS	No	Crushed to aggregate	0%	90%	10%	1,658,768
		Reinforcement steel - recycled	No	Steel recycling	0%	97%	3%	60,444
		Cement mix C12/15	No	Crushed to aggregate	0%	75%	25%	166,748
		Polyurethane foam insulation	No	Landfill for inert mat	0%	0%	100%	0
		Weber smoothing screed	No	Crushed to aggregate	0%	90%	10%	62,332
		Polyethylene vapour barrier membrane	No	Landfill/ energy recovery	0%	95%	5%	271
2.1	Superstructure: Frame	-	-	-	0%	91%	9%	2,734,530
2.1	Superstructure: Frame	Concrete mix C32/40 with 25% GGBS	No	Crushed to aggregate	0%	90%	10%	2,472,937
		Reinforcement steel - recycled	No	Steel recycling	0%	97%	3%	261,593
2.2	Superstructure: Upper Floors	-	-	-	0%	90%	10%	2,720,026
2.2	Superstructure: Upper Floors	Concrete mix C32/40 with 25% GGBS	No	Crushed to aggregate	0%	90%	10%	2,580,334
		Reinforcement steel - recycled	No	Steel recycling	0%	97%	3%	139,692
2.3	Superstructure: Roof	-	-	-	0%	83%	17%	536,099
2.3	Superstructure: Roof	Concrete mix C32/40 with 25% GGBS	No	Crushed to aggregate	0%	90%	10%	502,478
		Reinforcement steel - recycled	No	Steel recycling	0%	97%	3%	27,203
		Stone wool insulation	No	Landfill for inert mat	0%	10%	90%	4,362
		Polyethylene vapour barrier membrane	No	Landfill/ energy recovery	0%	0%	100%	0
		Bitumen-polymer membrane roofing	No	Landfill/ energy recovery	0%	15%	85%	2,056
2.4	Superstructure: Stairs	-	-	-	0%	90%	10%	250,485
2.4	Superstructure: Stairs	Concrete mix C32/40 with 25% GGBS	No	Crushed to aggregate	0%	90%	10%	239,673
		Reinforcement steel - recycled	No	Steel recycling	0%	97%	3%	10,813
2.5	Superstructure: External Walls	-	-	-	0%	79%	21%	2,907,937
2.5	Superstructure: External Walls	Red bricks	No	Crushed to aggregate	0%	80%	20%	1,194,411
		Brick-faced precast cladding panel	Yes	Crushed to aggregate	0%	80%	20%	668,450
		Cement mortar	No	Mortar use in backfill	0%	100%	0%	641,169
		Exterior Render	No	Mortar use in backfill	0%	100%	0%	368,702
		Stone wool insulation	No	Landfill for inert mat	0%	10%	90%	35,205
2.6	Superstructure: Windows and	-	-	-	0%	90%	10%	57,548
2.6	Superstructure: Windows and External Doors	Float glass - double glazed	No	Glass recycling	0%	90%	10%	45,972
		Extruded aluminium profiles for doors &	No	Aluminium recycling	0%	90%	10%	9,653
		Steel door	No	Metal recycling	0%	90%	10%	1,922
2.7	Superstructure: Internal Walls	-	-	-	0%	90%	10%	203,494
2.7	Superstructure: Internal Walls and Partitions	Concrete blocks	No	Crushed to aggregate	0%	90%	10%	177,206
		Plaster mortar	No	Mortar use in backfill	0%	100%	0%	1,978
		Galvanised steel stud partitions	No	Steel recycling	0%	90%	10%	24,311
2.8	Superstructure: Internal Doors	Timber doors,	No	Wood incineration	0%	20%	80%	29,143
3	Finishes	-	-	-	0%	30%	70%	164,889
3	Finishes	Gypsum plasterboard	No	Gypsum recycling	0%	90%	10%	164,889
		Ceramic glazed tiles	No	Backfilling for inert mat	0%	0%	100%	0
		Tile adhesive	No	Landfilling for conc	0%	0%	100%	0
		Vinyl flooring tile	No	Landfill for inert mat	0%	0%	100%	0
		Waterborne silica paint	No	Landfill for inert mat	0%	0%	100%	0
5	Services (MEP)	HVAC, lights, PV, etc.	Yes	Metal product recycling	0%	80%	20%	438,379
8	External works	Roads, pavers, landscape	No	Landfilling for inert mat	0%	20%	80%	1,380,869
	Overall				0%	72%	28%	22,575,557

Table 7: End-of-Life Material Recovery Scenarios – Modules C and D

6.0 RECYCLING AND WASTE REPORTING

6.1 Demolition Waste

Demolition waste arising will be monitored and reported through the Resource Management Plan (RMP) and Site Waste Management Plan (SWMP). Waste streams identified through the pre-demolition audit will be tracked throughout demolition works, with waste transfer documentation retained to verify reuse, recycling and recovery routes. The project will target a minimum 95% diversion of demolition waste from landfill in accordance with London Plan Policy SI7.

6.2 Excavation Waste

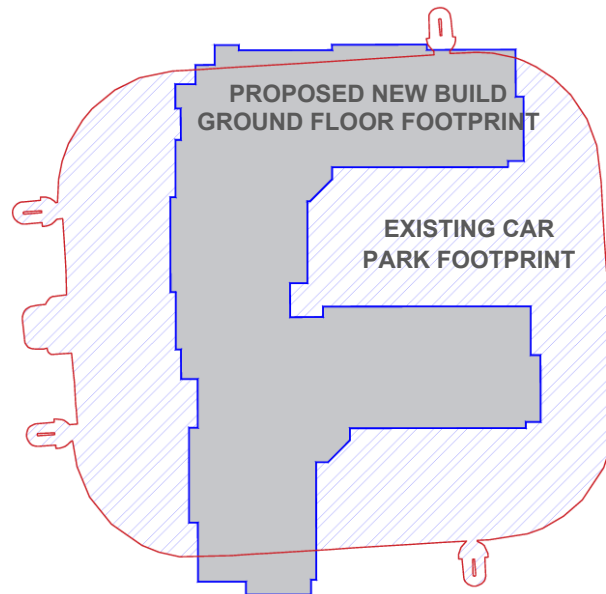


Fig 4: Overlap of existing carpark footprint (red) vs proposed development footprint (blue)

The proposed development includes a basement with a footprint of approximately 691.81 m². The architectural section indicates an excavation depth of 4.725 m from existing ground level to the underside of the basement slab. The estimated basement excavation volume is therefore:

$$691.81 \text{ m}^2 \times 4.725 \text{ m} = 3,268.8 \text{ m}^3.$$

The remaining ground-floor footprint of approximately 1,345.64 m² comprises a suspended reinforced-concrete slab supported on piled foundations. Accordingly, no blanket excavation depth has been assumed across this area. Localised excavation associated with pile caps, ground beams and below-ground drainage/services will be confirmed during detailed design.

Existing car-park foundations and other structural elements are treated separately as demolition arisings and are not included within the excavation quantity.

For the purposes of the planning-stage GLA reporting, a provisional bulk density of 1.8 tonnes/m³ is used to convert the excavation volume to approximately **5,883.8 tonnes**. This density assumption should be reviewed against the project's ground investigation and earthworks information when available.

Excavation management route	Proportion	Estimated volume	Estimated mass*
Beneficial reuse on site	50%	1,634.4 m ³	2,941.9 t
Beneficial reuse off site	45%	1,471.0 m ³	2,647.7 t
Residual / no beneficial use	5%	163.4 m ³	294.2 t
Total excavation material arising	100%	3,268.8 m ³	5,883.8 t

Table 8. Provisional Stage 2 excavation material management scenario. *Masses based on an assumed bulk density of 1.8 t/m³.

The 50% on-site reuse assumption is a provisional planning-stage scenario rather than a confirmed earthworks balance. The detailed earthworks strategy should seek to maximise on-site reuse for suitable backfilling, site formation, grading, landscaping and engineered fill. Surplus uncontaminated material should then be directed to beneficial off-site reuse or recovery. The project will target at least 95% beneficial use overall.

Note: An Excavated Materials Options Assessment (EMOA) and cut-and-fill calculation should be prepared as the design develops. Ground investigation information should also be used to identify material quality, contamination status and suitability for the proposed reuse applications.

6.3 Construction Waste

Construction waste will be managed through the contractor's Resource Management Plan / Construction Resource Management Plan. The approach will focus on accurate procurement, material protection, coordinated setting-out, controlled storage, waste segregation and documented recovery routes.

The project records approximately **281.4 tonnes of Module A construction waste**. This is a planning-stage estimate and will be updated using contractor information and actual waste data as the project progresses.

- Maintain procurement and material schedules aligned with the BoM.
- Use just-in-time delivery and appropriate storage to minimise damage.
- Segregate key waste streams at source wherever practicable.
- Maximise reuse of clean off-cuts and packaging return schemes where available.
- Maintain waste transfer documentation and recovery records.

The project will target at least 95% reuse, recycling or recovery of non-hazardous construction waste by weight.

6.4 Municipal Waste

The proposed development will provide dedicated waste storage at basement level, with separate provision for general/residual waste, dry mixed recycling and food waste. The refuse store will accommodate five 1,110-litre general waste bins, four 1,100-litre dry mixed recycling bins and eight

240-litre food waste bins, providing a total municipal waste storage capacity of approximately **11,870 litres**. (See Table -)

For the purpose of the Stage 2 assessment, **weekly collection** has been assumed for each municipal waste stream. Based on the available storage capacity being utilised at each collection, the estimated annual waste arisings are approximately **617,240 litres/year**.

A separate provision of three 1,100-litre bins is provided for clinical waste, which will be managed through a dedicated healthcare waste collection arrangement and is excluded from the municipal waste calculation.

The waste strategy will be reviewed with the appointed waste contractor and relevant waste collection authority as the design and operational arrangements develop. Actual waste arisings, collection frequencies and recycling performance will be monitored during operation.

Waste stream	Proposed collection	Why
General / residual waste	Weekly	Hygiene, odour and storage requirements; 24-hour care environment
Dry mixed recycling	Weekly	Four 1,100 L bins give substantial storage capacity
Food waste	Weekly	High-density organic waste and hygiene/odour considerations
Clinical waste	Separate specialist collection	Not part of the municipal waste calculation; frequency should be agreed with the clinical-waste contractor

Table 9: GLA recommended waste collection frequencies

Refuse Volume Calculations – assuming weekly collections

Waste stream	Bins	Capacity per bin (litres)	Total capacity (litres)	Annual Volume (litres)	Bulk density	Estimated annual waste (kg/annum)
General/residual	5	1,110	5,550	288,600	0.12 kg/L	34,632
Dry mixed recycling – weekly	4	1,100	4,400	228,800	0.08 kg/L	18,304
Food waste	8	240	1,920	99,840	0.5 kg/L	49,920
Total municipal (weekly collection)			11,870	617,240		102.86

Table 10: Total volume of municipal waste conversion to waste

Management route	tonnes/annum (Weekly)	% by weight
Dry mixed recycling	18.30	17.8%
Food waste / composting	49.92	48.5%
Reused/recycled/composted - weekly	68.22	66.3%
Total Waste	102.86	
GLA Minimum Municipal Waste Target		65%

Table 11: Municipal Waste Management Routes and Recycling Rate in comparison with GLA target

Total Municipal waste = 102.86 tonnes/annum

Current Demonstrated Recycling Rate = 66.3%

Target Recycling Rate = Minimum 65% by 2030 (London Plan S17)

In the event dry/mixed recycling is collected every fortnight instead of weekly, the recycling target would be 63% which is below the minimum recycling target rate at 65%.

7.0 TARGETS

The following targets form the planning-stage circular economy commitments for the development. Some targets are quantified from the current BoM and waste-storage assessment, while others remain management commitments to be verified through construction and operation.

CE targets for existing and new development	Policy Requirement	Waste arisings (tonnes)	Target Aiming For (%)	Policy Met?	Explanation (How performance will be secured)
Demolition waste materials (non-hazardous)	Minimum of 95% diverted from landfill for reuse, recycling or recovery.	9977	95%	Yes	Pre-demolition audit identifies reuse and recycling opportunities. Materials will be segregated during demolition and actual quantities and management routes recorded.
Excavation waste materials	Minimum of 95% diverted from landfill for beneficial reuse.	5883	95%	Yes	Earthworks strategy will prioritise on-site reuse, with surplus material directed to beneficial off-site reuse where practicable. Quantities and destinations will be monitored during construction.
Construction waste materials	Minimum of 95% diverted from landfill for reuse, recycling or recovery.	281	95%	Yes	Repeatable construction methods and material-efficient design will minimise waste. A contractor Resource Management Plan will set out segregation, recovery and monitoring requirements.
Municipal waste	Minimum 65% recycling rate by 2030.	102	66.3%	Exceeds Policy	Based on the current Stage 2 assessment and assumed weekly collection of dry mixed recycling. Collection arrangements will be confirmed and reviewed during detailed design.
Recycled content	Minimum 20% of the building material elements to be comprised of recycled or reused content.		21%	Exceeds Policy	Current assessment identifies approximately 21% recycled/reused content by value. Recycled-content specifications will be confirmed through detailed design and procurement.

Table 12: GLA CES Template with arising waste in tonnes, targets aiming for and design measures taken for measuring performance

8.0 CONCLUSION

This Circular Economy Statement demonstrates how circular economy principles have been incorporated into the proposed redevelopment of Cricket Field Road, Uxbridge, from demolition and material recovery through to construction, operation and future refurbishment. The strategy prioritises retention of material value, reuse where practicable, high-value recycling and beneficial recovery, with disposal considered as a last resort.

The existing car park has been assessed through a pre-demolition material assessment, identifying approximately 9,977.83 tonnes of material arisings. Opportunities for direct reuse of suitable brickwork, paving and metal components will be investigated prior to demolition, while reinforced concrete and steel will be prioritised for recycling.

For the proposed development, the Stage 2 assessment incorporates material-efficient design, low-carbon and recycled-content materials, provision for future maintenance and replacement, selective disassembly of shorter-life components, and separate operational waste storage.

The project will adopt a minimum 95% reuse, recycling or recovery target for non-hazardous construction and demolition waste and a minimum 95% beneficial-use target for excavation material. The current Stage 2 assessment indicates approximately 66.3% recycling and composting of municipal waste under the assumed weekly collection scenario and approximately 21% recycled/reused content by value.

These outcomes remain subject to refinement as detailed design, earthworks, material specifications, procurement and operational arrangements develop. The measures and monitoring procedures set out within this statement provide a framework for maintaining and improving circular economy performance through the subsequent design and construction stages.

9.0 APPENDIX

9.1 GLA Circular Economy Template - BOM

	BUILDING ELEMENT CATEGORY	PRODUCT AND CONSTRUCTION STAGE (MODULE A)					
	Building Element Category	Material Type	Material qty (Module A) (kg)	Construction Waste Factor (Module A)	Const Waste (Module A) (kg)	Recycled Content by mass (kg)	Recycled Content by value (%)
0.2	Major Demolition Works	-	9,977,830	-	0	-	-
0.2	Major Demolition Works	Concrete rubble	9,275,780	0%	0	8,811,991	95%
		Brick masonry	306,180	0%	0	244,944	80%
		Steel work	395,870	0%	0	383,994	97%
1	Substructure	-	2,219,238	-	100,556	-	-
1	Substructure	Concrete mix C32/40 with 25% GGBS	1,843,076	5%	92,154	350,184	19%
		Reinforcement steel - recycled	62,313	3%	1,869	60,444	97%
		Cement mix C12/15	222,330	2%	4,447	11,117	5%
		Polyurethane foam insulation	21,976	-	0	0	0%
		Weber smoothing screed	69,258	3%	2,078	0	0%
		Polyethylene vapour barrier membrane	285	3%	9	0	0%
2.1	Superstructure: Frame	-	3,017,391	-	90,522	-	-
2.1	Superstructure: Frame	Concrete mix C32/40 with 25% GGBS	2,747,708	3%	82,431	522,065	19%
		Reinforcement steel - recycled	269,683	3%	8,090	261,593	97%
2.2	Superstructure: Upper Floors	-	3,011,050	-	90,332	-	-
2.2	Superstructure: Upper Floors	Concrete mix C32/40 with 25% GGBS	2,867,038	3%	86,011	544,737	19%
		Reinforcement steel - recycled	144,012	3%	4,320	139,692	97%
2.3	Superstructure: Roof	-	615,308	-	0	-	-
2.3	Superstructure: Roof	Concrete mix C32/40 with 25% GGBS	558,309	0%	0	106,079	19%
		Reinforcement steel - recycled	28,044	0%	0	27,203	97%
		Stone wool insulation	21,812	0%	0	16,359	75%
		Polyethylene vapour barrier membrane	290	0%	0	0	0%
		Bitumen-polymer membrane roofing	6,853	0%	0	3,427	50%
2.4	Superstructure: Stairs and	-	277,450	-	0	-	-
2.4	Superstructure: Stairs and Ramps	Concrete mix C32/40 with 25% GGBS	266,303	0%	0	50,598	19%
		Reinforcement steel - recycled	11,147	0%	0	10,813	97%
2.5	Superstructure: External Walls	-	2,257,621	-	0	-	-
2.5	Superstructure: External Walls	Red bricks	1,493,014	0%	0	0	0%
		Brick-faced precast cladding panel	278,521	0%	0	0	0%
		Cement mortar	213,723	0%	0	0	0%
		Exterior Render	184,351	0%	0	0	0%
		Stone wool insulation	88,012	0%	0	14,962	17%
2.6	Superstructure: Windows and	-	31,971	-	0	-	-
2.6	Superstructure: Windows and External Doors	Float glass - double glazed	25,540	0%	0	7,662	30%
		Extruded aluminium profiles for doors & v	5,363	0%	0	2,145	40%
		Steel door	1,068	0%	0	107	10%
2.7	Superstructure: Internal Walls	-	205,626	-	0	-	-
2.7	Superstructure: Internal Walls and Partitions	Concrete blocks	196,895	0%	0	0	0%
		Plaster mortar	1,978	0%	0	0	0%
		Galvanised steel stud partitions	6,753	0%	0	1,013	15%
2.8	Superstructure: Internal Doors	-	72,857	-	0	-	-
2.8	Superstructure: Internal Doors	Timber doors	72,857	0%	0	0	0%
3	Finishes	-	233,937	-	0	-	-
3	Finishes	Gypsum plasterboard	61,070	0%	0	6,107	10%
		Ceramic glazed tiles	128,141	0%	0	0	0%
		Tile adhesive	32,035	0%	0	0	0%
		Vinyl flooring tile	7,445	0%	0	0	0%
		Waterborne silica paint	5,246	0%	0	0	0%
4	Fittings, furnishings &	-	0	-	0	-	-
5	Services (MEP)	-	182,658	-	0	-	-
5	Services (MEP)	HVAC, lights, PV, etc.	182,658	0%	0	0	0%
8	External works	-	3,452,172	-	0	-	-
8	External works	Roads, pavers, landscape	3,452,172	0%	0	0	0%
	Overall		25,555,109		281,409		

Table 13: Detailed Module A – total BOM, construction waste and recycled content

9.2 GLA Circular Economy – Recycled and Waste Reporting Template

Type of Waste		TOTAL ESTIMATES OF WASTE			WASTE MANAGEMENT ROUTES						SUMMARY				
					REUSE		RECYCLE		OTHER DISPOSAL						
		Overall Waste (tonnes)	Overall Waste (tonnes/m² GIA)	KPI	Reuse Onsite (%)	Reuse Offsite (%)	Recycle Onsite (%)	Recycle Offsite (%)	To Landfill (%)	To Other Management (%)	Total Reuse (%)	Total Recycle (%)	Total Reuse and Recycle (%)	Total Waste Reported (%)	
		PRODUCT AND CONSTRUCTION STAGE (MODULE A)													
1	Demolition Waste	9977	1.152	1	0%	0%	15%	80%	5%		0%	95%	95%	100%	
2	Excavation Waste	5883	0.679	1	50%	45%	0%	0%	5%		95%	0%	95%	100%	
3	Construction Waste	281	0.033	0	0%	0%	5%	90%	5%		0%	95%	95%	100%	
		USE STAGE (MODULE B)													
3	Demolition / Strip-out Waste	5,717	0.660	-							0%	0%	0%	0%	
4	Construction Waste	0	0.000	-							0%	0%	0%	0%	
		Overall Waste (tonnes/annum)	Overall Waste (tonnes/annum)	Performance Indicator (LPG Appendix 1)	Reuse Onsite (%)	Reuse Offsite (%)	Recycle Onsite (%)	Recycle Offsite (%)	To Landfill (%)	To Other Management (%)	Total Reuse (%)	Total Recycle (%)	Total Reuse and Recycle	Total Waste Reported (%)	
5	Municipal Waste	102.86	0.012	0.011880342				66%	34%		0%	66%	66%	100%	
6	Industrial Waste (if applicable)		-	-							0%	0%	0%	0%	
		MODULE A - MODULE C													
		Overall Materials (tonnes)	Overall Materials (Modules A-C)	-	Reuse Onsite (%)	Reuse Offsite (%)	Recycle Onsite (%)	Recycle Offsite (%)	To Landfill (%)	To Other Management (%)	Total Reuse (%)	Total Recycle (%)	Total Reuse and Recycle (%)	Total Waste Reported (%)	
7	Total Materials	31,841	3.678	-				72%	28%		0%	72%	72%	100%	

Table 14: GLA Recycling and Waste reporting template for Modules A, B & C

9.3 OneClick LCA Building Circularity Results for Materials Recovered and Returned

Section	Result category	Total kg	Virgin kg	Virgin renewable kg	Recycled kg	Reused kg
A1-A3	Construction Materials	12,739,866.28	9,916,546.59	64,005.15	2,562,391.65	196,922.88
A1-A3	Earth masses, asphalt and stones	2,970,385.06	2,970,339.35	0	45.71	0
A5	Construction site - material wastage	905,162.54	763,225.22	1,467.93	128,654.02	11,815.37
B4-B5	Material replacement	4,969,650.94	4,808,880	68,344.63	92,426.3	0
Materials Used	Total	21,585,064.82	18,458,991.16	133,817.71	2,783,517.69	208,738.25

Table 15: OCLCA Results for materials recovered

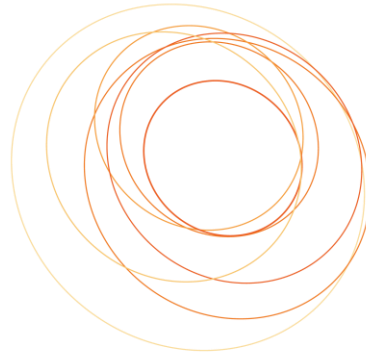
Result category	Reuse as material kg	Recycling kg	Downcycling kg	Use as energy kg	Disposal kg
Construction Materials		760,493.03	11,655,555.96	80,741.54	237,252.24
Earth masses, asphalt and stones			2,251,200		9,142.4
Construction site - material wastage		30,569.01	794,112.4	2,628.07	12,850.69
Material replacement and refurbishment		358,318	3,617,584.84	58,576.48	225,128.95
Total		1,149,380.03	18,318,453.21	141,946.09	484,374.28

Table 16: OCLCA Results for materials returned

Materials	Total kg	Virgin%	Materials Recovered %	Disposal%	Downcycling and use as energy %	Recycling and reuse as material%	Materials Returned%	Circularity%
Concrete	9,429,094.55	79.03	20.97	0.3	99.7		49.85	35.41
Metals	556,749.83	7.79	92.21	0		100	100	96.11
Bricks and ceramics	1,621,156	87.85	12.15	0	100		50	31.07
Gypsum-based	696,421.02	99.24	0.76	3.51	90.94	5.09	50.56	25.66
Insulation	131,801.22	57.3	42.7	83.33	14.68		7.34	25.02
Glass	25,540	70	30	0		100	100	65
Wood	2,536.8	1	99	0	100		50	74.5
Earth masses and asphalt	2,970,385.06	100	0	0.31	75.79		37.89	18.95
Other materials	276,566.85	76.81	23.19	27.1	21.28	51.62	62.26	42.73

Table 17: Building Circularity – Key Material groups

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