2.0 Existing Building

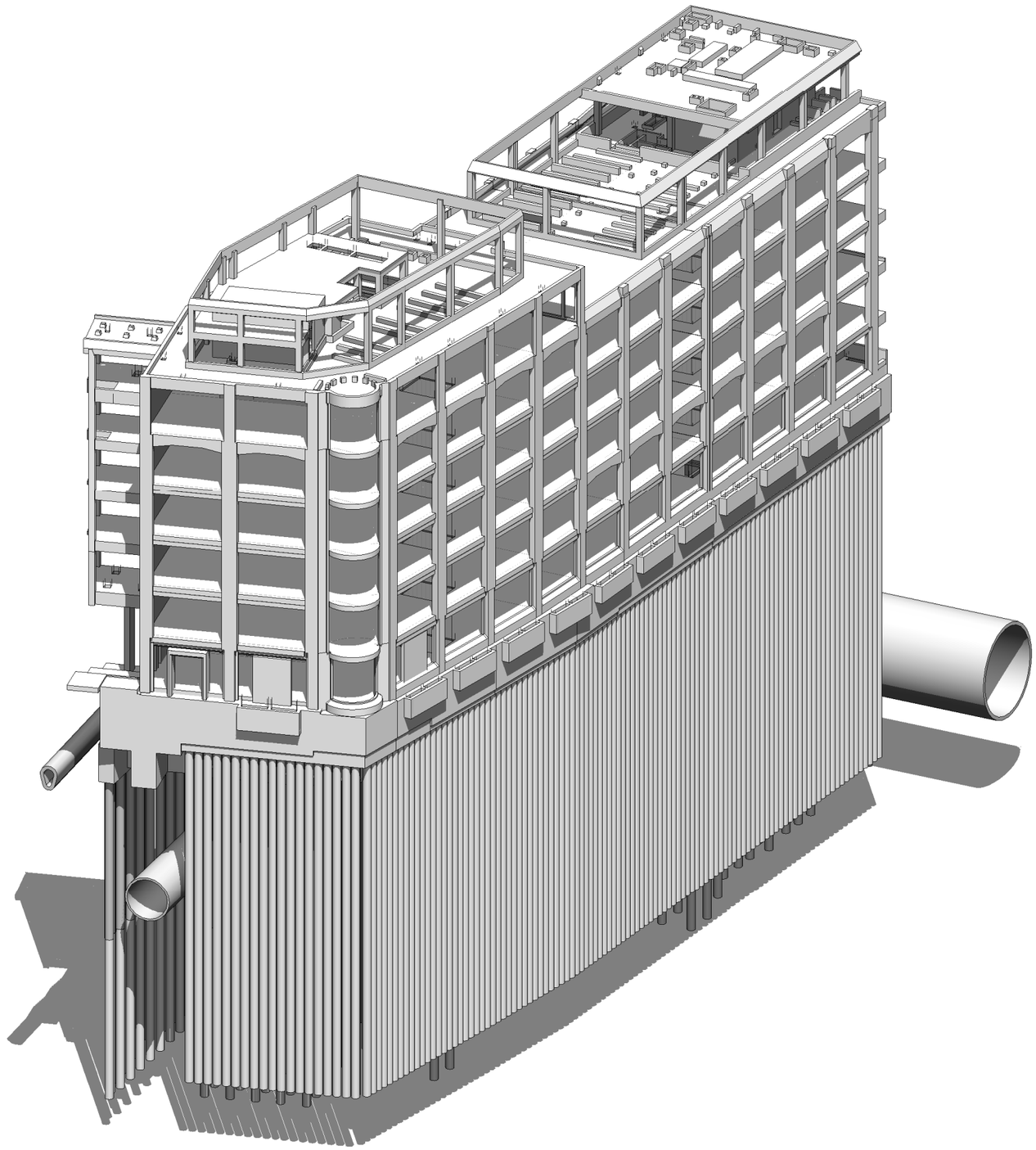
2.3 Structural Frame

The existing building's foundation extends to a depth of 30m below Saffron Hill street level. The main structure of the building consists of concrete columns and beams that support ribbed concrete slabs in combination with monolithic concrete slabs, particularly where adjoining the cores. Additionally, three concrete cores in the building serve as supporting elements and provide lateral stability to the structural frame.

The design team intends to retain and reuse the existing foundations and retaining walls, with a target to maximise the retention of the superstructure, while rationalising the existing three core system into a newly proposed single core.

42%	6,520	tonnes	to be retained in situ
~ 1%	168	tonnes	designed for on-site reuse
3%	470	tonnes	designed for off-site reuse
54%	8,386	tonnes	in the recycling / waste stream
95-98%			diversion from landfill target through reuse or recycling

Key Pathway Targets



3D model of existing structure

3.0 Refit

3.1 Overview

This option proposes minimal intervention to the existing building, retaining the current structure and façade while implementing targeted internal improvements. The scope includes minor works and the replacement of essential building services such as heating enable continued occupation of the building. Internal partitions would be removed to improve the available space.

Advantages

The refit approach represents the smallest embodied carbon impact among the considered options.

Limitations

The resulting office space would hardly meet contemporary office standards

Thermal performance would not be meaningfully improved (e.g replacing glazing only is very unlikely to achieve any significant performance change required for future use due to presence of thermal bridging)

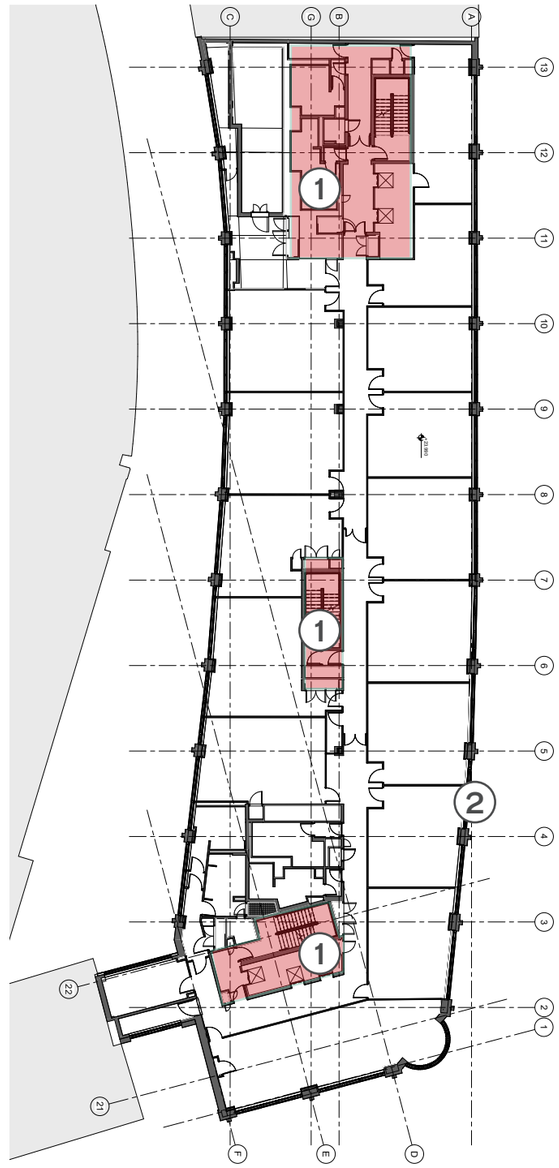
The opportunity to create a stronger connection between the street and the building would be lost

No public benefits would be generated

Summary

Our testing has identified that a light touch refurbishment, or refit, while having the smallest embodied carbon, would not address the fundamental constraints of the existing building, provide poor quality office space, high ongoing operational carbon and would not provide any public benefit or accessible retail frontages.

South East Axometric View



Typical Office Floor

1. Three number cores currently obstruct plan for good quality flexible office space
2. Poor facade performance both in terms of U values and daylighting contribut to high operational carbon

4.0 Refurbish

4.1 Overview

Although more intervention to the existing building including some upgrade to the cores and impriovements to the plant including at roof level, it continuse to work within the exisitng building envelope limiting opportunities for improvements.

Advantages

Some improvement to floorplate and operational carbon.

Limitations

The resulting office space although improved would still fall short of contemporary office standards

Thermal performance would not be meaningfully improved (high cost with low ROI, performance uplift will be minimal, e.g. extra insulation only, very little benefit).

The opportunity to create a stronger connection between the street and the building would be lost

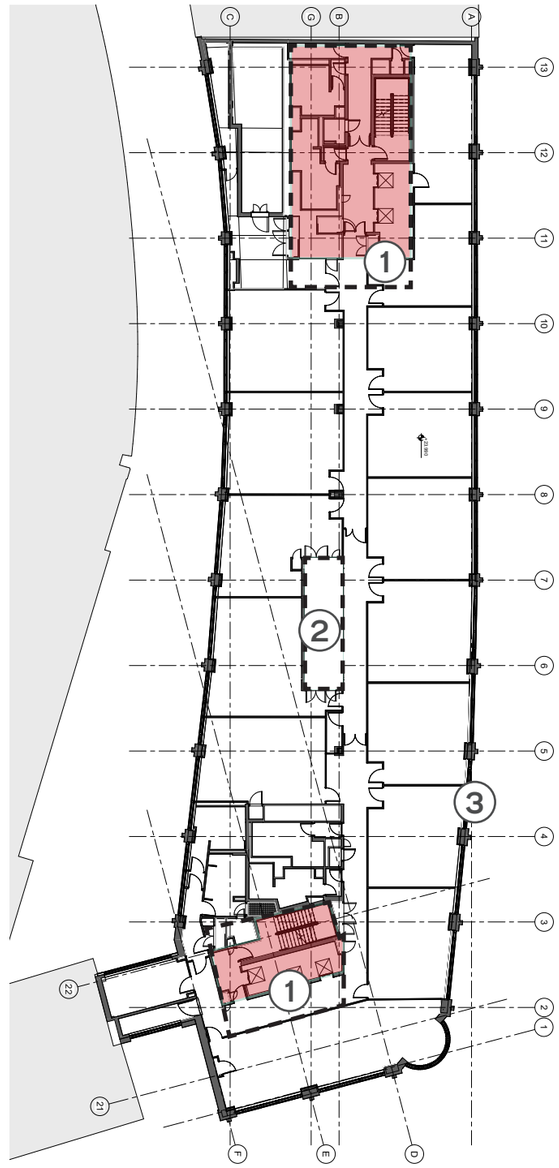
No public benefits would be generated

Summary

With the majority of the interiors replaced, including services, this option would provide better quality spaces, and some improvement on operational carbon. However improvements in operational carbon would be limited due to poor facade performance. It would not provide significant public benefis

1. Two number cores retained and enhanced to provide some enhancement to office quality
2. Central core omitted to reduce obstruction to floor place
3. Poor facade performance both in terms of U values and daylighting contribut to high operational carbon
4. Some replacement and enhancement of plant including at roof level

South East Axometric View



Typical Office Floor

5.0 Substantial Refurbish and Extension (Proposed Scheme)

5.1 Overview

This option proposes significant changes to optimize site capacity and alter the existing structure to meet future needs. The scheme involves substantial modifications to the façade while seeking to retain as much of the existing building as possible to reduce the need for new materials and minimize the loss of embodied carbon.

Advantages

Retains significant portions of the existing structure
Creates additional floor space through strategic extensions

Substantially improves thermal performance through façade replacement. Fundamental upheaval of performance to contemporary standards and future use.

Enables creation of active frontages on Charterhouse Street, Farringdon Road and Saffron Hill

Provides public benefits through active retail and affordable jewellery spaces

Enhances natural light penetration and visual connections between inside and outside

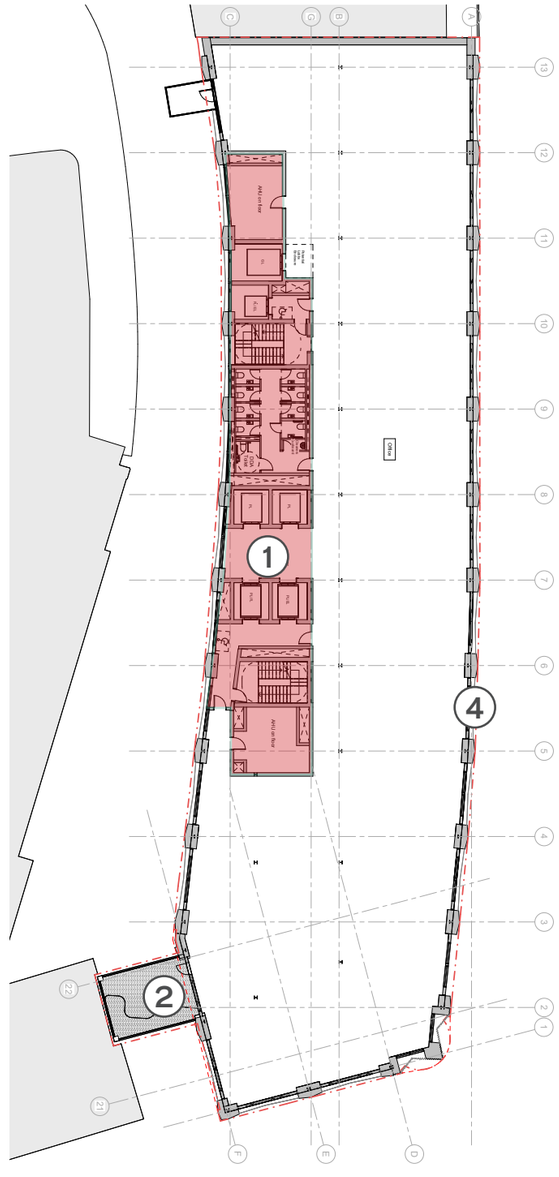
Improves the efficency of office layout with better core including enhancements to fire strategy

Summary

The substantial refurbishment and extension approach represents the most balanced option for 19 Charterhouse Street, delivering significant operational carbon improvements and spatial quality enhancements while still preserving a considerable portion of the embodied carbon

1. Single efficent core with enhanced fire and occupant facilities
2. Provision of external space for building users with generous terraces
3. Improved public benefit opening up Saffron Hill
4. Enhanced facade improving U-values and reducing operational carbon

South East Axometric View



Typical Office Floor

6.0 Reclaim and Recycle (New Build)

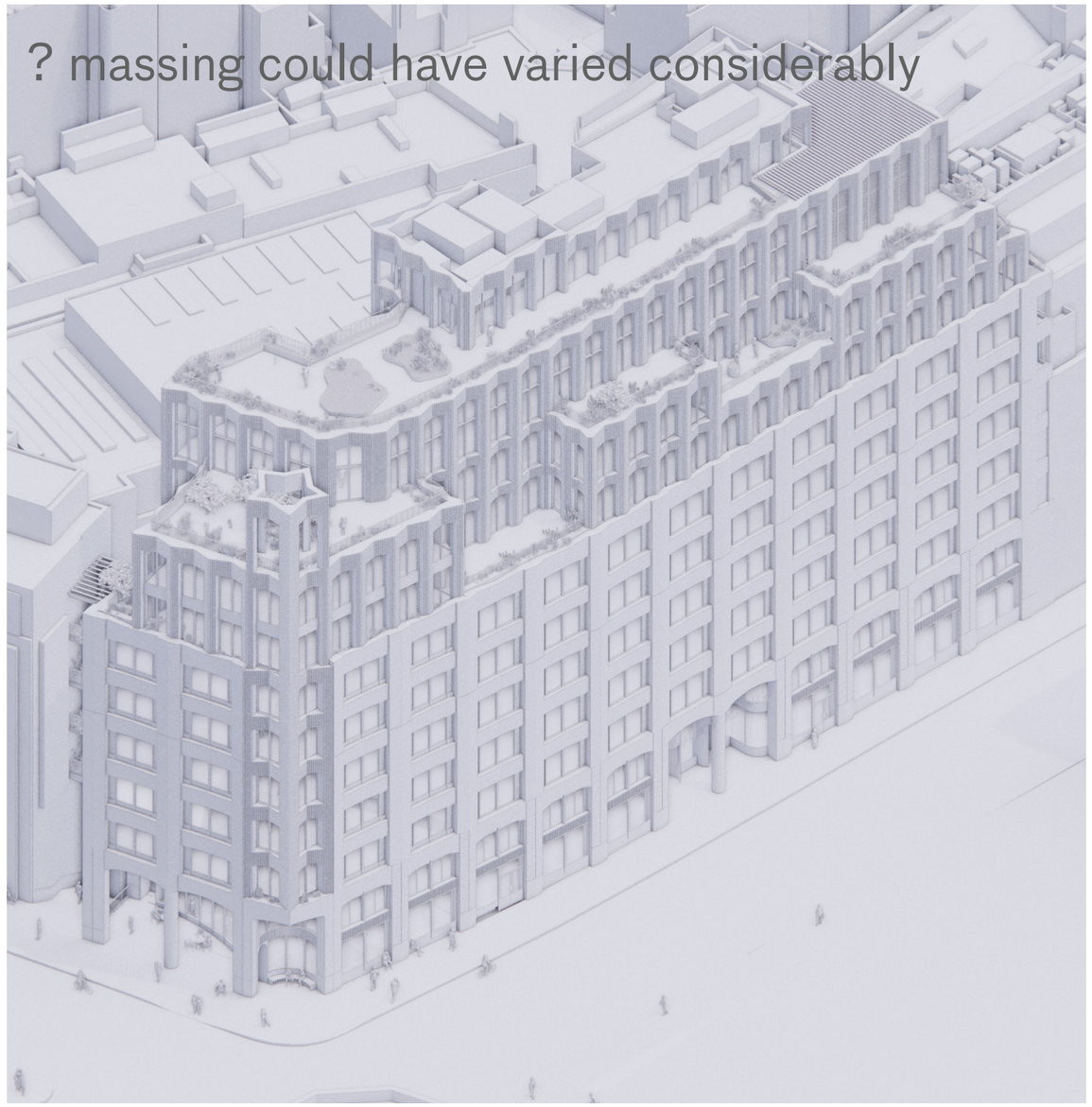
6.1 Overview

Although this option has obvious opportunity to maximise the efficency of the floor plate including removing some restrictions on the positioning of core and internal columns, the teams moved away from this early in Stage 1 as it failed to address the opportunity and value in the existing concrete frame.

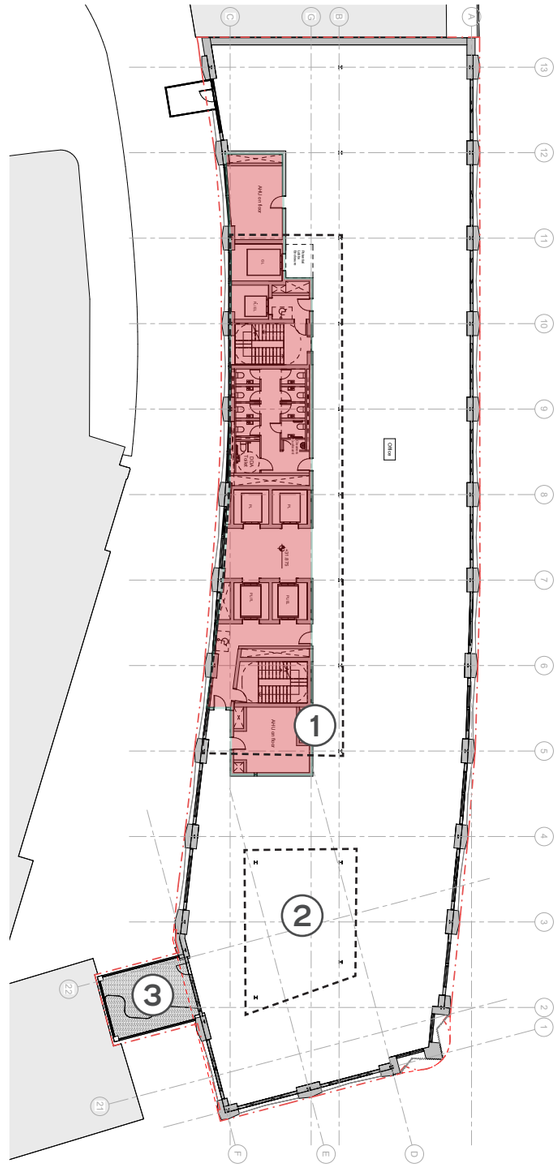
Summary

While new build would address all building constraints, provide public benefits, reduce the operational carbon, and provide the best quality office space, it is important to acknowledge that a full reclaim and recycle (new build) development is not the most responsible carbon-conscious direction to take, when the current floor to floor height is adequate and can be utilised.

Ideal scenario from operational view, but high embodied carbon for little extra gain beyond substantial refurbishment. Refurbishment allows existing materials to be recycled. This cannot be achieved without significant demolition.



South East Axometric View



Typical Office Floor

1. A more efficent core could be achieved without the need to maximise retention of existing floor slab
2. More regular columns on the floor could be achieved without the need to align with exisitng retailed columns
3. Wider options for bridge including potential omission

7.0 Summary Comparison

7.1 Options and Conclusion

Retention Options

In accordance with Planning Policy, the design team has researched and tested four design options ranging from light touch refit, through to different degrees of retention, to full reclaim and recycle (new build).

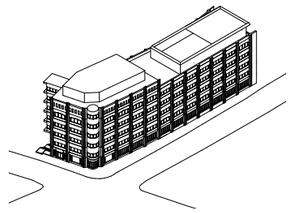
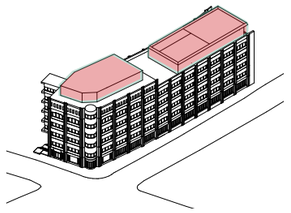
Refit
Our testing has identified that a light touch refurbishment, or refit, while having the smallest embodied carbon, would not address the fundamental constraints of the existing building, provide poor quality office space, high ongoing operational carbon and would not provide any public benefit or accessible retail frontages.

Refurbish
With the majority of the interiors replaced, including services, this option would provide better quality spaces, and some improvement on operational carbon. However improvements in operational carbon would be limited due to poor facade performance. It would not provide significant public benefis.

Substantial Refurbish and Extension
Based on studies the proposal provides an intensification of the site, together with a significant portion of structural retention. Therefore, our focus would be on the optimal retention scheme to ensure the suitable elements of the existing building are used in the most effective way, minimising the use of any additional carbon.

Recalim and Recycle (New Build)
While new build would address all building constraints, provide public benefits, reduce the operational carbon, and provide the best quality office space, it is important to acknowledge that a full reclaim and recycle (new build) development is not the most responsible carbon-conscious direction to take, when the current floor to floor height is adequate and can be utilised.

Conclusion
The team are confident that Substantial Refurb and Extension scheme will safeguard a significant part of the existing concrete frame whilst still unlocking the wider benefits of improved operational carbon, high quality office environment, improved public benefits including affordable jewellery and retail provisions.

	Refit	Refurbish	Substantial Refurbish and Extension	Reclaim and Recycle (New Build)
				
Embodied Carbon				
Operational Carbon				
Commercial Viability				
Social Value				
Public Benefit				
Biodiversity and Climate Resilience				
Accessibility and Wellbeing				
	100% structure retention	**95% structure retention**	**70% structure retention**	**0% structure retention**
	retain structure new MEP retained facade minor works to interiors	minor structural alteration, retained facade with new thermal line new MEP some new core elements and toilets	maximise structure retention moderate extension within limit of current structure capacity new MEP new facade new core and toilets	higher floor to ceiling new structure new MEP new facade new core and toilets

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