From Demolition to Deconstruction - ASBP arfield

mark

-

Reuse in Reality: Moving towards a circular economy

13th March 2024

Darcy Arnold-Jones



Who Are We?

- Established 1989
- Over 130 awards for design, innovation and sustainability
 - An entrepreneurial spirit
 - Experts at gaining complex planning consents
 - Maintaining technical edge
 - 50:50 gender ratio from day one
 - Commitment to climate and social justice
 - Focus on retrofit
 - Passive House accredited designers







The Climate Crisis - Our Response

Becoming a Regenerative Practice



Of UK total Carbon Emissions are attributed to built environment (according to the UK Green Building Council)



Of UK waste is generated by the Construction Industry - a massive 120 million tonnes



Of all raw materials mined and harvested annually are consumed by the construction sector



Forum for the Future: Just and Regenerative diagram



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The strategy for retrofit and reuse



Moving from a Linear to a Circular Economy





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What does CIRCULAR mean to us?



Underpinned by a regenerative built environment, with circular infrastructure

marks barfield architects

Donor Building: 22 Baker Street

Client: Lazari Investments Ltd Architect: Marks Barfield Architects Structural Engineer: The Morton Partnership MEP Engineer: GLP Project Manager: Hambury Hird Design Quantity Surveyor: Album Consulting Contractor: Faithdean Demolition Contractor: Lawmans

22 Baker Street Overview



Existing External View of Office Building



Existing Internal View of Atrium



Existing Internal View of Upper Floor Office Space



Project Overview

22 Baker Street Reuse of materials has helped to contribute to low carbon figures



marks barfield eachitects

marks barfield

Methodology

Reuse Methodology







Impact on Design Process



Existing Material Inventory

LE ONTOINES MALLS, FUNDIES AND PARTY COM	Paser	Reigh Ann m3	installation (ABE(2020)	Description	Anysin/Incor/Intols Lagenius	Retained in sits during works or temporarily removed to condition for neuse in the project	Protection Required	Specialiti review required for dismanifing and reinstaliation	Aprivate Bern	Replacement loggedian	Arlenation Engendion	Driginal Category (Cat A or Fujitos Cat II)	Gage to consider	Pasta	Belavanar numbers in candition survey	End of Incompy Plan	<u>Community</u>
Finishes																	
Toniae Pareta	1	28.8	3020	Paneling around first floar atrium edges	Rever in site intentioning including and refurbish	interpretative remained		Yes, andtanan is seeried		Like for like Under slab.	If replaced, offer to C, D, E	CAT B	687.A	TANT			Frank E
Toniae Pareta	1		3020	Pararling in mals of matering masss	Potential sease in balling and relaxate	temperarily remained		Yen, andtaman is nominal			Revier in amenity and shanging russes	CAT B	CA2 8	1.50		÷	Frank E
Tilegia served sail	٠	79	3002	Tinker/virol type pareling to reception trainer will	Revue in Gasin					Ngher quality limber/ hashinable materials	Could relevate to lancement or CAT 8	CAT &	CAT A/B		102280-13-04	¢	Oresh CAT B are nati interested
Serier effect tile.	1		3030	Tanker tiles in kitchers in Pujike R est	Revor in Casis						namit.	CAT B	Cat A/B	10		¢	
Tiles is kinthen.	1		3020	Easts gaard tiles to underside of bilshor counter	Revue in Gasin						antih.	C47 B	Cat A/B			¢	
WC Gased parels	00-6		3002	Proximi giarmi paratis	Distribution Centre				WCs are Ld in user 1.6.2 subject to phasing	respired tiles		CAT &	CHP &	1. J	110 2283 5.4 05	r	Contast Benymona glass.revyvling
Giving Boom Parceling	1		3020	Knailnei faloris wraggerd panels	Potential sever in balleling and relaxate	temporarily removed		Yes, and anan is seeded				CAT 8	CAT II				Frank C, D ar E
Tinke Pareling	4		3020	Aprices toker will and utiling paralling	TRUST			Yes, and seam is seenled	id subject to phasing			CAT 8	CAT &	N.		۰	
Kishewiling	4		3020	Ceramic tiles as splashback in bitchen	1940				1.1 subject to phasing			CAT B	687.A			¢	
Core Risers, autoide of core A.and B	01, 02, 03, 04		30027	Cashied in MDF painted partitions in goal candition generally	Resort in situ in making building and refurktsh	Retain in sita sabigesi ta repair/replacement scope	Ym		Cores 1 and 2 on 14 subject to phasing			687 A	687.A		(10-228) 5.3-65		f rad E
Carer A (Lobbing)	61,62,01, 24		20027	Cadded in MDF painted partitions in good condition generally	Rever in site in mining building and reflationh	Retate in vita sabigest to repair/ replacement scope	Tes.		Cores 1 and 2 on 14 subject to phasing			CAT A	CAT &	S.	100.0000.0.0.00		f and 2
Care B (Lebby)	81,62,05, 04		30027	Classified in 34DF painted partitions in good condition generally	Rever in relating building in silu- and orbatioth	Retate in sits subliquet to repair/ reglacement scope	Tes.		Cores 3 and 2 on 14 subject to phasing			CAT A	687.A	All	10-2281-1-2-01		Frank E
Garing partition to Monting reason	81,62,05, 04		3030	Glassi parets to meeting rearra in goad condition	Distribution Centre					subject to CAT 8		CAT B	CAT 8			ŧ.	lpes of glass?
Januar Glaring	3		30207	Finar is unling glassed partitions, around Ledges of stelam	Patiential muse in GET 8 scheme	temporarily remained				subject to CAT 8		C47 B	CAT.A.	0	102280-1445	÷	f and if
Claring to 18 labby	01, 04		3002	Class partitions around main 18%	Rever in relating building in silu and refurition	Retain in sita sabigni to repair/ reglacement scope	Tes		Li subject to phasing	subject to CAT 8		CAT A	CAP &	No.	10 2385 1 5 05		Frank E
Aprivate meeting name partition	4		3039	presented linker partition	Distribution Center				id subject to phasing	subject to CAT B		CAT II	687.A	a line			
lpriver glassi meeting nam partition	4		3039	Glassed parents to morning reasons in good condition	Distribution Center				id subject to phasing	subject to CAT B		CAT II	687.A	記載		ĸ	
Partition between approver and fighter	4		3020	presented shed partition	Distribution Centre				Li subject to phasing	subject to CAT 8		CAT B	CAP &	1			
Perinsteredend wall finishes inc. skirling	10.04		20027	Caddedin MDF daring in a madern grunnetric design adds metal details, in disregati in many artes	Reuse in mining building in site and effection	Retain in site sabiput te repair/ replacement scope	Ym.		id subject to phasing	if replaced in same area, maint relating		687 A	CAT A		190-2385 5.3 es		f and 2

2074COM FINISHES	Pare Lastin	4 12 14 12	installation (2002/2003)	Drurystee	Recycle/News/Network Suggestion	Retained in situ during marks or temposarily removed to condition for reuse in the project	Protocilar Required	Specialiti review required for domaniling and review/allation	Aprime Rem	Replacement Suggestion	Admation Legendari	Original Category (Cat A or FallYon Cat B)	Stage to consider	Paster	Selector	End of Life Journey	<u></u>
Fand Finishes													_			-	
Reception	0	100	20127	siny/Viane interrugate further	Rever in Casia					timber ar stone	all size	CKT A	CATA/B		0023855310	c	What material are thread? If unleasible to remove without broading mane to ?
Tanlar Viryl			2020	timizer flaming recently installed by fujitor	muse is CAT & scheme or send to distribution	Temporarily removed					CI2 & or offsite	CAT N	CAT AN	200			
the efforts Lord B	Core A and B		2002	Unyl/plasts flaming, hardworeing and anti-clp. Quite fixed and dirty in Its successionand likes.	Upsycle/necycle				Fore situatings to law revolvement if phasing responsed	Arehard energy faming		GATA	CAT &		(5023854518	(\mathbf{r})	
Lonings	05,03,05, 06		2002	President ministration of given	Rever in the investoing instance and reflection? up for state to be built.	E3 and E - relatend in site 23 and 2 - both gloss and represend sized learns to be removed the alreams to be removed the alreams day work and services with modification as per shouldness and per should register is always	Fee, protection randod on L3 and L4. L3 and 2 sizeh, will need to its concred to makin malimage.	Ten in ensure gives in undersaged		replacement floor if gives gets localeen		GAT A	687 A	~	650 2285 5.4 1.0		
latigry/blackties	1		3030	They be bitches area	Revor in Casia						Casin or CAT 8	CAT B	CAT A/N	No.		c	If unfraultir is remove without levaling move is 7
WC floors	Care A and B		2002	Vey() dane hard bled faceing	Distribution Centre				WCurrid in mer 18.7 subjects phasing	arti tilp percelais tile fassring	attain	GATA	CAT A		0023855310	÷	If anthracility is remove without localing move in F
Aprivate kilohen Finar finish			2020	Vay/\lane idea flaming	Distribution Centre				Lé subject la aprissor phasing	subject to CAT B	attain	CAT B	GET A			¢	
Lah Frisikes									14 subject to project								Check (1973) and
Carpeti	10,12,3,4		3020	Brige carpet soft facoring	Reuse in Casia				phone	subject to CAT 8	all size	CAT B	CAT 8			c	nat intermined
Carpet	10,12,3,4		2020	Gray Carpet soft Essaving	Reuse in Dank				Li subpri to springer phong	subprot to CAT B	all size	Cet B	CA2 8	100		c	
Carpeti illes	upare.	144mJ	2003/30	Stacks of spare carpot tiles, in good condition	Revue in Canit					subject to CAT 8	all-size	CATA	CAT 8			e -	
Aprilant carpet	4		2020	Corporation New	leve				Lé subject to aprirone phasing	subject to CAT &	all-size	CATE	GIT 8	M		Ð	
Booten Ratura Jacoros Pinaro	1,2,1,4	43	382	the survey availed in antices condition	Rever is sits relating including and relatable. More titles are two domaphilis is used, explore with sparse, ar subservatio sparse, ar subservatio sparse, in subservation sparse.	Lift up serviced an ulte in them fluor valid and unvice sitip out. To her extended on vice adopted for signal/systemment samples likewed quere parefs cam menants on site with productions or site weld ulte antib totalitation.	Where KLF faces may not need in he removed, protection required	Yes in cloud-for damage and recondition/ levi to give accords	Lifudjeti teaprisor phong	Where explanements are readed, somider asing the relativistic usuand hand products	all size if any space	GITA	GET &		800.7381 A.V.L.S		
Table Sal														-			
ternase flase		300	2002	umarete periog tida, in goal amilitar kui abaally dal.	Rever in site in mobiling building and refurbibly. To her taken up and channel.	Removed in recondition and related to cult new Tandwager layout				Eneurosary, replace with limiter and store limites		GRT A	Cel A	1		*	

S.J. Talleta		_											-			+
1.12.8 WG	3	4	20207	årninge skanin. Genel someliter	Rever in Gasin					replace with sud burggars	elluie	CAT N	CAT &	000	(10-238-1.1-0.2	c
1.12 Averable WC7ach	45	1	20387	årninge skards. Gesel samilier	Revise in Casis					Dec 61 parts	all-size	CAT NO	GET &			c
5.12 Care A NCs	93,82,68, 06	34	200	Armitage chants, mast likely. Good condition averall locitin need of closes	Recor in Pacilian or placed in distribution service				WCoart LE in serve 1.6.2 subject to phasing	replace with well hung part	effste	G87.8	C#7 A	10	44033864.543	D
5.14 Care BWCs	01,02,04, 06	3	2002	Jernitage shanin musi likelo. Guusi amultian averal isatin nemi of ulsan	Record in Paulian or planet in state busines anning				WCson Likin serr 1.8.2 salipest to phasing	replace with wall burg part	allain	687.8	CAT &	8	450 2285 5.5-0.1	P
5.35 day WCs	00,01,02, 01,04		2002	Jernitage shards, musi likely. Genel sensition averall hotin nemi of view	Rever in Paulian or planet in distribution antice				WCoan Likin mere 1.5.2 subject to phasing	Dec 14 parts	allsia	687.8	CAT &			D
134965	85		20367	Anniage sharin. Geod condition	Record in Paulian or placed in distribution arriter					replace with wall burg part	offsite	GI7.8	CAT &	0	110.2285-5.5-0.3	Ð
5.17 Table uses	4	м	2082/20	Annitage shands, musi likely. Dated and in need al replacement	Record in Paulian at plannel in distribution annian				WCoast LE in ners 1.5.7 subject to phasing	with since bit and unit	effste	G87.8	CAT &	1	102201-1.1-0.1	Þ
5.22.6.998	4	4	20627	Anniage Danks gund carolitan	Rease in Casis					high quality percelain sink	afficia	CAT NO	CAT &	0	102285-12-02	c
5.33 Game A sinks and Vanity Tays	01,83,68, 06		2620	Winaham busini glasa sinuciar sinis. Masality in mant units	Datribution Centre				WCoan Likin sere 1.6.2 subject to phasing	high quality percelain sink	elfsie	G87.8	CAT &	e e	410-2385-5.1-0.1	
5.21.6 sek	84		20427	Anniage Danis guad carolitan	Recor in Pacifice or placed in distribution service					high quality percelain sink	effste	GI7.A	CAT &	3	610-2285-5.1-0.3	P
5.24 Servar tap	00-04		2002	Fegies sensor tap. Briatively geneticswitten inst slightly scrattcherd and paint shipping	Annua in Paulian ar planed in distribution ansise				WCoan LE in serve 1.6.2 subject to phasing	similar seman tap ar inserparated tap in miner anit.	alfala	G87.8	G87 A	4	65022855201	D
5.25 Sensor tap	00-04		382.20	Bristan replanement tap. Seman in guad sandillan	Recor in Paulien or planni in siteinkostan annice				WCsan LEin sere 1.6.3 subject to phasing	interpretation minute unit	all size	687.8	GAT &	\geq	102288-12-02	P
1.25 kp	68		2620	Bristen in standard WCs (are showe). Manual top in any. We unit	Rever in Casis					new alite lapar to match along	effste	CAT NO	CET &	1	610-2285-5.2-0.2	¢
1.27 sep	85		2042.1	kaoneni sharging nom. Dated	planet in state button ansier					sennar laps te match upper flases	effste	G87.8	CAT A		450228542-03	P
1.31.8 tailet wil dispersor	4		268	dalphis talat nel dispanser in geod candition	Rever in Casis					minur unit incorporated	effste	CAT NO	CAT &	-	610 2385 5.6 62	c
5.12 Talet larah	4		280	Statebra steel Italiler in Isad condition	Rever in Casis				WCoan LE in serv 1.6.2 subject to phasing	upgraded version	efficie	687.8	CAT &	9	65022854.841	c
5.33 Paper toward holder			2002	Gainless sized toward balaier and line. In good condition but visually dated.	Rever in Gaule				WCoan Likin merel & 2 subject to phasing	inspanala into new design or replace with minur unit	allain	687.8	CAT &	5	4552381-57-61	¢
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L.G. Assentia shaarn	Carel and a	3	2002	Good condition. Protectigious and Evalues are detect	Datribution Centre				WCoan Likin serr 1.5.7 soliper is phasing	ta matab kasamani shanging rasma	allain	687.8	CAT A		002305430033	
1.0 lasereni shaarn	84	4	20127	Peer condition and sheap readels.	Dairdadan Centre					line main	allsie	G87.8	CHT &	1	6922854743	
ESE Sambals and balantization in fire states	Cove A.		2002	Metal handrath and steel Industrate in good condition. Codd are alish of paint.	resource missing building	relational in silos	protest able an site work are undergane		LL access is needed for aprivate phasing			G87.8	GET &			

Freed Rough Installation

Aprices Sense Lauration Lauration Delay (Set) April Ration Robinson Edwards Parts

E.O.LENETAR	IV AND SUNDAUS	Piece/	Rough Aream2/ Quantity	installation (2002/2020)	Description	Respir/ResseyBelaria/ Bin Suggestion	Relational in subsidiaring works, an incorporately consecuted its cannel little for measure in the project	Protocilian Respond	Specialist resident required for dismanting and reinstallation	Aprivate Barn	Begin senari Seggenian	Atlantian Logention	Original Calegory (Cal & er Pajiteu Cal R)	Dage in consider	Protect	Belananar	End of Life Journey	-
1.12 Aur 1	er ar kılakısle	3		2062	Metal hamitud, deteriorating and coming away from wall Eats into space	upopula(mopula					People's grandfinlan alternation anaryarating planting	responsible disposal	CATA	CAT &	1 and	00120144-01		
	Indep	1	unknauen	3630	clear detels. Intige on limit flase, were good condition	Resort in Cash						all size	CAT B	CAT B	S		c	
		ų	4	2620	Two new readeb is lower ground flase kidden	Rever in Land						all size	CAT B	CAT B			c	
Xaab	en Cakinete	10	1 urt	3630	White painted calaboritis in goad constition	Anner in Andrea ar plannt in deir lasten antre						all size	CAT B	CAT B	5		0	
61A	en sakineris.	81,68,65	1 with	3620	blask painterlookinets in goad constitue	Resort in Lank						all size	CAT B	CAT B			¢	
64	uhen sink	04, 02, 03	3	3620	Pranter mater, Black sink in genel constition	Resort in Lank						all size	CAT B	CAT B	-		¢	
East	en Counter	04, 02, 08	3	2620	white counter in good condition	Resort in Dask						all size	CAT B	GAT 8			¢	
East	et caute	60	1	2620	partie lie motier is paul conditor	Rever in Lank						all size	CAT B	GATE	1		c	
644	en sakineris.	4	1	2620	painted limiter	Resort in Lank				Li salijet te phasing		all size	CAT B	GAT 8			¢	Own CAR
Elseh	en Countier	4	1	2620	while solid surface	Resort in Lank				Li subject to phoning		all size	CAT B	GAT 8			¢	
-	here Islamd	4	1	2620	painted limber with white solid surface	Resort in Lank				Li salijet te phasing		all size	CAT B	GAT 8			¢	
-	uhan Sirik	4	1	2620	netal side adhire salat surface	Resort in Lank				Li salijet te phasing		all size	CAT B	GAT 8			¢	
Kishen	lväge bassar	4	1	2620	large while bulge basses, double door	Resort in Cash				Li subject to phoning		alfala	CAT B	GAT 8			c	
Chiles		4	1	2630	niceano, polocelia	Rever in Lank				Li subject to phoning		all size	CAT B	GATE	Ţ		c	
Tinian land	thing and planting	4	1	2620	Testine panelled kernihing and planting uptom with falleric cushiams	Rever in Lank				Li subject to phoning		all size	CAT B	GAT B			c	
5.53.der	ale cale a	3		2062	Metal handrail and glassed parted	waar in miking Isolalog in site where passilier	Retain in situ/ modification scope subject to final design	protect able or site audo are undergone	Specialisi neesited har alterations		where replacing with new, simple gives		CAT A	GETAKS	6	00.220 13.01		









22 Baker Street



Key:

(A) 22 BS - Cat A

Potential

(C) Oasis Play



(F) Recycle

Material Reuse Pathway





Material Passport development

In collaboration with the Material Passport Working Group

Material Passport - Raised Access Floors Ss_30_20_70_70-00001											
Current Author	Marks Barfield Architects										
Revision	Revision Date	Author	Project								
P01	02/11/2023	Marks Barfield Architects	W1U 3BW								

DISCLAIMER:

nit Type

Weight of a unit Number of units

Gross Volume

ate of Original Manufacture upplier/ Manufacturer Details

ensitv

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Summary



Unique Number	45757278-0444-46ee-8842-ec863b4bcfc7
Classification	EF_25_30_25-00002
Name	Internal Double Riser Door Fire Rated
Unit Type	One doorset
Material/s	30min and 60min fire rated MDF laminated doors with paint finish.
Dimensions of a unit	1110mm x 2780mm. Varies, refer to drawings
Weight of a unit	Varies
Number of units	28
Gross Area	3.1
Gross Volume	0.124
Density	600
Gross Weight	74.4
Method of Fixing	Mechanical, pivot hinge.
Date of Original Manufacture	2002
Supplier/ Manufacturer Details	unknown
Current Installation Date	2023
Life Expectancy	
Building Layer	Space Plan
Building Element	2.8 Internal Doors
_	
	30min and 60min fire rated MDF laminated doors with paint finish. Pivot hinge.
Description	Aluminium skirting detail to base of doors.

Unfront Em	hadiad Ca	rhon A1-E	DOF UP

Material Passport - Internal Stair EF_35_10_40-00001	Material Passport - Internal Stair Structure EF_35_10_40-00001											
Current Author	Marks Barfield Architects											
Revision	Revision Date	Author	Project									
P01	02/11/2023	Marks Barfield Architects	W1U 3BW									

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Unique Number	df391abf-e137-4756-b387-176cb84c9e43
Classification	EF_35_10_40-0000
Name	Internal Stair Structure
Unit Type	One stair structure
Material/s	Stee
Dimensions of a unit	20 risers, spans FFL to FFL height of 3530mm, riser height 177.5mm, run depth varies width of stair 1150mm
Weight of a unit	unknowr
Number of units	
Gross Area	na
Gross Volume	0.205
Density	7750
Gross Weight	1588.75
Method of Fixing	Mechanical, bolted utilising exising tread support brackets New timber treads bonded to existing steel stair structure
Date of Original Manufacture	presumed 2002
	Spiral stairs, Lewes Design Contracts Ltd
	The Mill, Glynde, Lewes
Original supplier/ Manufacturer	East Sussex BN8 653
Details	
	https://www.spiralstairs.co.uk/contact-us
Current Installation Date	2023
Life Expectancy	60
Building Layer	Space Plan
Building Element	2.4 Stairs and Ramps

Curved steel staircase for one office sized floor with class treads insinted steel stringers

Adhesive	Supplier/ Ma
unknown	Current Insta
unknown	Life Expectar
2023	
60	Building Laye
	Building Elen
Space Plan	
2.2 Upper Floors	
led raised access floor system that consists of reused panels from	Description

1ba8f332-44b9-4002-a95e-4840398bef38 Ss_30_20_70_70-00001 Raised Access Floors

600x600mm panels

4245.5 4245.5m2

na

na #VALUE!

Second user recycled raised access floor system that consists of reused panels from existing building, refurbished panels from another source, and new pedestals. New pedestals to be compatible with re-used panels from existing building.

Chipboard core encased in steel, acoustic pads provided where necessary. Reused steel tiles from original building, new second-hand pedestals from new manufacturer.

generic maximum height 1000mm, generic minimum height 65mm.

16/47

Immediate Barriers to Reuse



marks barfield

The Reality of Reuse: Deconstruction Stage

From desk to site

22 Baker Street Collaborated with Lazari, Lawmens and Faithdean



Removal of reuse material via electric vans



Removal of reuse material to be sorted



Reuse in situ material collected, sorted, protected and referenced for reconditioning and reinstallation.



Ceiling Tiles



Soft strip out of ceilings



Raised access floor tiles deconstructed and grouped to be sent for reconditioning before being reinstalled in office building.



Research in process - Deconstruction Handbook

22 Baker Street Collaboration between MBA and Lawmens



Success Stories

Raised Access Floors

Existing Material	Passport 01
Floor Location:	01,02,03,04
Area (Estimate):	4245.5m ²
Installment:	2002
Recycle/Reuse/Refurb:	Keep and refurb
Replacement:	NA
Stage to Consider:	CAT A
Monetary Saving:	Circa £85.000
Carbon Saving:	121,633.6 kg CO2e



Description: Metal raised access floor plates and pedestals across office floorplates. Refurb and reuse as much as possible, replacing with upcycled tiles where need.

Potential Areas for Reuse: In-situ

Material Name: Raised Access Floors

Capital Saving: circa £85,000 Carbon Saving: 121,633.6 kg CO,*e*



Typical Existing Office Floor Plan

Key Savings:

Raised Access Floors Area = 4872 m2 Cost saving = £146,160 Carbon saving = 121,634 kg CO2e

Internal Fire Doors Number = 133 units Cost saving = **£199,500** Carbon saving = **3900** kg co2e

Reused items:

- **1. Raised access floors**
- 2. Internal doors
- 3. Riser doors
- 4. External doors
- **5.** Concrete pavers
- **6.** Feature stair structure
- 7. MDF cladding panels
- 8. Perimeter plasterboard and
- skirting
- 9. Atrium timber fascia
- 10. Glazed atrium balustrade



Storage and Coordination

Storage and Coordination



10 Key Lessons Learnt



2

Reuse in-situ where possible

In early design stages, get all relevant parties involved earlier including a de-construction contractor to find a clear path for reuse.



Clearly **plan out risks**, address them ASAP and get as much **surveying and auditing** done at early stage.



Recycle/ warranty life of some materials make them difficult to reuse. Such as insulation and M&E ducts.



Key practicality is storage and standardisation of reuse inventory and system.



Ensure **good records through material passporting** of manufacture, supplier and certification are kept. Particularly with respect to fire rated items.



Currently good reuse Hosts are usually small community/ charity projects.



Reuse items will **need a demand** – otherwise will sit in a warehouse.



Some of the easier reuse wins are the hidden more standardised items such as **Pattressing** – particularly with rising costs of plywood.



Note the waste from onsite works, temporary works and temporary protection is not to be ignored.







Host Building: Oasis Nature Garden

Client: Oasis

Architect: Marks Barfield Architects

Cost Consultant: Gardiner and Theobald

Structural Engineer: Term Engineering

Site Location



Nature Garden

The Nature Garden Brief

- New building for nature garden for educational play, a forest school nursery, a staff office and communal space.
- Nature garden classroom for 30 children
- **3** Forest School Nursery Classroom for 15 children with direct level access to a dedicated outdoor area.
- Staff office and kitchen
- 5 WCs 1 standard and 1 accessible
- 6 Reception area
- Childrens kitchen in both classrooms
- 8 Storage and draws for learning materials
 - Buggy store
- 10 Cloakroom area
- 11 Cov

9

2

Covered outdoor space

Importance of a clear brief to start analysing mateial needs



3D View



Oasis Methodology for Reuse









Reuse of materials - Inventory

Reuse from 22 Baker Street:

1.0 INTERNAL WALLS, FINISHES AND PARTITIONS	Floor Location	Rough Area m2/ Quantity	Installation (2002/2020)	Description	Recycle/Reuse/Refurb Suggestion	Quantity needed	Relocation Suggestion	Original Category (Cat A or Fujitsu Cat B)	Photos	Reference numbers in condition survey
Panelling to curved wall	0	70m2	2002	Timber/vinyl type panelling to reception feature wall	Reuse in Oasis	130m2	off site	CAT A		650-2285-1.1-04
Timber effect tiles	1		2020	Timber tiles to kitchens in Fujitsu fit out	Reuse in Oasis	130m2	off site	CAT B		
Tiles to kicthen	1		2020	Black glazed tiles to underside of kitchen counter	Reuse in Oasis	130m2	off site	CATB		
2.0 FLOOR FINISHES	Floor Location	Rough Area m2/ Quantity	Installation (2002/2020)	Description	Recycle/Reuse/Refurb Suggestion	Quantity needed	Relocation Suggestion	Original Category (Cat A or Fujitsu Cat B)	Photos	Reference
Hard Panishes	0	100	2002?	vinyl/stone-interrogate further	Reuse in Oasis	130m2	off-site	CATA		650-2285-3.1-1.0
Dark grey/ black tiles	1		2020	Tiles to kitchen area	Reuse in Oasis	130m2	off site	CAT B	22	
Carpet	16,1,2,3,4		2020	Beige carpet soft flooring	Reuse in Oasis	130m2	off-site	CAT B	-	
Carpet	16,1,2,3,4		2020	Grey Carpet soft flooring	Reuse in Oasis	130m2	off-site	Cat B	ALCOST 1	
Carpet tiles	spare	144m2	2002/20	Stacks of spare carpet tiles, in good condition	Reuse in Oasis	130m2	off-site	CATA	E	
3.0 INTERNAL DOORS	Floor/ Location	Rough Area m2/ Quantity	Installation (2002/2020)	Description	Recycle/Reuse/Refurb/ Bin Suggestion	Quantity needed	Relocation Suggestion	Original Category (Cat A or Fujitsu Cat B)	Photos	Reference
Internal Timber doors	01,02,03, 04		2020	Timber paneled doors, double used in fujitsu fit out	Reuse in Oasis	1x double, 4x single	off-site	CAT B		
5.0 SANITARY AND SUNDRIES	Floor/ Location	Rough Area m2/ Quantity	Installation (2002/2020)	Description	Recycle/Reuse/Refurb/ Bin Suggestion	Quantity needed	Relocation Suggestion	Original Category (Cat A or Fujitsu Cat B)	Photos	Reference
5.11 A-WCs	LG	4	2020?	Armitage shanks. Good condition	Reuse in Oasis	1 inc toilet seat	off site	CAT B?		650-2285-5.5-0.2
5.12 Accessible WC	LG	1	2020?	Armitage shanks. Good condition	Reuse in Oasis	1, inc grabrails, sink, tap and all accessories	off-site	CAT B?		650-2285-5.5-0.2
5.21 A-sink	LG	4	2002?	Armitage Shanks good condition	Reuse in Oasis	3	offsite	CAT B?	0	650-2285-5.1-0.2
5.26 tap	All	36	2020	Bristan in standard WCs (see above). Manual tap in acc. Wc unit	Reuse in Oasis	3	offsite	CAT B?		650-2285-5.2-0.2
5.3 Dryers and detaes	-1	36	2020	dolphin toilet roll dispenser in good condition	Reuse in Oasis	3	off site	CAT B?	-	650-2285-5.6-0.2
5.32 Toilet brush	all	36	2002	Stainless steel holder in bad condition	Reuse in Oasis	3	off site	CAT A	S	650-2285-5.8-0.1
5.33 Paper towel holder	all	36	2002	Stainless steel towel holder and bin. In good condition but visually dated.	Reuse in Oasis	3	offsite	CATA	131	650-2285-5.7-0.1
Fridge	all	unknown	2020	clear drinks fridge on first floor, very good condition	Reuse in Oasis	al	off site	CAT B		
Microwaves	all	4	2020	Two new models in lower ground floor kicthen	Reuse in Oasis	3	offsite	CAT B		
Kitchen cabinets	01,,02,03	3 sets	2020	black painted cabinets in good condition	Reuse in Oasis	al	offsite	CAT B	NV.	
Kitchen sink	01, 02, 03	3	2020	Franke make, Black sink in good condition	Reuse in Oasis	at	off site	CAT B	-	
Kitchen Counter	01,02,03	3	2020	white counter in good condition	Reuse in Oasis	al	offsite	CAT B		
Kitchen counter	LG	1	2020	granite like counter in good condition	Reuse in Oasis	1	offsite	CAT B		



Reuse of materials - Other Donors

Nu-Living CLT Panels



Ashwells Timber Yard



One Exchange Square













marks barfield architects

RIBA Stages vs Lifecycle Stages



Reclaimed Material Bank

Research and Development



What could this model look like?



Factors to consider:

- 1. Will the space store all materials or focus on specific types? Such as high turnover fit our materials.
- 2. What will the reuse business model look like? Will the materials be re-sold, stored for specific clients, space charged as a rent?
- 3. What is the extent of works done to the materials? Such as repair, rework, re-warranty/ certify, upcycle?
- 4. What is the current/ predicted supply/ demand of these materials? How long are they likely to be stored before being redistributed?
- 5. How are items transported to/ from the site?

Case Study:

Material Cultures

- Client: LB Newham, in collaboration with Arup 2022
- Creation of a Circular Economy Construction Hub (CECH) that can serve the whole of London and set an example internationally.
- Significant culutural and environmental benefits.
- Could support over 250 direct jobs (gross), and opportunities for engagement with over 10,000 students per year while generating over £6.5 in new local spend, and additional investment of up to £137m over the next 10 years.









Case Study:

Manchester Renew Hub

- Renew is an ambitious and unique project which aims to create value from waste to benefit Greater Manchester.
- It's a joint initiative between R4GM & SUEZ UK. They take items donated at recycling centres across Greater Manchester, then repair and renew them at their Renew Hub, ready to be resold to a new home.





Case Study:

RotorDC

https://rotordc.com/

- A Co-operative setup in 2016, based in Brussels
- Dismantle, Process and Trade Materials
- 7-12 staff (organised into 4 teams: Acquisition, Process, HR and IT Support)

Their specialisations include

- repair and transformation of lighting equipment,
- a state of the art method for removing mortar from ceramic tiles
- the reprocessing of high quality 'urban' wood

cleaning and preparing for reuse of furniture and building hardware, sanitary equipment
planning and organising of salvage operations in large and complicated buildings







Case Study:

Brussels Material Hubs

- *Stadsatelier de Ville* is a circular hub planned fo the port of brussels
- Aims to be a circular hub for building materials, focusing on production, distribution, training and innovation.
- Founders are BC Materials (earth building company) and Herk&Red (investment company of Democo)
- Will also rent spaces and stimulate collaboration on the site with other partners from the circular economy
- BC Materials already holds classes and workshops where they have practical applications tested by students, engineers and potential builders







The Material village aims to create a wider circular materials store at the port.

1) Carbon

Reduced embodied carbon in manufacturing, processing and transport of materials.

2 Cost/ Programme

Cost savings on existing materials and potential advantages to programme due to no lead in times/ material delay.

3 Waste

Reduced waste and energy/costs associated with waste processing.

Social

Social benefits through apprenticeships in the new circular industry - material deconstruction and repurposing.

Environmental

Urban mining allows landscapes which are traditionally intensively mined for materials to heal.