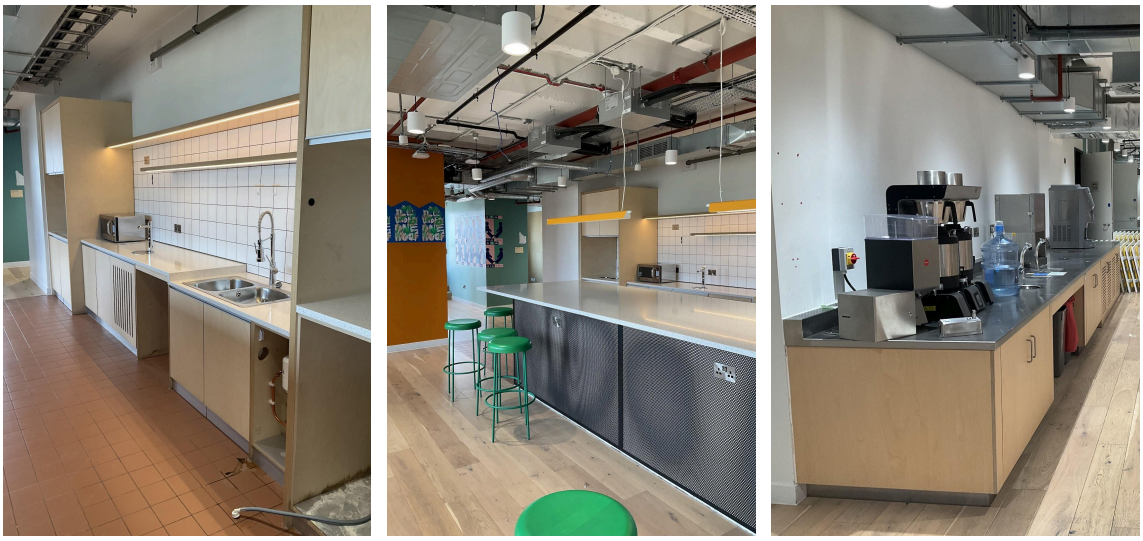
Reuse Off-site: Joinery & Kitchenettes/Bars



Kitchenettes throughout 125 Shaftesbury Avenue

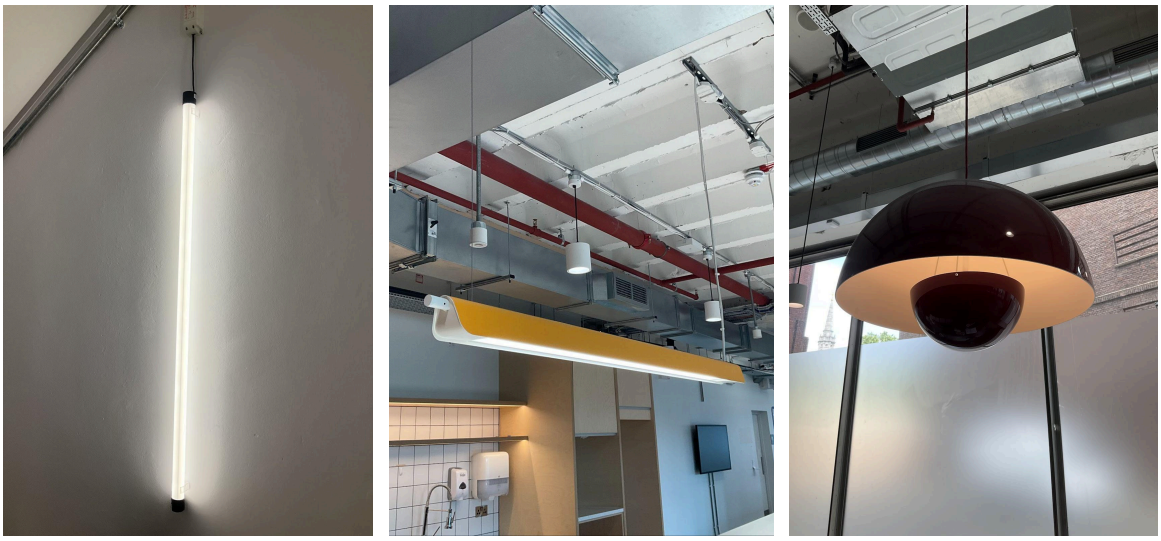
Description: There are a number of kitchenette units, breakfast bars, shelving units installed on-site, some with high quality finishes. In most cases they have been well maintained meaning the quality of the items can be regarded as very good. In some instances, dimensions are tailored to fit the respective spaces.

Comments: Material Index can explore resale opportunities for these items via their reseller and charity networks.

Removal of built in units in a manner that allows for reuse is difficult, but can be achieved. If care is taken to dismantle these units for reuse offsite, each set should be marked or labelled with information related to the corresponding modules. Fixtures and fittings should be stored with the corresponding units.

Appliances can be offered to the secondary resale market and can typically be found reuse pathways easily. Material Index has an approved trade partner for the resale of white goods. They can be contacted if required.

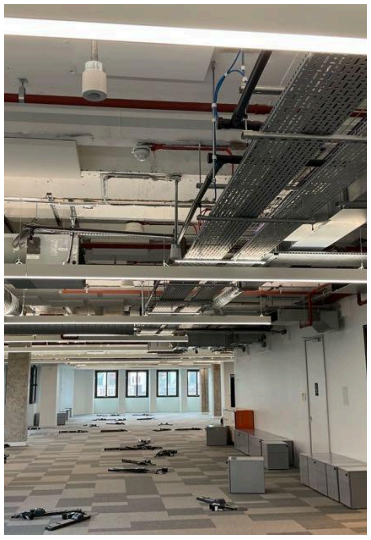
Reuse Off-site: Lighting (Specialty)



Various lighting types across 125 Shaftesbury Avenue.

Description:	Some specialty lighting types were recorded as part of the audit, including pendant shades and high-quality office lighting. Opportunities for exploring off-site reuse should be maximised.
Comments:	Recolight, a hub for recycling and reusing lighting offers options for remanufacture of lighting to move towards a circular economy. See: https://www.recolight.co.uk/reuse-hub/about-the-resue-hub/ Lights should be labelled, dismantled, and stored on-site until confirmation of their non-requirement or resale. If lighting is to be donated to a reuse hub, the product should be in storage prior to donation. Lighting retention will require an architectural review and coordination with electrical consultants to ensure lighting is up to current specification and safety standards.

Reuse off-site: MEP and Plant Equipment

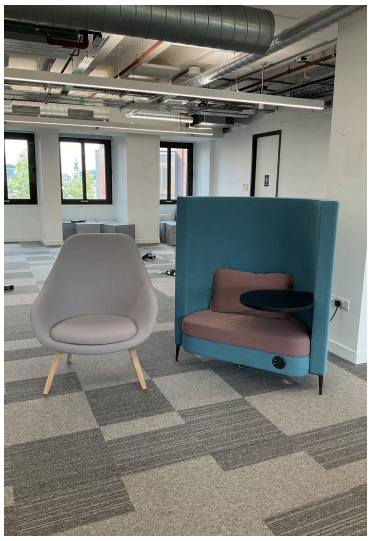




Various MEP plant equipment

Description:	New Mechanical and electrical systems will be designed and installed for the new scheme.
Comments:	An MEP consultant engaged by Material Index visit the site to assess the current systems. It was suggested that ductwork, cable trays, and some fan core units and the respective refrigerant may be valuable for reuse. While information on the MEP strategy has been provided and an overview of the systems has been made, accurate status of the heating system remains unknown until the completion of an MEP condition survey. Upon completion, Material Index can provide recommendations, including potential involvement in manufacturer take-back schemes.

Reuse off-site: Furniture (sample included in audit)



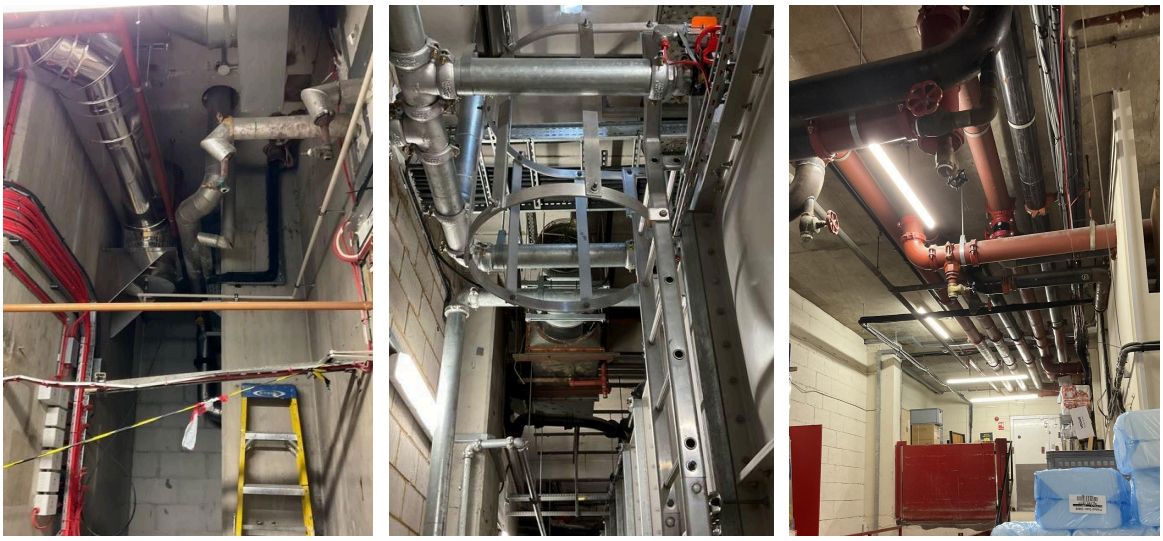


Description: In this audit, furniture has not been captured across all levels, however, as a sample was captured to present the quality of items remaining in the space. The furniture in this space was high spec and in good condition and presents an easy opportunity to achieve reuse off-site within this project if left behind by the tenant.

Comments: These items are likely the property of the leaseholder, however, at the date of the site visit it appeared the leaseholder had vacated. As there is a market for these high quality goods, the client is welcome to share this survey with leaseholders. Failing this, Material Index has confirmation that these items can be reused off-site through reseller and donation pathways. Material Index has established partners for these items.

4.4. Waste Stream / Recycling

Waste/Recycling: MEP and Plant Equipment (end of life or not suitable for reuse)



Various MEP plant equipment

Description:	The existing services which cannot be retained or reused should be directed to the recycling stream.
Comments:	Materials should be segregated and disposed of or recycled in the appropriate stream.

5. Conclusions

5.1. Current End-of-Life Designations by Material

125 Shaftesbury Avenue is a high-quality building that has been fit-out with generally good-quality and spec fixtures, fittings, finishes and equipment across all the tenancies and landlord areas.

The benchmark retain and reuse rate of **90%** (total weight of retain, reuse on-site and reuse off-site) currently designated with the results of this audit is considered 'very good', and the project should focus on seeing this through during the construction works.

To promote the highest rate of reuse, Material Index can assist in brokerage of any secondary components and materials, including tenant owned items.

Designated Pathway - by Material

MATERIAL	RETAIN	REUSE-ONSITE	REUSE-OFFSITE	RECYCLE-ONSITE	WASTE	GRAND TOTAL	RETAIN %	REUSE-ONSITE %	REUSE-OFFSITE %	RECYCLE-ONSITE %	WASTE %
Concrete 8	18,254,157.67	0	0	0	981,011.72	19,235,169.39	95 %	0	0	0	5 %
Brick 2	0	0	2,909,443	0	14,887.53	2,924,330.53	0	0	99 %	0	1 %
Metal 83	224,017.5	321,008	565,734.5	0	1,376,737.5	2,487,497.5	9 %	13 %	23 %	0	55 %
Ceramic 32	0	75.84	4,335	0	117,025	121,435.84	0	0 %	4 %	0	96 %
Gypsum 7	0	0	36,083.64	0	35,699.89	71,783.53	0	0	50 %	0	50 %
Timber 72	0	0	37,925.08	0	4,316	42,241.08	0	0	90 %	0	10 %
Glass 28	0	0	35,643	0	205	35,848	0	0	99 %	0	1 %
Electronics 89	0	0	23,930.78	0	3,452	27,382.78	0	0	87 %	0	13 %
Carpet 28	0	20,407.46	0	0	1,020	21,427.46	0	95 %	0	0	5 %
Stone 3	0	0	5,483.33	0	0	5,483.33	0	0	100 %	0	0
Plastic 27	0	0	1,240.67	0	1,938.79	3,179.46	0	0	39 %	0	61 %
Fabric 3	0	0	916	0	0	916	0	0	100 %	0	0

Table 1: *Designated Pathway - by Material*

Embodied Carbon - by Material

MATERIAL		EMBODIED CARBON FACTOR	TOTAL WEIGHT	EMBODIED CARBON (KGCO2E)	RETAIN %	REUSE-ONSITE %	REUSE-OFFSITE %	RECYCLE-ONSITE %	WASTE %
Metal	83	341.13	2,487,497.5	10,223,614.73	920711.925	13 %	23 %	0	55 %
Concrete	8	0.96	19,235,169.39	2,315,914.39	2197800.583468	0	0	0	5 %
Brick	2	0.42	2,924,330.53	607,968.32	0	0	99 %	0	1 %
Ceramic	32	36.48	121,435.84	138,436.86	0	0 %	4 %	0	96 %
Electronics	89	294.59	27,382.78	90,636.99	0	0	87 %	0	13 %
Carpet	28	82.96	21,427.46	63,489.58	0	95 %	0	0	5 %
Glass	28	40.24	35,848	51,513.58	0	0	99 %	0	1 %
Timber	72	35.48	42,241.08	20,816.41	0	0	90 %	0	10 %
Plastic	27	89.37	3,179.46	10,524.01	0	0	39 %	0	61 %
Gypsum	7	0.91	71,783.53	9,331.86	0	0	50 %	0	50 %
Fabric	3	20.34	916	6,210.48	0	0	100 %	0	0
Stone	3	0.24	5,483.33	433.18	0	0	100 %	0	0

Table 2 : *Embodied Carbon - by Material*

5.2. Recycling/Reuse targets

The estimated percentage (by weight) of materials leaving for the recycling/waste stream is currently **10%**, with **15%** designated for reuse off-site, <**1%** to be reused on site and **74%** to be retained in-situ.

The total volume of waste arising (recycle off-site/waste stream) is estimated to be approximately **2,533 tonnes** (pending review). A few factors may have a considerable impact on these figures; both whether reuse and retained pathways can be secured for many items.

In the appendix to this report items that are currently designated for reuse on-site, recycling on-site and reuse off-site have been itemised on a component basis. The status of these items may change following further discussions with the client, the demolition contractor and the manufacturing industry.

5.3. Diversion From Landfill

In order to be 'compliant' with GLA Circular Economy guidance, Detailed Circular Economy Statements must include a Recycling and Waste Reporting Form with clearly defined activities and targets relating to the following London Plan policy targets of 95% reuse/recycling/recovery of construction and demolition waste.

BREEAM New Construction and Refurbishment and Fitout sets the following benchmark diversion from landfill targets:

BREEAM credits	Source of waste	Volume	Tonnage
One credit	Refurbishment/fit-out	85%	90%
	Demolition	90%	95%
Exemplary level	Refurbishment/fit-out	95%	97%
	Demolition	95%	97%

Figure 1: BREEAM Diversion From Landfill Benchmarks, Refurbishment and Fitout

Table 10.2 Diversion from landfill benchmarks

BREEAM credits	Type of waste	Volume	Tonnage
One credit	Non-demolition	70%	80%
	Demolition	80%	90%
	Excavation	N/A	N/A
Exemplary level	Non-demolition	85%	90%
	Demolition	85%	95%
	Excavation	95%	95%

Figure 2: BREEAM Diversion From Landfill Benchmarks, New Construction

Of the **2,533 tonnes** of material designated to recycling/waste stream, the key materials entering the recycling/waste stream are concrete, gypsum, metal, ceramic. There are well established methods for recycling these materials and they rarely end up directly in landfill if managed correctly, therefore it can be estimated that the contractor can realistically aim to divert 95-98% of material designated to the recycling/waste stream from landfill through appropriate recycling and waste sorting.

5.4. Comparison of Actual/Forecast Rates

If requested, Material Index can record how much waste is diverted from waste during the deconstruction operation, and this report can be re-issued As-Deconstructed. In accordance with the BRE Code of Practice Pre-redevelopment Audit (2017) MI seeks to measure actual performance versus estimated. Following project completion Material Index can issue recommendations for improvements to diversion to reuse procedure.

6. Recommendations

6.1. Reuse Off-site - Material Index Brokering

Material Index offers a follow-on service to execute the brokering of materials for items designated for off-site reuse in the asset register to individual businesses looking for these items and can support with testing, storage and logistics.

Well known brokerage networks also include:
Salvoweb
https://www.salvoweb.com/
Salvoweb provides a directory of UK salvage yards

For Metal:
European Metal Recycling
https://uk.emrgroup.com/what-we-do/circular-steel
ukinfo@emrgroup.com

For office furniture and appliances:
Recorra
www.recorra.co.uk

For miscellaneous items:
Yes Make
www.yesmake.co.uk
www.yesmake.co.uk/contact

For lighting:
Revitalite offer existing lighting repurposing for on-site use
www.revitalite.co.uk

Egg lighting offer lighting remanufacturing for off-site reuse
https://egglighting.com/lighting-remanufacture-service/

6.2. Recycling and Waste

If items cannot be reused and during the deconstruction process partition walls are demolished then recommended options for specialist companies include:

Glass	A specialist glass recycler should be contacted to see whether any of the glass is suitable for recycling into new flat glass, or if the glass can be collected for recycling into lower grade applications such as glass bottles. The glass should be separated on site and sent to a licensed waste management contractor for recycling. URM offer a glass collection service for all types of glass. www.urm.co.uk/
Metal	Metal should be segregated on site. Any non ferrous metals (e.g. stainless steel) should be separated from other metals as they have a higher resale value. The metal should be removed by a licensed waste management company for recycling. Horn Lane Metals http://www.hornlanemetals.co.uk/index.html 02089 924609
Carpet	All carpets and carpet tiles should be recycled. Countrystyle Recycling Members of Carpet Recycling UK and collect, recycle and recover all types of mixed carpet. http://www.countrystylerecycling.co.uk 0344 880 7700 Carpet Tile Recycling Provide a nationwide collections service but are based in Nottingham but. Carpet tiles are cleaned, graded and sold for reuse. http://www.carpettilerecycling.co.uk 0115 940 4454

Ceramics	Ceramics from bathrooms and tiles are intended to be removed. They should be separated on site and taken to a specialist waste contractor and crushed and used as Recycled Aggregates (RA). Hintons https://www.hintonswaste.co.uk/waste-management/construction-waste-recycling/ Reston Waste Management http://www.restonwaste.co.uk/
Timber	Powerday provides wood recycling across London. They can create wood chips for remanufacturing into composite boards, or for energy recovery producing a high quality renewable biomass fuel. Contact: info@powerday.co.uk Timber should be segregated on site by timber-based manufactured boards or solid timber, as MDF and other manufactured boards are harder to recycle due to the adhesives. Solid timber unable to be reused can be recycled for chipboard, and the manufactured boards can be sent for energy recovery. Most solid timber can be recycled, usually into chipboard. Following new guidance from the Construction Demolition Waste Forum new guidance has been produced on hazardous wood waste where timber coated with preservatives prior to 2007 in large quantities should be tested.
Furniture	Where the existing furniture has been deemed sufficient quality for commercial resale MI has been in touch with commercial resellers. Within this site there is very little that meets that criteria. However, Material Index can arrange for free furniture pick-up, including priority push notifications with the community recycling apps.
Plasterboard	Recommendations: Waste must be segregated (either onsite or offsite) and either recycled by a licensed waste company or sent to landfill where it must be deposited in a separate cell where no biodegradable waste has been accepted. Further guidance on

	the disposal of plasterboard waste is available from the Environment Agency and CIWM.
Insulation	No insulation items within wall or ceiling or ceiling panels are currently deemed suitable for reuse. The difficulty of extraction plus the limited secondary market for 'non-natural' insulation materials makes it unlikely they could be re-used off-site. A licensed waste management company should be used during demolition to assess if insulation should go to energy recovery or to landfill. The determining factor is often the presence of foam insulation which is typically a hazardous waste and requires high temperature incineration.
Hazardous Materials	Fluorescent tubes and CFL bulbs: These should be separated on site, collected and disposed of by a licensed hazardous waste carrier. Asbestos: If an asbestos survey has not been undertaken it is recommended. All asbestos materials should be managed according to the Control of Asbestos Regulations 2012. Detailed information is available from the Health and Safety Executive (www.hse.gov.uk) about how to manage asbestos including when licensed contractors must be used, training of operatives and how to dispose of the waste material.

6.3. Specific Advice - Reuse and Challenges

Elemental Approach	The elemental approach to breaking the existing structures on the site shows the best approach to ensuring reuse.
Dismantling of Structures for Reuse	Challenges include making sure the careful dismantling of building structures for reuse, which is often technically possible but difficult, does not add additional or insurmountable cost to the project. The recent Alliance for Sustainable Building Products DISRUPT project (Delivering Innovative Steel ReUse ProjecT) has shown that it is possible to reuse steel within projects at cost-neutral or cost benefit. The best way of ensuring this is to engage the demolition contractors on the project early on in the project. Challenges that are often faced in careful deconstruction, such as the storage of components, or access by grab lorries, or on-site storage, are not such in this scenario.

6.4. General Advice for Increasing Retention and Reuse

Longer sales time:	If it is possible to enter a property earlier to conduct a PDA, the longer sales time would allow a greater chance of a buyer being found. In this scenario we have placed many of the components in a single batch so they could be sold quickly prior to the contractor entering the building.
Portfolio index:	Often there are possibilities for reuse within the portfolios of building owners, or within the portfolios of the designated design teams on projects. The advantages of this approach is that it provides traceability and accountability on components, thereby lowering risk. Typically the more of a client's portfolio is indexed the greater the percentage of materials that can be reused. Material Index can advise on storage and certification options.
Deconstruction care:	Material Index are more than willing to consult the client on the findings of this report and consider any options for closed loop reuse in a similar project. If there is a chance materials can be reused but their status is indeterminate, the recommendation is

	to ensure that items are removed and stored in such a way that all components remain together, e.g. windows in their frames.
Information on deconstruction	Decisions on future pathways for materials within a space are always client prerogative.

6.5. Storage and Site Separation

All items designated for retain, reuse on-site or reuse off-site should be protected during works. Separate areas should be established on site during works for this purpose.

Given the nature of the work (not full demolition) it is presumed on site storage **may be possible** where items are designed for on or off-site reuse.

It is recommended that items to be reused off-site are protected during site deconstruction. Items set aside for reuse through resale should be prepared for pick-up: ie. labelled, palletted and on ground floor level.

For other items in the recycling/waste stream the following items should be site separated: timber; ferrous metals (steel); non-ferrous metals (stainless steel, copper); plasterboard; ceramic items and /porcelain tiles. Hazardous waste should be segregated and must be removed by a licensed hazardous waste contractor.

6.6. Deconstruction Tendering and Training

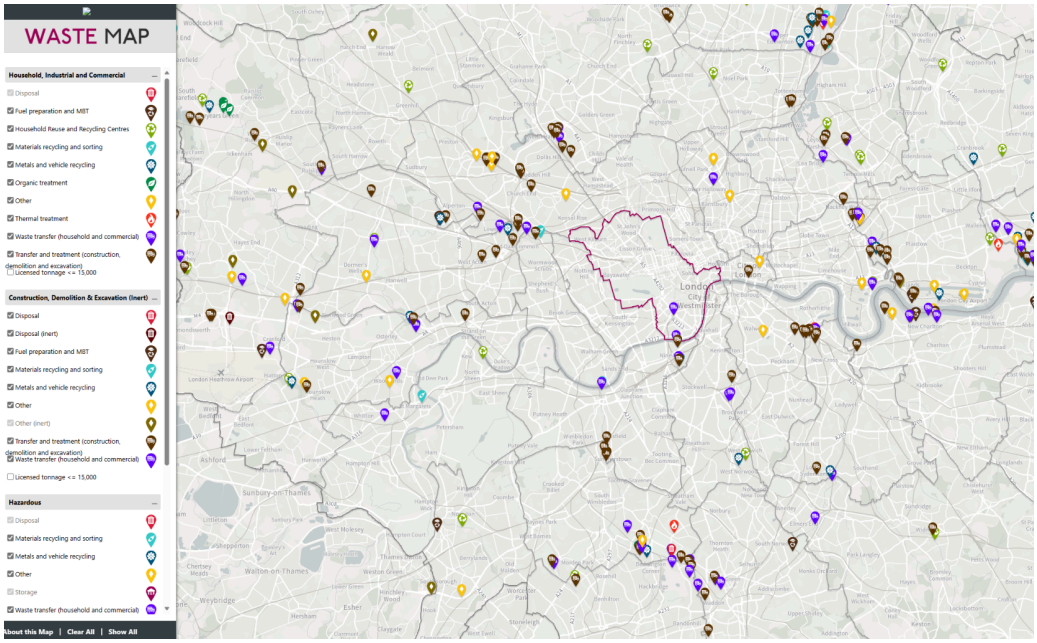
Skips and waste vans should be loaded with one designated waste stream at a time. The deconstruction training on Environmental Issues, or Monitoring and Record Keeping of waste transfer during construction. Induction training carried out to site shall include Environmental issues. Inductions will specifically include a reminder to all staff on the expected levels of recycling and waste control and the standard of segregation required for acceptable disposal. Material Index can also report on any lessons learned in relation to waste management.

6.7. Waste and Recycling Destinations

Transfer
Site Name: Walbrook Wharf
Borough: City of London
Licence Number: 80359
Operator: Cory Environmental Limited

Transfer and treatment (construction, demolition and excavation)
Site Name: Wandsworth Transfer Station
Borough: Wandsworth
Licence Number: 83393
Operator: Suez Recycling and Recovery South East LTD

Waste Transfer (Household and Commercial)
Site Name: Hornsey Street Waste & Recycling Centre
Borough: Islington
Licence Number: 80577
Operator: London Energy Ltd



London Waste Map: waste processing facilities in vicinity of the site.
https://apps.london.gov.uk/waste

End of Report