

TILLEY & BARRETT



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SOLVING COMPLEX CHALLENGES SINCE 1992

Toureen Group 

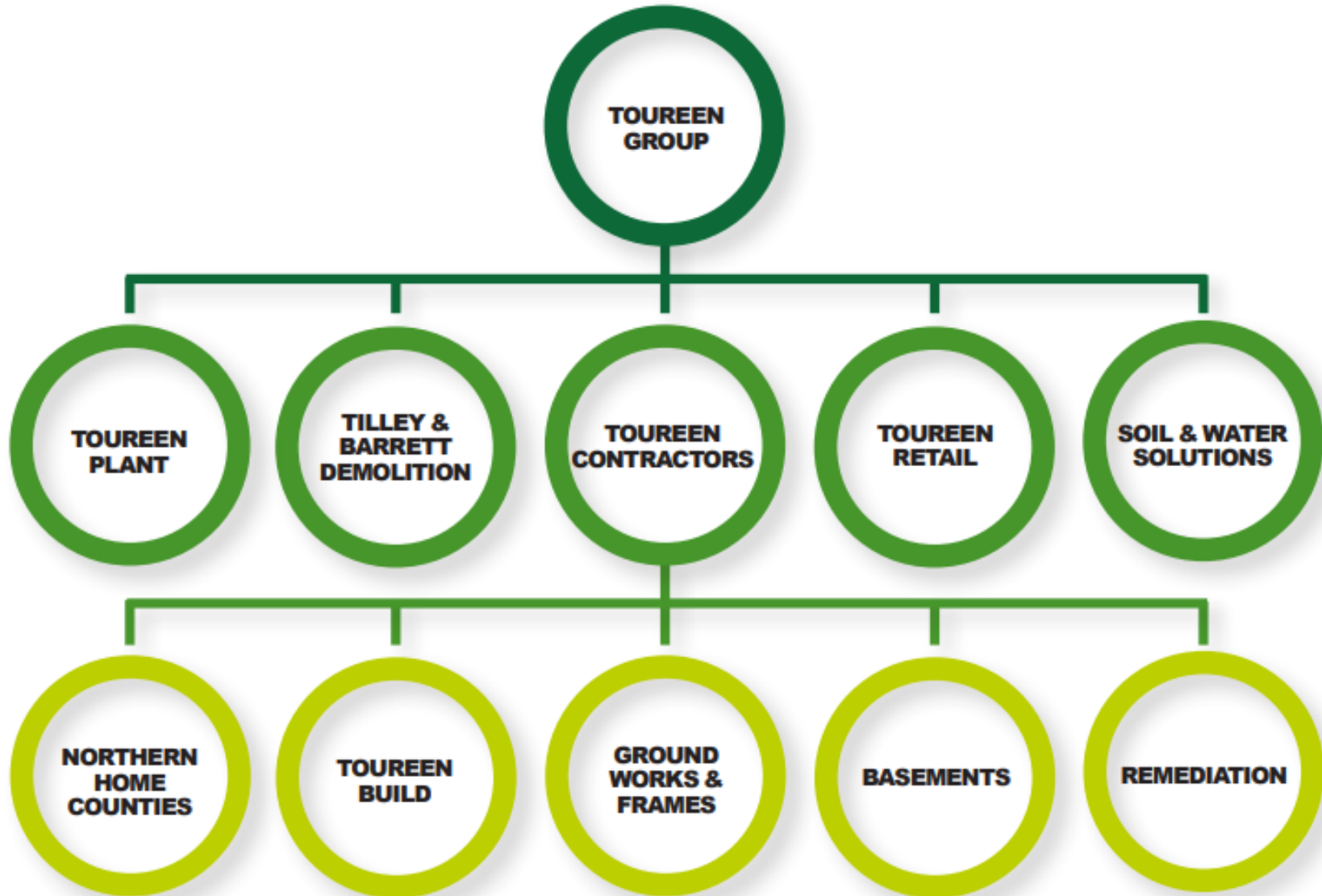


TOUREEN GROUP

THE TOUREEN GROUP IS A MULTIFACETED, AWARD WINNING CONSTRUCTION SERVICES ORGANISATION OPERATING THROUGHOUT THE UK.

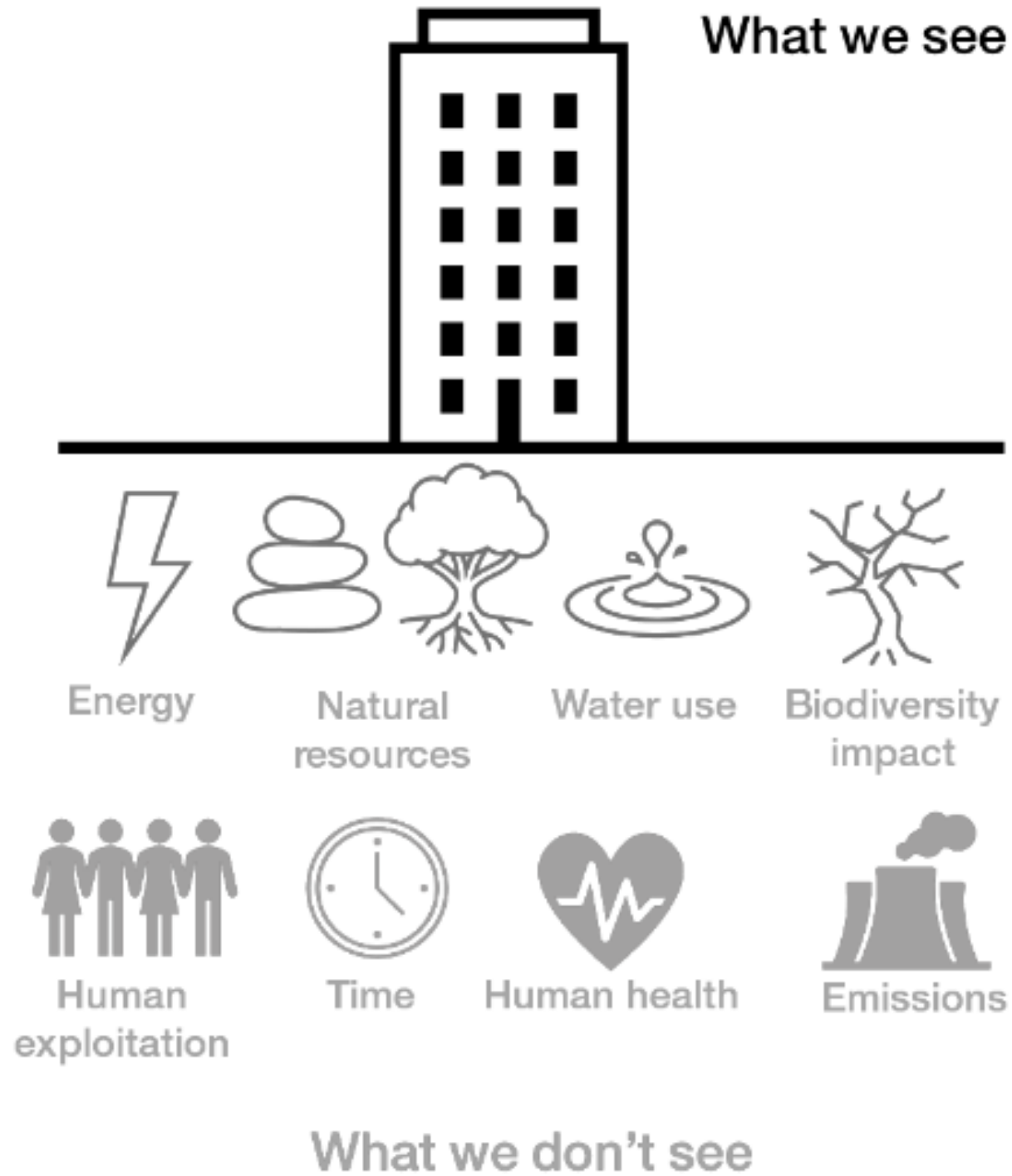
FOUNDED IN 1992, TODAY THE GROUP OFFERS A RANGE OF INTEGRATED COMPANY SOLUTIONS TO MEET THE NEEDS OF ITS CLIENT BASE. THE GROUP'S SERVICES CAN BE CONTRACTED SINGULARLY OR COMBINED TO CREATE A TURNKEY SERVICE THROUGH AN INTEGRATED GROUP SOLUTION.

OUR GOAL IS TO ADD QUALITY OF SERVICE TO EACH PROJECT, DELIVING TO CLIENT REQUIREMENTS, SAFETY, VALUE AND QUALITY THROUGH CREATIVE, INNOVATIVE SOLUTIONS TO COMPLEX CHALLENGES.



for companies that have a heart

THE PROBLEM



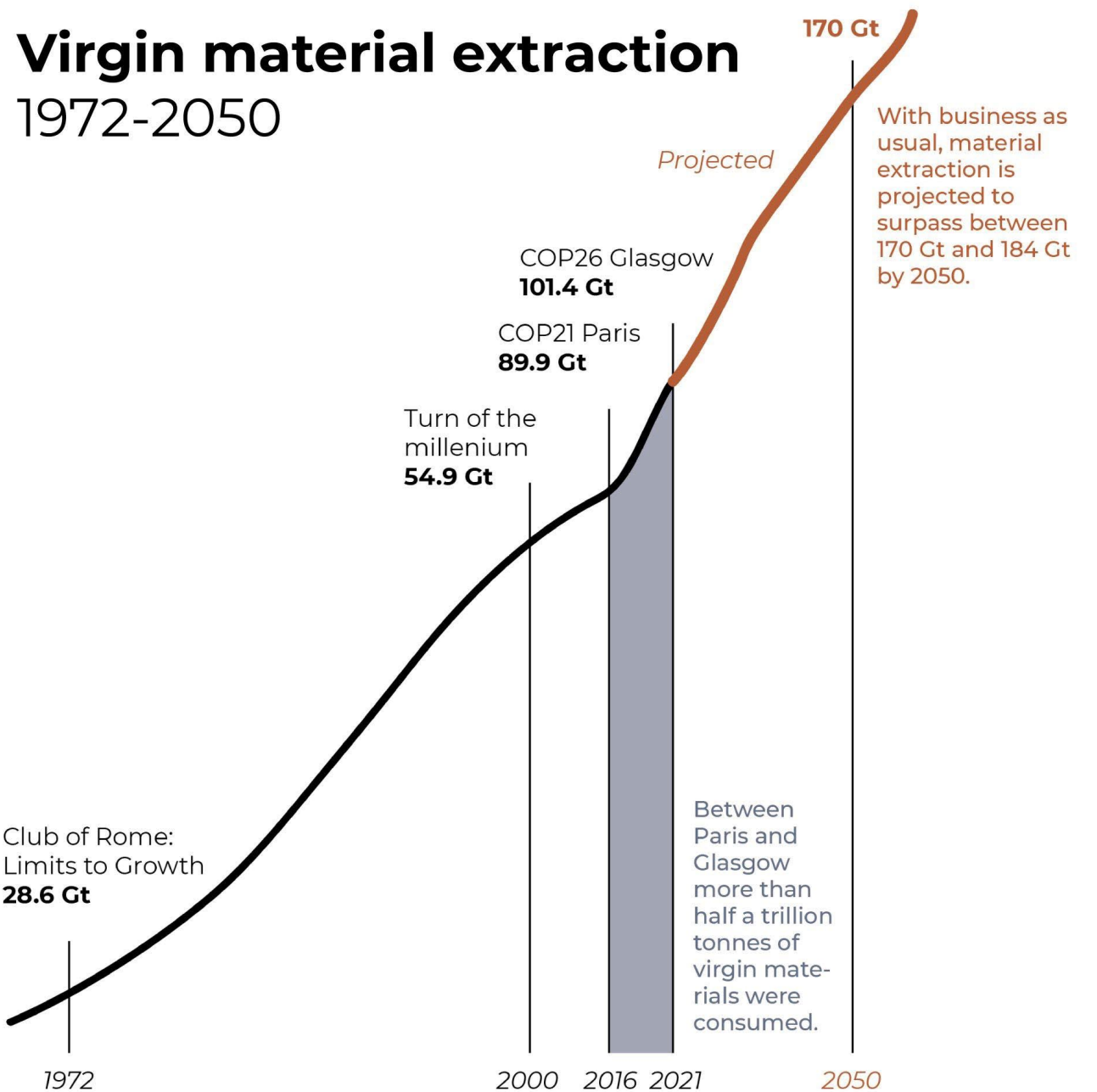
Material Extraction

In just 50 years, global use of materials has nearly quadrupled, outpacing population growth

Between COP21 in Paris 2015, and COP26 in Glasgow 2021, 70% more virgin materials were extracted than the earth can safely replenish

Earth Overshoot day

August 2nd 2023



Source: The Circularity Gap Report 2022, Circle Economy (2022)



CIRCULAR ECONOMY TODAY

Doing the best possible reuse - buildings we see today haven't been designed for adaption and deconstruction

■ Demolition

reuse first, materials & carbon saved today

■ Design for adaption

materials & carbon saved in 20-30 years time

■ Design for deconstruction

materials & carbon saved in 50-100 years time



How can we move more quickly to deconstruction?

Early involvement of demolition specialists

Market for reuse

Demolition contracts to accommodate / incentivise deconstruction

Improve the information available about asset as early as possible

Better specification of client objectives for material reuse

Improve recertification and warranties for reclaimed materials

Legislation – e.g. reduce cheaper material imports, materials vs. waste

Engagement & knowledge sharing – across a development value chain and amongst contractors

Overcoming some of the challenges..

- Opportunity to link with consultants involved earlier in planning process of projects
 - Joint learning – blue sky thinking meets practicalities
 - Out of the box thinking
- Engagement – workshops to enhance pre-demolition audit activities involving several stakeholders
 - Challenging the thought process in every decision



Enhanced Pre-demolition Audit Workshop

Pre-demolition / Reuse workshops with key project stakeholders



Pre-demolition / Circular Economy Audit



Key Contacts		
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Pre-demolition / Circular Economy Audit

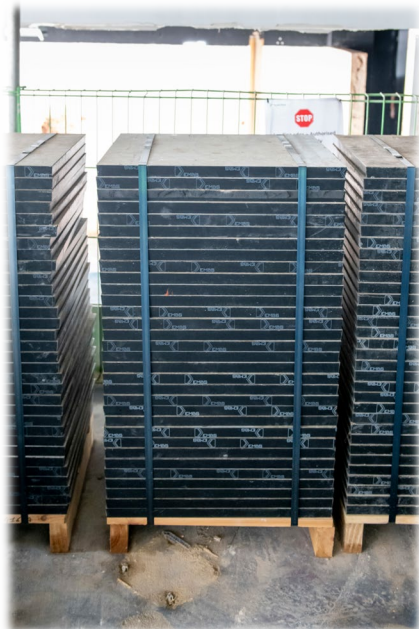
Definitions	
Key term	Definition
Refurbish	Redeveloped for similar needs and uses but meeting / exceeding current regulations and standards through restoring, refinishing and future proofing, while minimising changes and avoiding replacement of any parts. Parts of historical significance incorporated in the design and carefully preserved. Designed for longevity, adaptability or flexibility to prolong the new life of the development.
Repurpose	Redeveloped to accommodate different needs and/or uses (e.g. from industrial use to mixed use) but exceeding current regulations and standards through significant changes and replacement of shorter-life parts. Parts of historical significance are incorporated in the design and carefully preserved. Designed for longevity, adaptability or flexibility to prolong the new life of the development.
Upcycling	To transform products and materials into higher quality and/or higher value products and materials.
Downcycling	The opposite of upcycling; the transformation of products and materials into lower quality and/or lower value products and materials.

Reuse potential		
Feasibility	Definition	Examples
High reuse onsite / in situ	Elements being reused in situ / onsite in future development in existing form with little to no processing needed	Facades, adaptive reuse of the structure in situ, elements of the building where developer / architect incorporate elements into future design
High reuse offsite	Commonly reclaimed elements in sufficient quantities and in good condition	Bricks, Steel beams & columns
Medium reuse offsite	Elements that are available in the reuse market but the quantity or quality is not sufficient to be of interest to resellers. However, considered easy to remove and reuse potential for smaller contractors	Structural timber, roof slates, sanitary equipment, tiles, wood flooring, lighting, doors, technical installations (e.g. ventilation plant), other finishing elements
Reuse offsite - other industries & purposes	Reclaimed materials that are of interest to resellers in other industries and markets e.g. farming, manufacturing, household, creative arts & entertainment, non-UK	Potentially wide ranging - smaller steel sections, timber, electrical installations, ceramics, other fittings & finishing elements - furniture, cupboards etc.
Recycle	Waste reprocessed into products and materials whether for original or other purposes	Inert material - concrete, hardcore, glass, broken ceramics, plasterboard, encased steel, mixed metal fittings etc.
Recovery	Operation which means that the element remains a waste, but serves a useful purpose e.g. anaerobic digestion, incineration with energy recovery, gasification and pyrolysis which produce energy	Low grade timber, plastics, composite materials, mixed waste streams, municipal waste
Landfill	Disposal by sending the waste to a landfill site	Asbestos, hazardous materials



Pre-Demolition / Circular Economy Audit

Inventory & Opportunity's											
Material Evaluation & Reuse Feasibility	Material / EWC Code	Location	Estimated Quantities	Reuse potential	Challenges to overcome / potential impacts?	Further investigations / testing required?	Existing method of fixing	Can be removed without damage?	What is needed to facilitate removal?	Can it be stored onsite / offsite?	
Substructure											
Foundations	Concrete & rebar	Basement 1, Level	30 m3	High reuse onsite / in situ	limited Reuse Opportunities onsite, depending on site access to the concrete	Construction report from the contractor	NA	NA	NA	NA	
Basement	Concrete	Basement 1, Level	122 m3	Recycle	Franchising onsite for recycling/reuse - access, programme and cost, plus noise & dust impacts, pollution of adjacent roads risk to vehicles, control of work of waste sorting management, secondary option - send offsite for recycling/reuse in other industries	Classification of concrete/brick / hazardous materials & coatings	NA	NA	Crusher / processing & multiple area onsite, otherwise removed for recycling offsite	Trade crushed for sub-base	
Superstructure											
Frame - ground floor	Steel / 17 04 05	Ground floor		High reuse onsite / in situ	Re-use onsite for construction not considered for the demolition phase. Re-use, where higher risk activity. Poor access to concrete because of mixed height and central column locations. Good for storage & additional use on programme. If not accepted for reuse on scheme - finding a partner to take stock.	Desktop info on frame. Visual assessment by engineers & partners.	Re-use	NA - Mostly untreated / burn. Exposed to weathering (only to remove)	Re-use for removal, lifting - crane for the frame lift. On floor potentially a frame lift down.	Re-use offsite only due to small site footprint	
Frame - upper floors	Steel / 17 04 05	Roofs and columns (ground to 7th floor)		High reuse onsite / in situ	Re-use onsite for construction not considered for the demolition phase. Re-use, where higher risk activity. Poor access to concrete because of mixed height and central column locations. Good for storage & additional use on programme. If not accepted for reuse on scheme - finding a partner to take stock.	Desktop info on frame. Visual assessment by engineers & partners	Re-use	NA - Mostly untreated / burn. Exposed to weathering (only to remove)	Crane for parts with & overall agreement	Smaller amount of steel, can be re-used and re-located onsite for reuse in temporary works.	
Frame	Concrete panels	Ground floor - 8th floor	88 m3	Recycle	Would not be suitable for structural or non-structural purposes. General waste cannot be removed without damage.	Investigations already undertaken during existing works.	NA	NA	NA	NA	
Frame	Formwork panels	10 floor	108 m3	Recovery	loading potential insufficient for reuse. Wood workability making hard to recycle in some areas.	NA	NA	NA	NA	NA	
Upper floors	RC Concrete	10 floors in slab and columns	129 m3	Recycle	Recycle offsite is most suitable option regarding concrete and rebar. Site site / programme key concerns for existing onsite. Regarding reuse options - would be broken during removal.	NA	NA	NA - only suitable for reuse in situ	NA	NA	
Roof structure	Timber	Roof	20 m3	Recycle	Material hazardous (asbestos), being replaced with heavily contaminated with metal. Only some damage whilst removing - additional H&S measures.	Issue classification by laboratory having to determine if any hazardous coatings.	Heavily treated	NA - timber damaged when removing, heavy metal/floor contamination	NA	limited reuse onsite for furniture, re-uptake and storage for one time period without getting in the way of other works.	
Roof coverings	Steel	Roof	126 m3	High reuse onsite / in situ	Re-use for reuse - difficult to assess whether can be used in the development considering non-structural - original roof area / decorative features etc. Considerations for reuse offsite - cost / weight / volume / quantity for recycling market - additional programme time. Limited by transport and material handling considerations on the site.	Structural assessment etc. for re-use	NA	NA - mostly	Hand tools, packaging	Offsite - limited space, unless reusing in same development, where may be able to facilitate onsite storage if can avoid multiple handling.	
External walls	Brick	External walls	476 m3	High reuse offsite	Storage onsite (subject to programme and associated cost. Higher material labour and H&S risk. Re-use considered for onsite storage. Brick quality, quantity and rebar material. Possible for re-use to incorporate into new build - if not economic, decorative features such as flower beds etc.	Further market testing with rebarbers. Investigation into whether re-use	Partial	Further investigations on market required to determine the viability, as material handling considerations as floor by floor study. Most offsite material would be damaged.	Labour / time on programme	Offsite - space constraints, ability to re-use or offsite storage if coming in same development	
External walls	Stone facade	Point elevation facade	6 m3	High reuse onsite / in situ	Off facade value - decision already made on ground for part of facade to remain in situ and part to be demolished and rebuilt.	NA	NA	NA	NA	Offsite	
Windows	Steel	10 floors	20 m3	Recycle	Single glazed and size not appropriate for current standards, unless off market. H&S issues to be considered.	Investigation to determine whether salvaged and could be recycled separately	NA	NA	NA	NA	
External doors	Timber doors - composite	10 floors	10 m3	Recovery	Went to be re-use market for steel. Removal of frame without damage unlikely. Cannot the safety rating regulations to meet for most normal composite materials require high fire ratings. Shreddy - necessary if no reuse option found.	NA	NA	NA - hard to remove the door - Re-use not. Would need fire rated matching frame to building to be retained to correct the safety gap.	NA	NA	
Internal walls & partitions	Steel / plasterboard / timber / composite panels	10 floors	40 m3	Recycle	Went to be re-use market, some damage whilst removing, transport & storage. High quantity of these items when integrated into composite panels. Steel - not usually commercially viable - some re-use potential.	NA	Mechanical. Glass - top and bottom to be broken, avoid off between glass panels	NA	Hand tools, glass cutters, manual handling into goods lift	NA	
Internal doors	Timber / Glass	10 floors	20 m3	Recycle	Went to be re-use market for steel. H&S issues to be considered.	Market testing with rebarbers	Crane / Jibs	NA	Nothing above current practice other than time to remove carefully.	NA - space constraints, offsite or at re-use only.	
Internal finishes											
Wall finishes	Timber / plaster	10 floors in slab and columns	20 m3	Recovery	Re-use for reuse - difficult to assess whether can be used in the development considering non-structural - original roof area / decorative features etc. Considerations for reuse offsite - cost / weight / volume / quantity for recycling market - additional programme time. Limited by transport and material handling considerations on the site.	NA	NA	NA - mostly untreated / burn. Exposed to weathering (only to remove)	NA	NA	
Floor finishes	Carpet / composite flooring / tile	10 floors in slab and columns	120 m3	Medium reuse offsite	Some additional value / time for material sorting and removal below floor due to lack of storage.	Visual assessment of Rubble & using for reuse the best.	NA	NA - mostly untreated / burn. Exposed to weathering (only to remove)	Crane lift + additional manual handling in slab cut.	Some damage if offsite reuse possible when demolishing to create space.	NA - re-use identified
Ceiling finishes	Steel	10 floors	120 m3	Recycle	Went to be re-use market for steel. H&S issues to be considered.	NA	NA	NA - mostly untreated / burn. Exposed to weathering (only to remove)	NA	Nothing above current practice.	NA - space constraints, offsite or at re-use only.
Services											



Heritage

Bricks

Steel

Slates

Carpet T

Raised AF

Glass

Concrete

Furniture

Ceiling T

Plastics

Easier wins becoming the new normal

High value, easy to remove, existing reselling market etc.

Vs. the harder / smaller wins

Harder to remove, lower value, higher H&S risk, no established reselling market, issues with warranties etc.

GREEN APPLE AWARDS 2023

TILLEY & BARRETT



PROJECT ACHIEVEMENTS

20-22 BERKELEY SQUARE

- Enhanced Pre-Refurbishment Audit
- Minimal demolition of structure – focus on refurbishment to facilitate a more efficient building
- Our strategic soft strip suppliers salvaged material for storage and onward reuse
- 32m² of timber parquet flooring salvaged
- 40 number timber doors and 10 number frames salvaged for reuse
- Various furniture, fixtures and fittings salvaged – furniture, fridges, light switches, plug sockets etc.
- 275m³ of concrete removed from floors recycled for engineering fill at Toureen's recycling facility Powercourt



GROSVENOR GARDENS

- Retained façade to 3 number elevations
- 400,000 bricks salvaged
- 82 fireplaces removed
- 60 doors and doorframes
- 4000m² of floorboards and structural timber deconstructed and sent to salvage company
- 90 radiators salvaged
- All salvaged items catalogued and sent for storage

PALL MALL

- Enhanced pre-demolition audit workshop led by T&B but involving multiple project stakeholders
- Front façade retained. And part of it dismantled and removed for reinstallation
- Computer flooring salvaged & sent to reseller partner
- Carpet tiles salvaged & sent to reseller partner
- Steel salvage to GF & Low-level floors – to be refabricated and used in temporary works

