

We support sustainable sourcing of all materials in our portfolio. Project Teams are required to report on third party certification and transparent chain of custody, and we will carry out audits to ensure compliance.

Our Materials Schedule aims to address:

- Environmental impacts through the use of low carbon, low energy production of materials;
- Human rights and modern slavery within manufacturing and our supply chain; and
- The use of materials free of harmful chemicals to support the wellbeing of our workers and customers.

Requirements for all materials

- Responsibly sourced within the EU/UK
- [Living Building Challenge \(LBC\) Red List](#)
- Compliance with UK REACH Regulations
- Environment Product Declarations (EPDs) to be used where possible

Reporting for all materials

- Provide supplier confirmation of manufacturing/extraction source location
- Provide evidence of certification met

How to use the schedule

- All materials have a route to follow.
- Always prioritise Route 1. Only proceed to the next route if the first route is not possible.
- For items where there is only a Route 1, it is expected that this is achievable. If this is not possible, consult the BL sustainability lead.

For materials selection, please consult full Materials Schedule below.

Materials List	
- Adhesives, binders, coatings, sealants, glue, grout, mortar, resins, thin sets, and stabilisers, lubricants	- Raised access floors
- Aggregates	- Refrigerants
- Aluminium	- Roofing
- Artificial turf	- Rubber coated products
- Asphalt	- Sanitary ware
- Blockwork and Brickwork	- Stabilisers and batteries
- Ceilings and ceiling tiles	- Steel – Reinforcing
- Cleaning products, detergents and hand sanitisers etc (including construction cleaning process)	- Steel – Structural
- Concrete and Cement products	- Stone
- Doors and window hardware	- Timber
- Electrical equipment i.e. thermostats, fire alarms, meters and sensors	- Wall coverings
- Façade and cladding – including terraces and balcony external finishes	- Wall Protection and Signage
- Fire protection and Flame retardant and products including flame retardants i.e. OSB	- Wood products including pressed-wood particleboard, plywood, fibreboard and treated wood
- Flooring and carpet	
- Furniture and Furnishings	
- Glass	
- Insulation	
- Lead	
- Packaging	
- Paints	
- Pest control	
- Plasterboard	
- Pipes and plumbing equipment	

British Land Material Schedule

Materials and Chemicals	NC Required	NC Prohibited	RFO Action	RFO No Action	Requirement Routes to Take	Health Drivers and Effects
Adhesives, binders, coatings, sealants, glue, grout, mortar, resins, thin sets, and stabilisers, lubricants	●		●		<p>ROUTE 1: Living Building Challenge Red List Free e.g. Declare Label Certification confirming LBC Red List Free Free from: Engineered Nanomaterials (ENMs), Isocyanate-Based Polyurethane (PUR and PU) and Nonylphenol Compliance with UK REACH Regulations 100% low VOC certification (see below in Glossary)</p> <p>ROUTE 2: Material technical specification with ingredients list showing free from: Polyurethane, polyisocyanurate foam, Bisphenol A (BPA), Chloroprene, Engineered Nanomaterials (ENMs), Epichlorohydrin (ECH), Formaldehyde and Urea Formaldehyde, Isocyanate-Based Polyurethane (PUR and PU) and Polyisocyanurate (PIR), lead, Nonylphenol, Phthalates, Vermiculite (unless asbestos free) 100% low VOC certification (see below in Glossary)</p> <p>ROUTE 3: Manufacturer letter of assurance/confirmation none of the above chemicals present. 100% low VOC certification (see below in Glossary)</p>	
Aggregates	●		●		<p>ROUTE 1: Responsibly sourced within the EU/UK BES6001 (minimum Very Good) Environment Product Declarations (EPDs) to be used where possible</p>	
Alkylphenols		●	●		<p>NC REQUIREMENT: Prohibited</p> <p>ROUTE 1: Living Building Challenge Red List Free e.g. Declare Label Certification confirming LBC Red List Free Compliance with UK REACH Regulations</p> <p>ROUTE 2: Material technical specification with ingredients list provided showing no Alkylphenols present</p> <p>ROUTE 3: Manufacturer letter of assurance/ confirmation no Alkylphenols present</p> <p>RFO REQUIREMENT: No action required for refurbishment projects.</p>	<p>HEALTH DRIVERS AND EFFECTS: Exposure to alkylphenols in children can harm brain development, leading to learning and behavioural problems. In adults, this chemical is associated with increased cancer risk and reproductive health risks.</p> <p>In addition, this chemical is a recognised endocrine disruptor and a potent environmental contaminant.</p> <p>FOUND IN: Alkylphenols is used to make alkylphenol ethoxylates (APEs) which are used in flooring, carpet tile and carpet sheet, carpet backing, paints, resins, protective coatings, detergents, pesticides, steel manufacturing, cleaners, paints and glue.</p> <p>Nonylphenol (NP) and nonylphenol ethoxylates (NPEs) are the most widely used APEs.</p>
Aluminium	●		●		<p>ROUTE 1: Responsibly sourced within the EU/UK BES6001 (minimum Very Good) Cradle-to-Cradle Certified™ Environment Product Declarations (EPDs) to be used where possible</p>	

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Materials and Chemicals	NC Required	NC Prohibited	RFO Action	RFO No Action	Requirement Routes to Take	Health Drivers and Effects
Antimony, antimony oxide, antimony trioxide (Sb)	●		●		<p>NC REQUIREMENT:</p> <p>ROUTE 1: Declare Label Certification confirming the product is free from antimony or less than 100ppm is present in the product Compliance with UK REACH Regulations ANSI/BIFMA e3 Furniture Sustainability Standard PLUS written confirmation from manufacturer that less than 100ppm is present in the product</p> <p>ROUTE 2: Material technical specification with ingredients list provided showing that less than 100ppm of antimony is present in the product.</p> <p>ROUTE 3: Manufacturer letter of assurance/ confirmation that less than 100ppm of antimony is present in the product.</p> <p>RFO REQUIREMENT:</p> <p>ROUTE 1: Carry out a hazardous materials survey to test for presence of Antimony in materials that have the potential to contain it and are intended to remain in-situ.</p> <p>Carry out an air quality monitoring for antimony demonstrating staff working on site is exposed to less than 05. mg.m3 for long term periods (8 hours) (EH40/2005 Workplace exposure limits: https://www.hse.gov.uk/pUbns/priced/eh40.pdf).</p> <p>If Antimony is detected in existing materials above 100ppm, take advice from hazardous materials survey and specialist to identify if materials should be encapsulated or removed. When all actions complete, request specialist sign off.</p>	<p>HEALTH DRIVERS AND EFFECTS: Antimony can bioaccumulate, and is a known carcinogen. Antimony is also an environmental pollutant contaminating air, soil and water.</p> <p>FOUND IN: Antimony trioxide (ATO) is the most widely used antimony compound, which is commonly used as a flame retardant synergist for halogenated flame retardants (also prohibited) used in textiles and plastics. Antimony may also used in thermal Insulation, foamed-in-place insulation, raised access floor tiles, carpet (tile and sheet), carpet backing, resilient flooring, roofing membranes, sanitary ware, and door hardware. It is a component of pewter.</p>
Artificial turf	●		●		<p>NC REQUIREMENT:</p> <p>ROUTE 1: Responsibly sourced within the EU/UK Living Building Challenge Red List Free e.g. Declare Label Certification confirming LBC Red List Free and free from nonylphenols STC Certification programme or IPEMA Certified Certified Yarns (free from heavy metals, such as lead)</p> <p>ROUTE 2: Material technical specification showing no lead or nonylphenol polyethylene present</p> <p>ROUTE 3: Manufacturer letter of assurance/ confirming no lead or nonylphenol polyethylene present</p> <p>RFO REQUIREMENT:</p> <p>ROUTE 1: Review existing turf's specification. If lead or nonylphenol is present the material should be removed. If ingredients are unknown, carry out a lead and nonylphenol investigation and if present the material should be removed.</p>	<p>HEALTH DRIVERS AND EFFECTS: Chromium, nonylphenols (NP) and lead may be present in synthetic turf because lead chromate (PbCrO4) pigment is used in turf fibres. Synthetic turf fibres can degrade from use (wear) and exposure to ultraviolet radiation and other atmospheric conditions, causing the production of turf-derived lead and chromium containing fibres and dust.</p> <p>Exposure to synthetic turf fibres containing nonylphenols or lead chromate in children can harm brain development, leading to learning and behavioural problems.</p> <p>In addition, nonylphenols (NP) are persistent in the aquatic environment, moderately bioaccumulative, and extremely toxic to aquatic organisms. NP is also an endocrine disruptor.</p> <p>FOUND IN: Outdoor materials used for instance in children's playgrounds and artificial grass.</p>
Asphalt	●		●		<p>ROUTE 1: Responsibly sourced within the EU/UK BES6001 (minimum Very Good) Cradle-to-Cradle Certified™ Environment Product Declarations (EPDs) to be used where possible</p>	

British Land Material Schedule

Materials and Chemicals	NC Required	NC Prohibited	RFO Action	RFO No Action	Requirement Routes to Take	Health Drivers and Effects
Bisphenol A (BPA)		●	●		<p>NC REQUIREMENT: Prohibited</p> <p>ROUTE 1: Living Building Challenge Red List Free e.g. Declare Label Certification confirming LBC Red List Free Compliance with UK REACH Regulations ANSI/BIFMA e3 Furniture Sustainability Standard PLUS written confirmation from manufacturer of Bisphenol A free</p> <p>ROUTE 2: Material technical specification with ingredients list provided confirming the material is BPA free</p> <p>ROUTE 3: Manufacturer letter of assurance confirming the material is BPA free</p> <p>RFO REQUIREMENT: No action required for refurbishments.</p>	<p>HEALTH DRIVERS AND EFFECTS: Bisphenol A (BPA) exposure in children can harm brain development, leading to learning and behavioural problems. Exposure can also lead to birth defects.</p> <p>In adults, this metal is associated with high male and female reproductive health risks and as an endocrine disruptor, as it affects the body's hormonal systems.</p> <p>FOUND IN: Adhesives, flooring, resilient flooring adhesives and components, fluid-applied flooring systems and components, tile installation products and components (wet), resilient flooring, high performance coatings, grout, thin sets and mortars.</p>
Blockwork and brickwork	●		●		<p>ROUTE 1: Responsibly sourced within the EU/UK BES6001 (minimum Very Good)</p>	
Cadmium (Cd)		●	●		<p>NC REQUIREMENT: Prohibited</p> <p>ROUTE 1: Living Building Challenge Red List Free e.g. Declare Label Certification confirming LBC Red List Free or less than 100ppm of Cadmium. Compliance with UK REACH Regulations</p> <p>ROUTE 2: Material technical specification with ingredients list provided showing that less than 100ppm of cadmium is present in the product.</p> <p>ROUTE 3: Manufacturer letter of assurance confirming that less than 100ppm of cadmium is present in the product.</p> <p>RFO REQUIREMENT: ROUTE 1: Carry out a hazardous materials survey to test for presence of Cadmium in materials that have the potential to contain it and are intended to remain in-situ. If Cadmium is detected in existing materials, take advice from hazardous materials survey and specialist to identify if materials should be removed/replaced.</p>	<p>HEALTH DRIVERS AND EFFECTS: Cadmium's extreme toxicity means that overexposure can occur even when only trace amounts are present in the human system. Exposure occurs mainly in the form of airborne dust and fume.</p> <p>Cadmium exposure in children can harm brain development, leading to learning and behavioural problems. In adults, this metal is associated with increased cancer risk, in particular with lung and kidney damage as well as weakened bones and hypertension.</p> <p>FOUND IN: Cadmium is used to generate compounds used in batteries, as a pigment or used as a plastics stabilizer.</p>
Ceilings and ceiling tiles	●		●		<p>ROUTE 1: Responsibly sourced within the EU/UK Environment Product Declarations (EPDs) to be used where possible Living Building Challenge Red List Free e.g. Declare Label Certification confirming LBC Red List Free Compliance with UK REACH Regulations Free from: mercury, nonylphenol, Polyvinyl Chloride (PVC) and Polyvinylidene Chloride (PVDC)</p> <p>ROUTE 2: Material technical specification with ingredients list showing free from chemicals listed above.</p> <p>ROUTE 3: Manufacturer letter of assurance/confirmation none of the above chemicals present.</p>	

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Materials and Chemicals	NC Required	NC Prohibited	RFO Action	RFO No Action	Requirement Routes to Take	Health Drivers and Effects
Chlorinated Polyethylene (CPE), chlorinated polyvinylchloride (CPVC), chlorosulfonated polyethylene (CSPE) and polychloroprene rubber (CR)		●		●	<p>NC REQUIREMENT: Prohibited</p> <p>ROUTE 1: Living Building Challenge Red List Free e.g. Declare Label Certification confirming LBC Red List Free Compliance with UK REACH Regulations</p> <p>ROUTE 2: Material technical specification confirming CPE, CPVC, CSPE and CR free</p> <p>ROUTE 3: Manufacturer letter of assurance/ confirming CPE, CPVC, CSPE and CR free</p> <p>RFO REQUIREMENT: No action required for refurbishments.</p>	<p>HEALTH DRIVERS AND EFFECTS: CPE, CPVC, CSPE and CR are high risk persistent bioaccumulative toxicants. These contribute to the creation of dioxins, the most potent toxins known to humans, with no known safe limit for exposure and a strong propensity for bioaccumulation.</p> <p>FOUND IN: These are a family of thermoplastics and rubbers used in the manufacture of doors and windows, pipe/drainage applications, flexible sheeting, roofing membranes, electrical wires and cables, hoses and seals.</p>
Chlorobenzenes, -1,2,3-trichlorobenzene (1,2,3-TCB), -1,2,4-trichlorobenzene (1,2,4-TCB), -1,2,3,4-tetrachlorobenzene (1,2,3,4-TeCB), -1,2,3,5-tetrachlorobenzene (1,2,3,5-TeCB)-1,2,4,5-tetrachlorobenzene (1,2,4,5-TeCB)		●		●	<p>NC REQUIREMENT: Prohibited</p> <p>ROUTE 1: Living Building Challenge Red List Free e.g. Declare Label Certification confirming LBC Red List Free Compliance with UK REACH Regulations</p> <p>ROUTE 2: Material technical specification confirming Chlorobenzenes free</p> <p>ROUTE 3: Manufacturer letter of assurance/ confirming Chlorobenzenes free</p> <p>RFO REQUIREMENT: No action required for refurbishments.</p>	<p>HEALTH DRIVERS AND EFFECTS: Chlorobenzenes are a high risk persistent bioaccumulative toxicants and can lead to the development of cancer.</p> <p>FOUND IN: These are widely used in the production of chemical pesticides and herbicides.</p>
Chloroprene (Neoprene)		●	●		<p>NC REQUIREMENT: Prohibited</p> <p>ROUTE 1: Living Building Challenge Red List Free e.g. Declare Label Certification confirming LBC Red List Free Compliance with UK REACH Regulations</p> <p>ROUTE 2: Material technical specification confirming Chloroprene free</p> <p>ROUTE 3: Manufacturer letter of assurance/ confirming Chloroprene free</p> <p>RFO REQUIREMENT: ROUTE 1: Carry out air quality testing to that monitor the presence of Chloroprene (Neoprene) does not exceed 1 ppm/15 minutes (according to the National Institute for Occupational Safety and Health NIOSH guideline) or 10ppm/8-hours (HSE guidelines). No action required if the Chloroprene (Neoprene) does not present a danger for fire safety or is in good state (this should be verified by a fire specialist). However, the air concentration of Chloroprene (Neoprene) should not exceed 1 ppm/15 minutes (NIOSH) or 10ppm/8-hours (HSE Guidance). The main source of occupational exposure to chloroprene is the manufacture of chloroprene, hence we recommend testing is carried out if this is the main building's activity.</p>	<p>HEALTH DRIVERS AND EFFECTS: Chloroprene is a high risk persistent bioaccumulative toxicant. It is considered a cancer-potential chemical. This is also an endocrine disruptor, affecting the body's hormonal systems and also affects male and female reproductive health.</p> <p>In addition, Chloroprene is highly flammable.</p> <p>FOUND IN: Rubber coated fabrics, gaskets, coatings, adhesives, latex, paper treatment, etc.</p>

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Materials and Chemicals	NC Required	NC Prohibited	RFO Action	RFO No Action	Requirement Routes to Take	Health Drivers and Effects
Cleaning products, detergents and hand sanitisers etc. (including construction cleaning process)	●		●		<p>ROUTE 1: Living Building Challenge Red List Free e.g. Declare Label Certification confirming LBC Red List Free Cradle-to-Cradle Certified™ Compliance with UK REACH Regulations ANSI/BIFMA e3 Furniture Sustainability Standard Free from: Engineered Nanomaterials (ENMs), Triclosan/Triclocaraban</p> <p>ROUTE 2: Material technical specification with ingredients list showing free from: Alkylphenols, Engineered Nanomaterials (ENMs), Triclosan/Triclocaraban</p> <p>ROUTE 3: Manufacturer letter of assurance/confirmation none of the above chemicals present.</p>	
Concrete and Cement Products	●		●		<p>ROUTE 1: Responsibly sourced within the EU/UK BES6001 minimum Good Cradle-to-Cradle Certified™ Environment Product Declarations (EPDs) to be used where possible Free from: Vermiculite (unless asbestos free)</p>	
Doors and window hardware	●		●		<p>ROUTE 1: Responsibly sourced within the EU/UK Environment Product Declarations (EPDs) to be used where possible Living Building Challenge Red List Free e.g. Declare Label Certification confirming LBC Red List Free Free from: Antimony and polychloroprene rubber (CR) Compliance with UK REACH Regulations</p> <p>ROUTE 2: Material technical specification with ingredients list showing free from: Antimony, Chlorinated Polyethylene (CPE), chlorinated polyvinylchloride (CPVC), chlorosulfonated polyethylene (CSPE) and polychloroprene rubber (CR)</p> <p>ROUTE 3: Manufacturer letter of assurance/confirmation none of the above chemicals present.</p>	
Electrical equipment i.e. thermostats, fire alarms, meters and sensors	●		●		<p>ROUTE 1: Responsibly sourced within the EU/UK Environment Product Declarations (EPDs) to be used where possible Living Building Challenge Red List Free e.g. Declare Label Certification confirming LBC Red List Free Compliance with UK REACH Regulations Free from: PVC, and polychloroprene rubber (CR), Hexavalent chromium</p> <p>ROUTE 2: Material technical specification with ingredients list showing free from: lead, mercury, PVC, Chlorinated Polyethylene (CPE), chlorinated polyvinylchloride (CPVC), chlorosulfonated polyethylene (CSPE) and polychloroprene rubber (CR), Halogenated flame retardants, Hexavalent chromium</p> <p>ROUTE 3: Manufacturer letter of assurance/confirmation none of the above chemicals present.</p>	

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Materials and Chemicals	NC Required	NC Prohibited	RFO Action	RFO No Action	Requirement Routes to Take	Health Drivers and Effects
Engineered Nanomaterials (ENMs)	●			●	<p>NC REQUIREMENT: ROUTE 1: Declare Label Certification confirming the product is free from ENMs Compliance with UK REACH Regulations Material technical specification with ingredients list showing that the product is ENM free.</p> <p>ROUTE 2: Material technical specification with ingredients list showing that the product is ENM free.</p> <p>ROUTE 3: Manufacturer letter of assurance/confirmation that the product is ENM free.</p> <p>RFO REQUIREMENT: No action required for refurbishments.</p>	<p>HEALTH DRIVERS AND EFFECTS: ENMs can be either inorganic or organic substances, but the most prominent are metal oxides, namely, titania (TiO₂), silica (SiO₂), iron oxide (Fe₂O₃), zinc oxide (ZnO), and silver (Ag).</p> <p>When products containing ENMs are exposed to thermal fluctuations, building fires, wear and tear from normal/intensive use, washing and precipitation, ultraviolet (UV) light exposure, and mechanical stresses such as cutting, drilling, grinding and friction, the ENMs in the product start to disintegrate leading to possible release of the embedded nanomaterial. These releases particulate matter that may be inhaled or dermally absorbed by the skin.</p> <p>Due to their extremely small size and large surface-to-volume ratio, ENMs tend to be more biologically active than their larger counterparts and can have adverse biological effects such as cytotoxicity, DNA damage, lung inflammation and fibrosis and carcinogenicity.</p> <p>FOUND IN: Paints, coatings, thermoplastics, printer toners, furniture, cleaning products, packaging materials.</p>
Epichlorohydrin (ECH)		●		●	<p>NC REQUIREMENT: Prohibited</p> <p>ROUTE 1: Living Building Challenge Red List Free e.g. Declare Label Certification confirming LBC Red List Free ANSI/BIFMA e3 Furniture Sustainability Standard PLUS written confirmation from manufacturer of Epichlorohydrin free</p> <p>ROUTE 2: Material technical specification with ingredients list provided confirming the product is ECH free</p> <p>ROUTE 3: Manufacturer letter of assurance/confirmation that the product is ECH free</p> <p>RFO REQUIREMENT: No action required for refurbishments.</p>	<p>HEALTH DRIVERS AND EFFECTS: Epichlorohydrin (ECH) exposure is associated with increased cancer risk, high male and female reproductive health risks and as a high risk mutagen chemical.</p> <p>In addition, ECH has a high risk persistent bioaccumulative in the human system.</p> <p>FOUND IN: Tile installation products, grout, tile installation components (wet), thin sets and mortars.</p>
Facade and cladding – including terraces and balcony external finishes	●		●		<p>ROUTE 1: Responsibly sourced within the EU/UK Environment Product Declarations (EPDs) to be used where possible Meet or exceed Euroclass A2 (limited combustibility) classification. Non-combustible insulation Free from: Aluminium Composite Materials (ACM)</p>	
Fire protection and Flame retardant and products including flame retardants i.e. OSB	●		●		<p>ROUTE 1: Living Building Challenge Red List Free e.g. Declare Label Certification confirming LBC Red List Free Compliance with UK REACH Regulations Free from: Antimony, Isocyanate-Based Polyurethane (PUR and PU) and Polyisocyanurate (PIR), Nonylphenol, Vermiculite (unless asbestos free)</p> <p>ROUTE 2: Material technical specification with ingredients list provided confirming the product is free from: Antimony, Halogenated flame retardants (PBDE, TBBPA, HBCD, Deca-BDE, TCPP, TCEP, Dechlorane Plus, and other retardants with bromine or chlorine, Isocyanate-Based Polyurethane (PUR and PU) and Polyisocyanurate (PIR), Nonylphenol, Vermiculite (unless asbestos free)</p> <p>ROUTE 3: Manufacturer letter of assurance/confirmation that the product is free from the above chemicals</p>	

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Materials and Chemicals	NC Required	NC Prohibited	RFO Action	RFO No Action	Requirement Routes to Take	Health Drivers and Effects
Flooring and carpet	●			●	<p>NC REQUIREMENT: No permanent wall-to-wall carpeting is to be used; only removable rugs, removable carpet tiles (i.e. Magnetic fix) or hard surfaces. Should be inspected by Sustainability Champion</p> <p>ROUTE 1: Responsibly sourced within the EU/UK BES6001 Cradle-to-Cradle Certified™ 100% low VOC certification (see below in Glossary) Circular economy - repurposed, takeback scheme, easily removeable ie. carpet tiles or magnetic fix Living Building Challenge Red List Free e.g. Declare Label Certification confirming LBC Red List Free PLUS free from: Antimony, Isocyanate-Based Polyurethane (PUR and PU) and Polyisocyanurate (PIR), lead, mercury, Nonylphenol, Perfluorinated Compounds (PFCs), Phthalates, Polyvinyl Chloride (PVC) and Polyvinylidene Chloride (PVDC), Triclosan/Triclocaraban Compliance with UK REACH Regulations</p> <p>ROUTE 2: Material technical specification with ingredients list provided showing free from: Alkylphenols, Antimony, Bisphenol A (BPA), Halogenated flame retardants, Isocyanate-Based Polyurethane (PUR and PU) and Polyisocyanurate (PIR), Nonylphenol, Perfluorinated Compounds (PFCs), Triclosan/Triclocaraban 100% low VOC certification (see below in Glossary)</p> <p>ROUTE 3: Manufacturer letter of assurance/ confirmation that the product is free from the above chemicals 100% low VOC certification (see below in Glossary)</p> <p>RFO REQUIREMENT: No action required for refurbishments. See NC for requirements for replacement.</p>	
Formaldehyde (added) and Urea Formaldehyde		●		●	<p>NC REQUIREMENT: Prohibited</p> <p>ROUTE 1: Living Building Challenge Red List Free e.g. Declare Label Certification confirming LBC Red List Free Compliance with UK REACH Regulations Formaldehyde E1 class ANSI/BIFMA e3 Furniture Sustainability Standard PLUS written confirmation from manufacturer of Formaldehyde and Urea Formaldehyde free</p> <p>ROUTE 2: Material technical specification confirming Formaldehyde and Urea Formaldehyde free</p> <p>ROUTE 3: Manufacturer letter of assurance/ confirming Formaldehyde and Urea Formaldehyde free</p> <p>RFO REQUIREMENT: No action required for refurbishments.</p>	<p>HEALTH DRIVERS AND EFFECTS: Added formaldehyde and urea-formaldehyde exposure is associated with increased cancer risk and respiratory sensitivity as asthma can be triggered.</p> <p>In addition, these have a high risk persistent bioaccumulative in the human system.</p> <p>FOUND IN: Used in pressed-wood products (particleboard, plywood, and fibreboard), glues, adhesives, permanent-press fabrics, paper product coatings and certain insulation materials.</p>

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Materials and Chemicals	NC Required	NC Prohibited	RFO Action	RFO No Action	Requirement Routes to Take	Health Drivers and Effects
Furniture and furnishings	●			●	<p>NC REQUIREMENT: ROUTE 1: Sourced/manufactured in UK/EU Cradle-to-Cradle Certified™ Living Building Challenge Red List Free e.g. Declare Label Certification confirming LBC Red List Free Compliance with UK REACH Regulations 100% low VOC certification (see below in Glossary) Circular Economy – Salvaged, reused, repurposed, takeback schemes Plus free from: Polyurethane and polyisocyanurate foam free, Antimony, Engineered Nanomaterials (ENMs) and Triclosan/Triclocaraban</p> <p>ROUTE 2: Material technical specification with ingredients list provided confirming free from: Polyurethane and polyisocyanurate foam free, Antimony, Engineered Nanomaterials (ENMs), lead, Perfluorinated Compounds (PFCs), Triclosan/Triclocaraban 100% low VOC certification (see below in Glossary)</p> <p>ROUTE 3: Manufacturer letter of assurance/ confirming free from chemicals listed above. 100% low VOC certification (see below in Glossary)</p> <p>RFO REQUIREMENT: No action required for refurbishments.</p>	
Glass	●		●		<p>ROUTE 1: Responsibly sourced within the EU/UK BES6001 Cradle-to-Cradle Certified™ Environment Product Declarations (EPDs) to be used where possible</p> <p>ROUTE 2: ISO14001 plus written confirmation of processes in place to address modern slavery issues.</p>	
Halogenated flame retardants			●	●	<p>NC REQUIREMENT: Prohibited</p> <p>ROUTE 1: Living Building Challenge Red List Free e.g. Declare Label Certification confirming LBC Red List Free Compliance with UK REACH Regulations</p> <p>ROUTE 2: Material technical specification with ingredients list provided confirming Halogenated flame retardants (HRF) free</p> <p>ROUTE 3: Manufacturer letter of assurance/ confirming f Halogenated flame retardants (HFR) free</p> <p>Boron is not an HFR and is allowed.</p> <p>RFO REQUIREMENT: No action required for refurbishments</p>	<p>HEALTH DRIVERS AND EFFECTS: HFRs are persistent bioaccumulative toxins.</p> <p>FOUND IN: Used in furniture, window waterproofing membranes, doors and window frames and sidings, flooring, ceiling tiles, wall coverings, piping, electrical cables, conduits, junction boxes, sound and thermal insulation particularly extruded polystyrene (XPS) and expanded polystyrene (EPS) insulation.</p>

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Materials and Chemicals	NC Required	NC Prohibited	RFO Action	RFO No Action	Requirement Routes to Take	Health Drivers and Effects
Hexavalent chromium			●	●	<p>NC REQUIREMENT: Prohibited</p> <p>Water test at potable water outlets to detect the presence of Hexavalent Chromium. If this is more than 0.1 mg/L consideration should be given to the need for a water filter system at the point of delivery which is either a reverse osmosis or a kinetic degradation fluxion.</p> <p>ROUTE 1: Living Building Challenge Red List Free e.g. Declare Label Certification confirming LBC Red List Free Compliance with UK REACH Regulations ANSI/BIFMA e3 Furniture Sustainability Standard PLUS written confirmation from manufacturer of Hexavalent chromium free</p> <p>ROUTE 2: Material technical specification with ingredients list provided showing Hexavalent chromium free</p> <p>ROUTE 3: Manufacturer letter of assurance/ confirmation that the product is Hexavalent chromium free</p> <p>RFO REQUIREMENT:</p> <p>ROUTE 1: Potable water outlets to be tested for chromium. If this is more than 0.1 mg/L consideration should be given to the need for a water filter system at the point of delivery which is either a reverse osmosis or a kinetic degradation fluxion. In addition, carry out a hazardous materials survey to test for presence of Hexavalent chromium in materials that have the potential to contain it and are intended to remain in-situ. If Hexavalent chromium is detected in existing materials, remediation must be carried out accordingly.</p>	<p>HEALTH DRIVERS AND EFFECTS:</p> <p>Hexavalent chromium exposure occurs through breathing it in, ingesting it in food or water, or direct contact with the skin.</p> <p>Hexavalent chromium exposure can cause birth defects and can harm children's brain development, leading to learning and behavioural problems. This chemical is also associated with increased lung and nasal cancer risk, as well as high male and female reproductive health risks and kidney and liver damages.</p> <p>FOUND IN:</p> <p>Used in furniture, window, waterproofing membranes, doors, window frames and siding, flooring, ceiling tiles, wall coverings, piping, electrical cables, conduits, junction boxes, wood preservation, sound and thermal insulation, drinking water.</p>
Insulation	●		●		<p>ROUTE 1: Responsibly sourced within the EU/UK Environment Product Declarations (EPDs) to be used where possible BES6001 (Minimum Good) Cradle-to-Cradle Certified™ Living Building Challenge Red List Free e.g. Declare Label Certification confirming LBC Red List Free Plus free from: Antimony, Isocyanate-Based Polyurethane (PUR and PU) and Polyisocyanurate (PIR) 100% low VOC certification (see below in Glossary)</p> <p>ROUTE 2: Material technical specification with ingredients list provided confirming free from: Antimony, Formaldehyde and Urea Formaldehyde, Halogenated flame retardants, Isocyanate-Based Polyurethane (PUR and PU) and Polyisocyanurate (PIR) 100% low VOC certification (see below in Glossary)</p> <p>ROUTE 3: Manufacturer letter of assurance/ confirming free from chemicals listed above 100% low VOC certification (see below in Glossary)</p>	

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Materials and Chemicals	NC Required	NC Prohibited	RFO Action	RFO No Action	Requirement Routes to Take	Health Drivers and Effects
Isocyanate-Based Polyurethane (PUR and PU) and Polyisocyanurate (PIR)		●	●		<p>NC REQUIREMENT: Prohibited</p> <p>ROUTE 1: Declare label confirming that the product is free from PUR, PU and PIR</p> <p>ROUTE 2: Material technical specification with ingredients list provided showing that the product is PUR, PU and PIR free.</p> <p>ROUTE 3: Manufacturer letter of assurance confirming the product is PUR, PU and PIR free</p> <p>RFO REQUIREMENT:</p> <p>ROUTE 1: Fire specialist to carry out a preliminary assessment of the cladding as installed to verify the risk of a fire and provide recommend appropriate action for resolution. No action required if PUR, PU or PIR do not present a danger for fire safety or is in good state.</p> <p>The creation of a spreading fire on the outer surface of polyisocyanurate (PIR), polyurethane or phenolic insulation usually requires a significant external fire event. However, a preliminary assessment of the cladding as installed, checking both cavity barriers and gaps between insulation panels would help to determine how susceptible that particular building would be to smaller ignition sources and the necessary level of control required.</p>	<p>HEALTH DRIVERS AND EFFECTS: Isocyanate can cause or trigger occupational asthma.</p> <p>In addition, PU, PU and PIR are highly flammable and shall be treated with flame retardant (see prohibition of halogenated flame retardants).</p> <p>FOUND IN: Wood dust, latex (powdered natural rubber latex gloves), polyurethane paints, coatings, foams, insulation, interior finishes, glues, resins, flooring, carpets, plywood, OSB, sanitaryware components.</p>
Lead (Pb)		●	●		<p>NC REQUIREMENT: Prohibited</p> <p>ROUTE 1: Living Building Challenge Red List Free e.g. Declare Label Certification confirming LBC Red List Free Compliance with UK REACH Regulations Cradle-to-Cradle Certified™ PLUS written confirmation from manufacturer of lead free ANSI/BIFMA e3 Furniture Sustainability Standard PLUS written confirmation from manufacturer of lead free</p> <p>ROUTE 2: Material technical specification with ingredients list provided confirming that the product is Lead free</p> <p>ROUTE 3: Manufacturer letter of assurance confirming that the product is Lead free</p> <p>RFO REQUIREMENT:</p> <p>ROUTE 1: Carry out a hazardous material survey report to test for presence of Lead in materials that have the potential to contain it and are intended to remain in-situ and take advice from specialist of actions needed to be taken to remediate. Install lead look products to replace existing.</p>	<p>HEALTH DRIVERS AND EFFECTS: Lead is a high risk persistent bioaccumulative and developmental toxicant. This can harm brain development in children, leading to learning and behavioural problems.</p> <p>In addition, lead increases cancer risk and affects reproductive health for both men and women.</p> <p>FOUND IN: Lead can be found in indoor paints, surface coatings, potable water pipes, furnishings and finishes, flooring, carpet (tile and sheet), roofing membranes and components, resilient flooring, carpet backing and components, adhesives, tiles, thermostats, fire alarms, meters and sensors.</p>

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Materials and Chemicals	NC Required	NC Prohibited	RFO Action	RFO No Action	Requirement Routes to Take	Health Drivers and Effects
Machine Made Mineral Fibres (MMMMF)	●		●		<p>NC REQUIREMENT: ROUTE 1: For use of non-fibrous materials, comply with HSE guidelines in installation: http://www.hse.gov.uk/foi/internalops/ocs/200-299/oc267_2.htm</p> <p>RFO REQUIREMENT: ROUTE 1: Carry out a hazardous materials survey to test for presence of MMMF in materials that have the potential to contain it and are intended to remain in-situ. Take advice from hazardous materials survey and specialist to identify if materials should be encapsulated or removed. When all actions complete, request specialist sign off.</p>	<p>HEALTH DRIVERS AND EFFECTS: Precautions must be taken when working with materials and products containing MMMF. MMMF are fibres that have a diameter of 3 microns or less or a length of 200 microns or less.</p> <p>The main health effect of MMMF are respiratory system irritations, which can lead to the development of asthma and bronchitis. The exposure to these fibres is also prone to dermatitis.</p> <p>In addition, Machine Made Mineral Fibres may have the potential to lead to the development of lung cancer.</p> <p>FOUND IN: Mineral wools (glass wool, rock wool) for thermal and acoustic insulation, structural fire protection, insulation boards and blankets of refractory products (ceramic fibres), cement and plastic products.</p>
Mercury (Hg)		●	●		<p>NC REQUIREMENT: Prohibited</p> <p>ROUTE 1: Living Building Challenge Red List Free e.g. Declare Label Certification confirming LBC Red List Free Compliance with UK REACH regulations Cradle-to-Cradle Certified™ PLUS written confirmation from manufacturer of Mercury free ANSI/BIFMA e3 Furniture Sustainability Standard PLUS written confirmation from manufacturer of Mercury free</p> <p>ROUTE 2: Material technical specification with ingredients list provided showing that the product is mercury free</p> <p>ROUTE 3: Manufacturer letter of assurance confirming the materials is mercury free</p> <p>RFO REQUIREMENT: ROUTE 1: Carry out a hazardous materials survey to test for presence of Mercury in materials that have the potential to contain it and are intended to remain in-situ. If Mercury is detected in existing materials, remediation must be carried out accordingly.</p>	<p>HEALTH DRIVERS AND EFFECTS: Mercury is a high risk persistent bioaccumulative and developmental toxicant. This can harm brain development in children, leading to learning and behavioural problems.</p> <p>In addition, mercury increases cancer risk and affects reproductive health for both men and women.</p> <p>FOUND IN: Mercury can be found in flooring, carpet (tile and sheet), carpet backing and components, tiles, thermostats, fire alarms, meters and sensors, acoustical ceilings.</p>
Nonylphenol (NP)		●	●		<p>NC REQUIREMENT: Prohibited</p> <p>ROUTE 1: Declare Label Certification confirming free from Nonylphenol Compliance with UK REACH Regulations Cradle-to-Cradle Certified™ PLUS written confirmation from manufacturer of nonylphenol free ANSI/BIFMA e3 Furniture Sustainability Standard PLUS written confirmation from manufacturer of nonylphenol free</p> <p>ROUTE 2: Material technical specification with ingredients list provided showing that the product is nonylphenol free</p> <p>ROUTE 3: Manufacturer letter of assurance confirming that the product is nonylphenol free</p> <p>RFO REQUIREMENT: No action required for refurbishments except where existing turf is found - see requirements for artificial turf above.</p>	<p>HEALTH DRIVERS AND EFFECTS: Nonylphenol has a high risk persistent bioaccumulative and developmental toxicant. This can harm brain development in children, leading to learning and behavioural problems.</p> <p>In addition, this chemical is an endocrine disruptor and affect the body's hormonal systems. Nonylphenol can also affects male and female reproductive health.</p> <p>FOUND IN: Ceilings, acoustical ceilings, flooring, composite wood, fluid-applied flooring systems, sanitary ware, interior paint, high performance coatings, standard paints, OSB and relevant components.</p> <p>The major use of nonylphenol is in the production of alkyl phenol ethoxylate surfactants (see alkylphenol).</p>
Packaging	●		●		<p>ROUTE 1: Reduce where possible Circular Economy - Takeback schemes</p>	

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Materials and Chemicals	NC Required	NC Prohibited	RFO Action	RFO No Action	Requirement Routes to Take	Health Drivers and Effects
Paints	●		●		<p>ROUTE 1: Living Building Challenge Red List Free e.g. Declare Label Certification confirming LBC Red List Free Plus free from Antimony, Engineered Nanomaterials (ENMs), Isocyanate-Based Polyurethane (PUR and PU) and Polyisocyanurate (PIR), lead, Nonylphenol, Vermiculite (unless asbestos free) Compliance with UK REACH regulations BES6001 Cradle-to-Cradle Certified™ Health Product Declaration 100% low VOC certification (see below in Glossary)</p> <p>ROUTE 2: Material technical specification with ingredients list showing free from: Alkylphenols, antimony, Engineered Nanomaterials (ENMs), Isocyanate-Based Polyurethane (PUR and PU) and Polyisocyanurate (PIR), lead, Nonylphenol, Phthalates, Vermiculite (unless asbestos free) 100% low VOC certification (see below in Glossary)</p> <p>ROUTE 3: Manufacturer letter of assurance/confirmation none of the above chemicals present. 100% low VOC certification (see below in Glossary)</p>	
Perfluorinated Compounds (PFCs)		●	●		<p>NC REQUIREMENT: Prohibited</p> <p>ROUTE 1: Living Building Challenge Red List Free e.g. Declare Label Certification confirming LBC Red List Free Compliance with UK REACH Regulations Cradle-to-Cradle Certified™ PLUS written confirmation from manufacturer of PFC free</p> <p>ROUTE 2: Material technical specification with ingredients list provided showing that the product is PFC free</p> <p>ROUTE 3: Manufacturer letter of assurance confirming that the product is PFC free</p> <p>RFO REQUIREMENT: No action required for refurbishments.</p>	<p>HEALTH DRIVERS AND EFFECTS: Perfluorinated Compounds (PFCs) are high risk environmental bioaccumulative and persistent toxicants. Many of them are greenhouse gases (GHG), but are not stored in human body fat (toxic bioaccumulation).</p> <p>Studies show PFCs can cause endocrine disruption, immune function issues, liver and pancreas damage, and can also affects male and female reproductive health. In addition, these are considered as developmental toxicant, that can harm brain development in children, leading to learning and behavioural problems.</p> <p>FOUND IN: Furniture and furnishing, flooring, carpet (tile and sheet), carpet treatments.</p>

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Materials and Chemicals	NC Required	NC Prohibited	RFO Action	RFO No Action	Requirement Routes to Take	Health Drivers and Effects
Pesticides & herbicides & biocides			●	●	<p>NC REQUIREMENT: The use of pesticides, herbicides, vector control products (i.e. rodenticide, mosquito control), petrochemical fertilisers and pentachlorophenol biocides is prohibited. In addition, an integrated pest management (IPM) shall be prepared by the building's managers.</p> <p>ROUTE 1: Living Building Challenge Red List Free e.g. Declare Label Certification confirming LBC Red List Free Compliance with UK REACH Regulations Compliance with UK Plant Protection Products (Sustainable Use) Regulations 2012 and inclusion in the building user guide or FM's contract.</p> <p>ROUTE 2: Material technical specification with ingredients list provided confirming that the product is free from Alkylphenols and Chlorobenzenes.</p> <p>ROUTE 3: Manufacturer letter of assurance/ confirmation that the product is free from alkylphenols and Chlorobenzenes</p> <p>RFO REQUIREMENT: The use of pesticides, herbicides, vector control products (i.e. rodenticide, mosquito control), petrochemical fertilisers and pentachlorophenol biocides are prohibited. An integrated pest management (IPM) shall be prepared by the building's managers.</p> <p>ROUTE 1: Compliance with UK Plant Protection Products (Sustainable Use) Regulations 2012 and inclusion in the building user guide or FM's contract.</p>	<p>HEALTH DRIVERS AND EFFECTS: Pesticides, herbicides and biocides are recognised as high risk persistent toxicants in the environmental and human system.</p> <p>Studies show these chemicals are endocrine disruption, developmental toxicant, that can harm brain development in children, leading to learning and behavioural problems. In addition these can cause high risk of cancer and affects male and female reproductive health.</p> <p>FOUND IN: Plants, landscaping and grass treatments and to avoid pests in and around buildings.</p>
Phthalate (Plasticizers) incl. DEHP (di-ethylhexyl phthalate)			●	●	<p>NC REQUIREMENT: Prohibited</p> <p>ROUTE 1: Living Building Challenge Red List Free e.g. Declare Label Certification confirming LBC Red List Free Compliance with UK REACH Regulations Cradle-to-Cradle Certified™ PLUS written confirmation from manufacturer of Phthalates free ANSI/BIFMA e3 Furniture Sustainability Standard PLUS written confirmation from manufacturer of Phthalates free</p> <p>ROUTE 2: Material technical specification with ingredients list provided confirming that the product is Phthalates free</p> <p>ROUTE 3: Manufacturer letter of assurance/ confirmation that the product is Phthalates free</p> <p>RFO REQUIREMENT: No action required for refurbishments.</p>	<p>HEALTH DRIVERS AND EFFECTS: Despite their short biologic half-lives, which makes our bodies excrete them quickly, phthalates are so ubiquitous that there is virtually constant exposure. Dust and other particles of phthalate can be ingested inhaled, or dermally-absorbed.</p> <p>Phthalates are endocrine disrupting chemicals and affect the body's hormonal systems. These have been found to be associated with a number of adverse health outcomes, including, but not limited to: asthma and allergies, male and female reproductive health, cardiometabolic health, and neurological and behavioural conditions.</p> <p>FOUND IN: Paints, coatings, gelling agents, film formers, stabilizers, dispersants, lubricants, binders, emulsifying agents, wall covering and vinyl flooring, PVC materials, furniture.</p>
Plasterboard	●		●		<p>ROUTE 1: Responsibly sourced within the EU/UK Environment Product Declarations (EPDs) to be used where possible BES6001 minimum very good Cradle-to-Cradle Certified™</p>	

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Materials and Chemicals	NC Required	NC Prohibited	RFO Action	RFO No Action	Requirement Routes to Take	Health Drivers and Effects
Plastic lumber	●			●	<p>NC REQUIREMENTS: All newly installed plastic lumber materials to be made from recycled thermoplastics such as high-, medium- or low-density polyethylene (HDPE, MDPE or LDPE).</p> <p>At the same time, plastic lumber should not contain: wood-plastic composites, multiple commingled recycled consumer plastics, fiberglass (for non-structural applications).</p> <p>ROUTE 1: Living Building Challenge Red List Free e.g. Declare Label Certification confirming LBC Red List Free Compliance with UK REACH Regulations Cradle-to-Cradle Certified™ PLUS written confirmation from manufacturer of PVC, PVDC and CPVC free</p> <p>ROUTE 2: Material technical specification with ingredients list provided confirming that the product is free from PVC, MDPE or LDPE materials.</p> <p>ROUTE 3: Manufacturer letter of assurance/confirmation that the materials are made from HDPE, MDPE or LDPE materials</p> <p>RFO REQUIREMENT: No action required for refurbishments</p>	<p>HEALTH DRIVERS AND EFFECTS: wood-plastic composites, multiple commingled recycled consumer plastics, fiberglass (for non-structural applications) can contain: a range of thermoplastics (plastic polymer) such as polyethylene, that are potentially hazardous for human's health.</p> <p>These plastic polymers do not break down easily with natural processes and are considered a persistent chemical. These could also course eye and skins irritations.</p> <p>FOUND IN: Water pipes, PVC products.</p>
Polychlorinated Biphenyls (PCBs) & Polychlorinated Terphenyls (PCTs)		●	●		<p>NC REQUIREMENT: Prohibited</p> <p>ROUTE 1: Living Building Challenge Red List Free e.g. Declare Label Certification confirming LBC Red List Free Compliance with UK REACH Regulations</p> <p>ROUTE 2: Material technical specification with ingredients list provided confirming that the product is free from PCBs and PCTs</p> <p>ROUTE 3: Manufacturer letter of assurance/ confirmation that the product is free from PCBs and PCTs</p> <p>RFO REQUIREMENT: ROUTE 1: Carry out a hazardous materials survey. If PCBs or PCTs are detected in existing materials, remediation must be carried out accordingly.</p>	<p>HEALTH DRIVERS AND EFFECTS: Exposure to Polychlorinated Biphenyls (PCBs) and Polychlorinated Terphenyls (PCTs) is associated with increased cancer risk and developmental toxicity, which can harm brain development in children, leading to learning and behavioural problems..</p> <p>In addition, PCBs and PCTs are a high risk persistent bioaccumulative toxicant which get stored in the human system and can act as an endocrine-disruptor chemical.</p> <p>FOUND IN: Polychlorinated Biphenyls (PCBs) & Polychlorinated Terphenyls (PCTs) were widely used as heat stabilisers. These can still be found in: refrigerants, electrical equipment (i.e. transformers, switchgear, capacitors), stain-resistant fabrics and fire-fighting foam</p>
Polyurethane (PUR) and Polyisocyanurate Foam (PIR)		●	●		<p>NC REQUIREMENT: Prohibited</p> <p>ROUTE 1: Declare Label Certification confirming that the product is free from Polyurethane (PUR) and Polyisocyanurate Foam (PIR) Compliance with UK REACH Regulations</p> <p>ROUTE 2: Material technical specification with ingredients list provided confirming that the product is free from PUR and PIR</p> <p>ROUTE 3: Manufacturer letter of assurance/ confirmation that the product is free from PUR and PIR</p> <p>RFO REQUIREMENT: ROUTE 1: Fire specialist to carry out a preliminary assessment and recommend actions to pursue if existing polyurethane and polyisocyanurate foam present a danger for fire safety.</p>	<p>HEALTH DRIVERS AND EFFECTS: Exposure to Polyurethane and Polyisocyanurate Foam lead to a potential risk associated with increased cancer risk.</p> <p>FOUND IN: Polyurethane and polyisocyanurate foam are used in upholstery padding, coatings, adhesives, and insulating material.</p>

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Materials and Chemicals	NC Required	NC Prohibited	RFO Action	RFO No Action	Requirement Routes to Take	Health Drivers and Effects
<p>Polyvinyl Chloride (PVC) and Polyvinylidene Chloride (PVDC)</p> <p>PVC products i.e. Pipes and plumbing equipment</p>		●	●		<p>NC REQUIREMENTS: Prohibited Consider the use of polyethylene (HDPE, MDPE or LDPE) products.</p> <p>ROUTE 1: Living Building Challenge Red List Free e.g. Declare Label Certification confirming LBC Red List Free BES6001 Cradle-to-Cradle Certified™ PLUS written confirmation from manufacturer that the product is free from PVC, PVDC, CPVC and phthalates</p> <p>ROUTE 2: Material technical specification with ingredients list provided showing that the product is PVC, PVDC, CPVC and phthalates free</p> <p>ROUTE 3: Manufacturer letter of assurance/confirmation none of the above chemicals present.</p> <p>RFO REQUIREMENT: No action required for refurbishments.</p>	<p>HEALTH DRIVERS AND EFFECTS: PVC is a persistent organic pollutant source material and PVC often contains other toxic ingredients including cadmium, lead, phthalates and short chain chlorinated paraffins (SCCPS).</p> <p>PVC does not break down easily with natural processes and it is considered a persistent chemical.</p> <p>Exposure to PVC in children can harm brain development, leading to learning and behavioural problems. In adults, this chemical can trigger or worsen asthma and allergic reactions. this is also considered to be an organ and systemic toxicant.</p> <p>FOUND IN: Carpet (tile and sheet), carpet backing, roofing membranes, resilient flooring, flooring, ceilings, acoustical ceilings, roofing membrane components, wall protection and other relevant components, pipes, electric cables, un-plasticised PVC for construction, commercial signage products, plasticisers, flooring and vinyl records.</p>
<p>Raised access floors</p>	●		●		<p>ROUTE 1: Circular economy - repurposed, takeback scheme Free from Antimony</p> <p>ROUTE 2: Responsibly sourced within the EU/UK Environment Product Declarations (EPDs) to be used where possible Free from Antimony</p>	
<p>Refrigerants</p>	●		●		<p>NC REQUIREMENT: All newly installed building services must have refrigerants with a Global Warming Potential (GWP) of less than ten, and zero Ozone Depleting Potential (ODP).The direct effect life cycle CO₂ equivalent emissions (DEL_C) of ≤100 CO₂-eq/kW. For systems which provide cooling and heating, the worst performing output based on the lower of kW cooling output and kW heating output is used to complete the calculation.</p> <p>ROUTE 1: DEL_C calculation ≤100 CO₂-eq/kW GWP less than ten and zero ODP Living Building Challenge Red List Free e.g. Declare Label Certification confirming LBC Red List Free PLUS free from: Halons or carbon tetrachloride Compliance with UK REACH Regulations</p> <p>ROUTE 2: Material technical specification with ingredients list provided showing that the product is free from Chlorofluorocarbons (CFCs) & Hydrochlorofluorocarbons (HCFCs), Halons, bromochloromethane (CBM) or carbon tetrachloride</p> <p>ROUTE 3: Manufacturer letter of assurance/confirmation none of the above chemicals present.</p> <p>RFO REQUIREMENT: Retrofit or replace building services when these are at the end of their useful life. All newly installed building services must meet NC requirements.</p>	

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Materials and Chemicals	NC Required	NC Prohibited	RFO Action	RFO No Action	Requirement Routes to Take	Health Drivers and Effects
Roofing	●		●		<p>ROUTE 1: Urban heat island effect mitigation - use of pale, reflective materials on non-vegetated roof and hardscaping surfaces BES6001 (minimum Very Good) Cradle-to-Cradle Certified™ Health Product Declaration Living Building Challenge Red List Free e.g. Declare Label Certification confirming LBC Red List Free plus free from Antimony Compliance with UK REACH Regulations Responsibly sourced within the EU/UK Environment Product Declarations (EPDs) to be used where possible</p> <p>ROUTE 2: Material technical specification with ingredients list provided showing that the product is free from: Antimony, lead, Polyvinyl Chloride (PVC) and Polyvinylidene Chloride (PVDC)</p> <p>ROUTE 3: Manufacturer letter of assurance/confirmation none of the above chemicals present.</p>	
Rubber coated products	●		●		<p>ROUTE 1: Living Building Challenge Red List Free e.g. Declare Label Certification confirming LBC Red List Free Compliance with UK REACH Regulations</p> <p>ROUTE 2: Material technical specification with ingredients list provided showing that the product is free from: Chloroprene, Chlorinated Polyethylene (CPE), chlorinated polyvinylchloride (CPVC), chlorosulfonated polyethylene (CSPE) and polychloroprene rubber (CR)</p> <p>ROUTE 3: Manufacturer letter of assurance/confirmation none of the above chemicals present.</p>	
Sanitary ware	●		●		<p>ROUTE 1: Responsibly sourced within the EU/UK Environment Product Declarations (EPDs) to be used where possible Declare Label Certification confirming that the product is free from: Antimony, Isocyanate-Based Polyurethane (PUR and PU) and Polyisocyanurate (PIR), Nonylphenol Compliance with UK REACH Regulations</p> <p>ROUTE 2: Material technical specification with ingredients list provided showing that the product is free from: Antimony, Isocyanate-Based Polyurethane (PUR and PU) and Polyisocyanurate (PIR), Nonylphenol</p> <p>ROUTE 3: Manufacturer letter of assurance/confirmation none of the above chemicals present.</p>	

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Materials and Chemicals	NC Required	NC Prohibited	RFO Action	RFO No Action	Requirement Routes to Take	Health Drivers and Effects
Silica dust (RCS)	●		●		<p>NC REQUIREMENT: Silica dust, known as Respirable Crystalline Silica (RCS), must be controlled during construction, fit-out, demolition and repairs.</p> <p>HSE guidance on the control of exposure to silica dust in installation shall be followed: http://www.hse.gov.uk/lung-disease/silicosis.htm</p> <p>RFO REQUIREMENT: Silica dust, known as Respirable Crystalline Silica (RCS), must be controlled during construction, fit-out, demolition and repairs and HSE guidance on the control of exposure to silica dust is followed.</p> <p>ROUTE 1: Carry out hazardous materials survey report AND Contractor health & safety and pollution management plan during works. HSE guidance on the control of exposure to silica dust shall be followed: http://www.hse.gov.uk/lung-disease/silicosis.htm</p>	<p>HEALTH DRIVERS AND EFFECTS: Constant or long term exposure to silica dust can lead to silicosis, chronic obstructive pulmonary diseases and lung cancer. All of these causes chronic and permanent disability or early death.</p> <p>FOUND IN: Concrete, stone, brick, mortar, ceramics, brick and tiles contain silica.</p> <p>These materials create dust when they are mined, grinded, cut, sanded, carved etc. which lead to the health effects highlighted above.</p>
Stabilisers and batteries	●		●		<p>ROUTE 1: Living Building Challenge Red List Free e.g. Declare Label Certification confirming LBC Red List Free Compliance with UK REACH Regulations</p> <p>ROUTE 2: Material technical specification with ingredients list provided showing that the product is Cadmium free</p> <p>ROUTE 3: Manufacturer letter of assurance/confirmation that the product is Cadmium free</p>	
Steel - Reinforcing	●		●		<p>ROUTE 1: Responsibly sourced within the EU/UK Environment Product Declarations (EPDs) to be used where possible BES6001 Minimum Good or Eco-reinforcement Responsible Sourcing Standard PLUS written confirmation of manufacturing source</p>	
Steel - Structural	●		●		<p>ROUTE 1: Responsibly sourced within the EU/UK Environment Product Declarations (EPDs) to be used where possible ISO 14001 plus Written confirmation of extraction source PLUS written confirmation of processes in place to address modern slavery issues. BES6001 (minimum Good) Living Building Challenge Red List Free e.g. Declare Label Certification confirming LBC Red List Free Compliance with UK REACH Regulations</p> <p>ROUTE 2: Material technical specification with ingredients list provided showing that the product is Alkylphenols free PLUS written confirmation of extraction source plus written confirmation of processes in place to address modern slavery issues.</p> <p>ROUTE 3: Manufacturer letter of assurance/confirmation that the product is Alkylphenols free PLUS written confirmation of extraction source plus written confirmation of processes in place to address modern slavery issues.</p>	

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Materials and Chemicals	NC Required	NC Prohibited	RFO Action	RFO No Action	Requirement Routes to Take	Health Drivers and Effects
Stone and Stone Composites	●		●		<p>ROUTE 1: Responsibly sourced within the EU/UK Environment Product Declarations (EPDs) to be used where possible BES6001 Very Good Cradle-to-Cradle Certified™ Ethical Stone Register (minimum level Verification)</p> <p>ROUTE 2: Written confirmation of manufacture and extraction source plus written confirmation of processes in place to address modern slavery issues. Provide written confirmation to the BL sustainability lead prior to purchasing.</p>	
Triclosan and Triclocaraban		●	●		<p>NC REQUIREMENT: Prohibited in installed materials and during construction (cleaning process). Include requirement in the building user guide or FM's contract.</p> <p>ROUTE 1: Declare Label Certification confirming that the product is Triclosan/Triclocaraban free Compliance with UK REACH Regulations</p> <p>ROUTE 2: Material technical specification with ingredients list provided showing that the product is free from Triclosan/Triclocaraban</p> <p>ROUTE 3: Manufacturer letter of assurance/ confirmation that the product is free from Triclosan/Triclocaraban</p> <p>RFO REQUIREMENT: Cleaning products used in existing buildings shall not contain Triclosan and or Triclocaraban</p> <p>ROUTE 1: Include requirement in the building user guide or FM's contract</p>	<p>HEALTH DRIVERS AND EFFECTS: Despite the quickly metabolization, antimicrobials are so ubiquitous that there is virtually constant exposure to these chemicals through ingestion or dermal absorption.</p> <p>Triclosan/Triclocaraban can contribute to antibiotic resistance and antibiotic cross-resistance, increasing the difficulty to control bacteria. Triclosan exposure may also increase allergen sensitivity and exacerbate asthma and allergic symptoms and act as an endocrine-disruptor chemical.</p> <p>FOUND IN: Cleaning products, disinfectants, hand sanitisers, paints, floorings, furnishings, countertops and other touchable surfaces.</p>
Timber	●		●		<p>ROUTE 1: FSC or PEFC certified Grown in Britain licensed timber</p> <p>ROUTE 2: FSC or PEFC certified timber sourced within the EU</p> <p>Validity of the relevant certification can be checked here: https://info.fsc.org/certificate.php https://www.pefc.org/find-certified</p>	
Vermiculite (with asbestos)		●	●		<p>NC REQUIREMENT: Vermiculite is prohibited unless (asbestos) fibre-free.</p> <p>ROUTE 1: Living Building Challenge Red List Free e.g. Declare Label Certification confirming LBC Red List Free Compliance with UK REACH Regulations</p> <p>ROUTE 2: Material technical specification with ingredients list provided showing that the vermiculite is asbestos free.</p> <p>ROUTE 3: Manufacturer letter of assurance/confirmation that the vermiculite is asbestos free</p> <p>RFO REQUIREMENT: ROUTE 1: Carry out a hazardous materials survey to test for presence of Asbestos in Vermiculite in materials that have the potential to contain it and are intended to remain in-situ. If Asbestos in Vermiculite is detected in existing materials, remediation must be carried out accordingly.</p>	<p>HEALTH DRIVERS AND EFFECTS: Exposure to fibre-containing can lead to chronic lung diseases such as asbestosis, mesothelioma and lung cancer. All of these causes chronic and permanent disability or early death.</p> <p>FOUND IN: Insulation, light-weight concrete, fire protection materials, paints and other coatings.</p>

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Materials and Chemicals	NC Required	NC Prohibited	RFO Action	RFO No Action	Requirement Routes to Take	Health Drivers and Effects
Wall coverings	●		●		<p>ROUTE 1: Living Building Challenge Red List Free e.g. Declare Label Certification confirming LBC Red List Free Compliance with UK REACH Regulations</p> <p>ROUTE 2: Material technical specification with ingredients list provided showing that the product is free from: Halogenated flame retardants and Phthalates</p> <p>ROUTE 3: Manufacturer letter of assurance/confirmation none of the above chemicals present.</p>	
Wall Protection and Signage	●		●		<p>ROUTE 1: Living Building Challenge Red List Free e.g. Declare Label Certification confirming LBC Red List Free Compliance with UK REACH Regulations Circular economy - Takeback scheme, Recyclable</p> <p>ROUTE 2: Material technical specification with ingredients list provided showing that the product is free from PVC</p> <p>ROUTE 3: Manufacturer letter of assurance/confirmation that the produce is free from PVC</p>	
Wood treatments containing: Creosote, Arsenic or Pentachlorophenol		●	●		<p>NC REQUIREMENT: Prohibited</p> <p>ROUTE 1: Living Building Challenge Red List Free e.g. Declare Label Certification confirming LBC Red List Free Compliance with UK REACH Regulations</p> <p>ROUTE 2: Material technical specification with ingredients list provided showing that the product is Creosote, Arsenic and/or Pentachlorophenol-free</p> <p>ROUTE 3: Manufacturer letter of assurance/confirmation that the product is Creosote, Arsenic and/or Pentachlorophenol-free</p> <p>RFO REQUIREMENT:</p> <p>ROUTE 1: Carry out a hazardous materials survey to test for presence of Creosote, Arsenic or Pentachlorophenol in materials that have the potential to contain it and are intended to remain in-situ. If Creosote, Arsenic or Pentachlorophenol are detected in existing materials, remediation must be carried out accordingly.</p>	<p>HEALTH DRIVERS AND EFFECTS:</p> <p>Exposure to arsenic compounds can lead to cancer. In children can harm brain development, leading to learning and behavioural problems. In addition, these are a high risk persistent bioaccumulative toxicant which get stored in the human system and can act as an endocrine-disruptor chemical.</p> <p>Exposure to creosote is associated with increased cancer risk and reproductive health risks. This substance is also considered a persistent chemical that can lead to gene mutation.</p> <p>Pentachlorophenol is considered a persistent bioaccumulative toxicant leading to cancer, reproductive health risks and endocrine disruption.</p> <p>FOUND IN: Treated wood products.</p>
Wood products including pressed-wood particleboard, plywood, fibreboard and treated wood	●		●		<p>ROUTE 1: Living Building Challenge Red List Free e.g. Declare Label Certification confirming LBC Red List Free plus free from: Isocyanate-Based Polyurethane (PUR and PU) and Polyisocyanurate (PIR) and Nonylphenol Compliance with UK REACH Regulations Formaldehyde E1 class</p> <p>ROUTE 2: Material technical specification with ingredients list provided showing that the product is free from Formaldehyde and Urea Formaldehyde, Isocyanate-Based Polyurethane (PUR and PU) and Polyisocyanurate (PIR), Nonylphenol, Creosote, Arsenic, Pentachlorophenol</p> <p>ROUTE 2: Manufacturer letter of assurance/confirmation none of the above chemicals present.</p>	

Glossary

Certification/Classification	Additional Information
Cradle-to-Cradle Certified™	Cradle-to-Cradle Certified™ (C2C) requires products to declare that C2C “banned list chemicals” have not been intentionally added at concentrations >0.1% (>1000 ppm). As the C2C “banned list” covers many of the chemicals listed in our Material Schedule with ingredient transparency readily available, this is a suitably aligned certification scheme. However, the C2C threshold is >1000 ppm, and as such we still require confirmation by the manufacturer or supplier that a product fully complies with our requirements.
ANSI/BIFMA e3 Furniture Sustainability Standard	Similarly to C2C, ANSI/BIFMA e3 Furniture Sustainability Standard and ANSI/BIFMA e3 Furniture Sustainability Standard Annex B - Chemicals of Concern List (Normative) suggest threshold for banned materials and chemicals is either 100ppm or 1,000 ppm according to the chemical. Due to this we still require confirmation by the manufacturer or supplier that a product fully complies with our requirements.
Environmental Products Declarations (EPD)	<p>Environmental Products Declaration certification is a standardised procedure for quantifying the life cycle environmental impact of a product or system, and verified in accordance with the International Standard ISO 14025. There are sector EPDs that apply to a range of products produced by a company, or product specific EPDs are available, which are more accurate. EPDs support environmental certification programs including BREEAM and LEED.</p> <p>EDPs (either sector or product specific) for materials and products are required as a minimum for: Acoustic and thermal insulation Concrete Steel</p> <p>EPDs for other building materials are encouraged.</p> <p>EPD must be issued or registered by an ISO 14025 compliant programme organisation. For products covered by the Construction Product Regulations, the EPD must have been generated using product category rules based on either BS EN 15804 or ISO 21930.</p>
Health Product Declaration® (HPDs)	<p>Health Product Declaration® Collaborative is a standardised specification for the accurate, robust and consistent disclosure of ingredients of concern and associated health information for products used in the built environment. HPDs support programs of the International Living Future Institute, Cradle-to-Cradle Product Innovation Institute, Clean Production Action, BIFMA, LEED, WELL™ etc.</p> <p>British Land requires that HPDs are reviewed for materials and products including but not limited to: - Acoustic and thermal insulation within the water proofing membrane - Finishes and furnishings* - Interior paints and varnishes, adhesives and coatings.</p> <p>HPDs for other building materials are encouraged.</p> <p>https://hpdrepository.hpd-collaborative.org/Pages/Results.aspx#</p>
Ingredient Transparency	<p>To understand the material ingredients of a product we encourage procurement of products that disclose their ingredients, and avoid toxic substances or chemicals of concern.</p> <p>We recognise the following standards to demonstrate robust ingredient labelling: - Declare label. - Health Product Declaration (HPD) certification. - Cradle-to-Cradle™ Material Health Certified with a V2 Gold or Platinum or V3 Bronze, Silver, Gold or Platinum Material Health Score. - Global Green Tag Standard v4.0 certified. - Greenscreen certified.</p>
Low VOC certifications	<ul style="list-style-type: none"> - California Department of Public Health (CDPH) Standard Method v.1.1-2010 - Floorscore - Global Green Tag - OEKO-TEX-GECA BIM v2.0-2017 - GreenGuard Gold - Formaldehyde E1 class-Blue Angel (Blauer Engel) - Natureplus - MAS Certified Green© - GUT Carpet standard-Indoor Air Comfort - Gold Certification - M1 Emission Class for Building Materials - CRI Green Label Plus

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Certification/Classification	Additional Information
Finishes & Furnishing	Finishes as defined by the National Building Specification. Furnishings include but are not limited to filing cabinets, desks, drawer pedestals, work surfaces, tables, vertical panels, privacy screens, panel fabrics, cubicle curtains, window coverings, chairs, sofas, other textiles etc.
Installation precautions	<p>Ensure all wet materials such as adhesives, wood preservatives and finishes, sealants, glazing compounds, paints and joint filler are installed and allowed to fully cure, prior to installation of absorptive materials.</p> <p>Sustainability Champion to attend site inspections as appropriate according to the duration of the works on site and deliver evidence to British Land Sustainability Manager.</p>
Storage precautions	<p>Transport, store and protect absorbent materials, such as but not limited to carpets, upholstery, furnishings, fabric wall covering, acoustic ceiling panels, and insulation in original packaging or sealed polyethylene sheeting until time of installation.</p> <p>Sustainability Champion to attend site inspections as appropriate according to the duration of the works on site and deliver evidence to British Land Sustainability Manager.</p>
Sustainability Champion	<p>A Sustainability Champion shall be appointed to ensure consistency and compliance with British Land Material Schedule across all projects.</p> <p>The Sustainability Champion shall report the required evidence to British Land Sustainability Manager and raise any concerns on the specified materials before these are procured, shall these not respond to the requirements in this schedule.</p>
Urban Heat Island mitigation	<p>It is recommended that pale, reflective materials are used on non-vegetated roof and hardscaping surfaces to help mitigate the urban heat island effect.</p> <p>Sustainability Champion to attend site inspections as appropriate according to the duration of the works on site and deliver evidence to British Land Sustainability Manager.</p>