

University of Manchester



George Kenyon Recladding Project

Design & Access Statement

5652-HMA-GKH-XX-RP-A-90003_P01

DATE: 22nd March 2024

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1.0 Introduction

This Design and Access Statement has been prepared to support a full planning application for the replacement of existing cladding and a new draught lobby at George Kenyon Halls of Residence. The proposals presented are associated with George Kenyon Building and Hall of Residence, Manchester, M13 9PL.

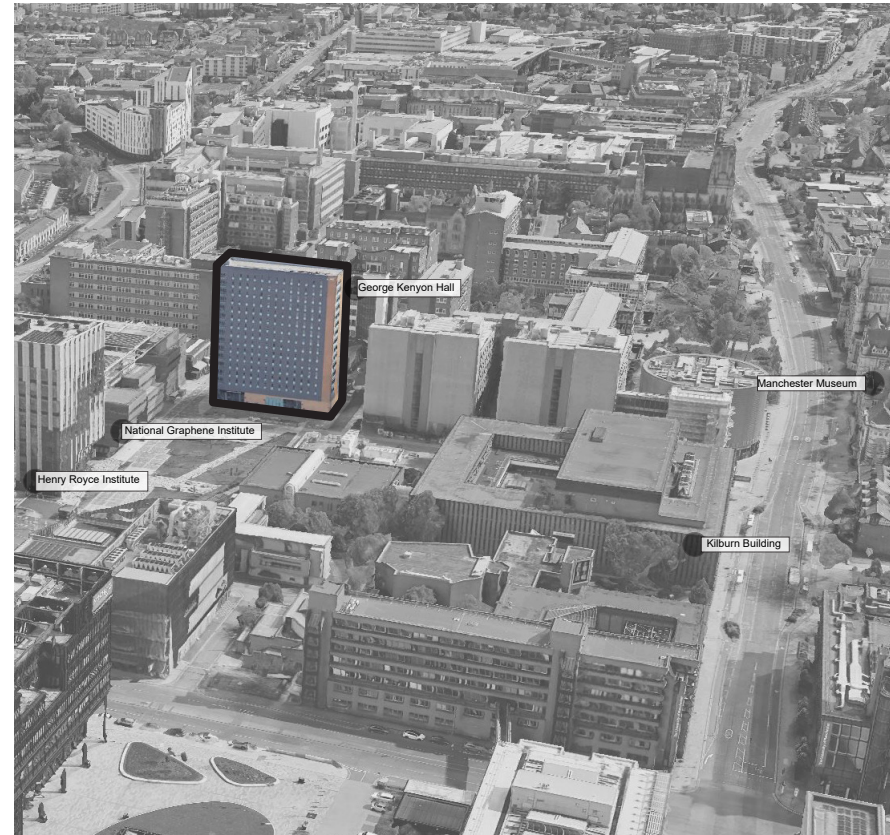


Figure 1 - Aerial View of George Kenyon Hall

2.0 The Site

2.1 Site Location

George Kenyon Hall is centrally located within the University of Manchester's main campus. The building is located on Wilton street and sits within between the Alan Turing Building and Jean McFarlane Building. The site is bounded by Upper Brook Street to the east and Oxford Road to the west and acts as one of the key points of interest within the recently completed public realm area.

- Application site boundary
- UOM campus boundary



Figure 2 - Site Location Plan

2.0 The Site

2.2 Site Constraints

The main constraints of the design relates to the project being in an existing building. George Kenyon is located within South Campus and is bounded Rumford St and Wilton St, these are heavily trafficked thoroughfares used by students and UoM service vehicles.

Externally, site access during the construction phase will need to be carefully considered as the building is bounded by pedestrianised streets and constrained by the existing service yard building to the south of the building. The design team has taken this into account and proposed an early stage strategy for providing adequate separation between construction operations and the passage of pedestrians and vehicles.

The narrow alley that runs alongside the southern façade of George Kenyon gives limited space for both a scaffold and staging area for construction works. This alley way is also the location of a number of chillers and a crossover point for services from the adjacent plant building. A specialist scaffolding design will be undertaken by the Principal Contractor - this should allow for a scaffolding design that incorporates any necessary bridging over services, and adequate access for the removal and installation of large construction components.

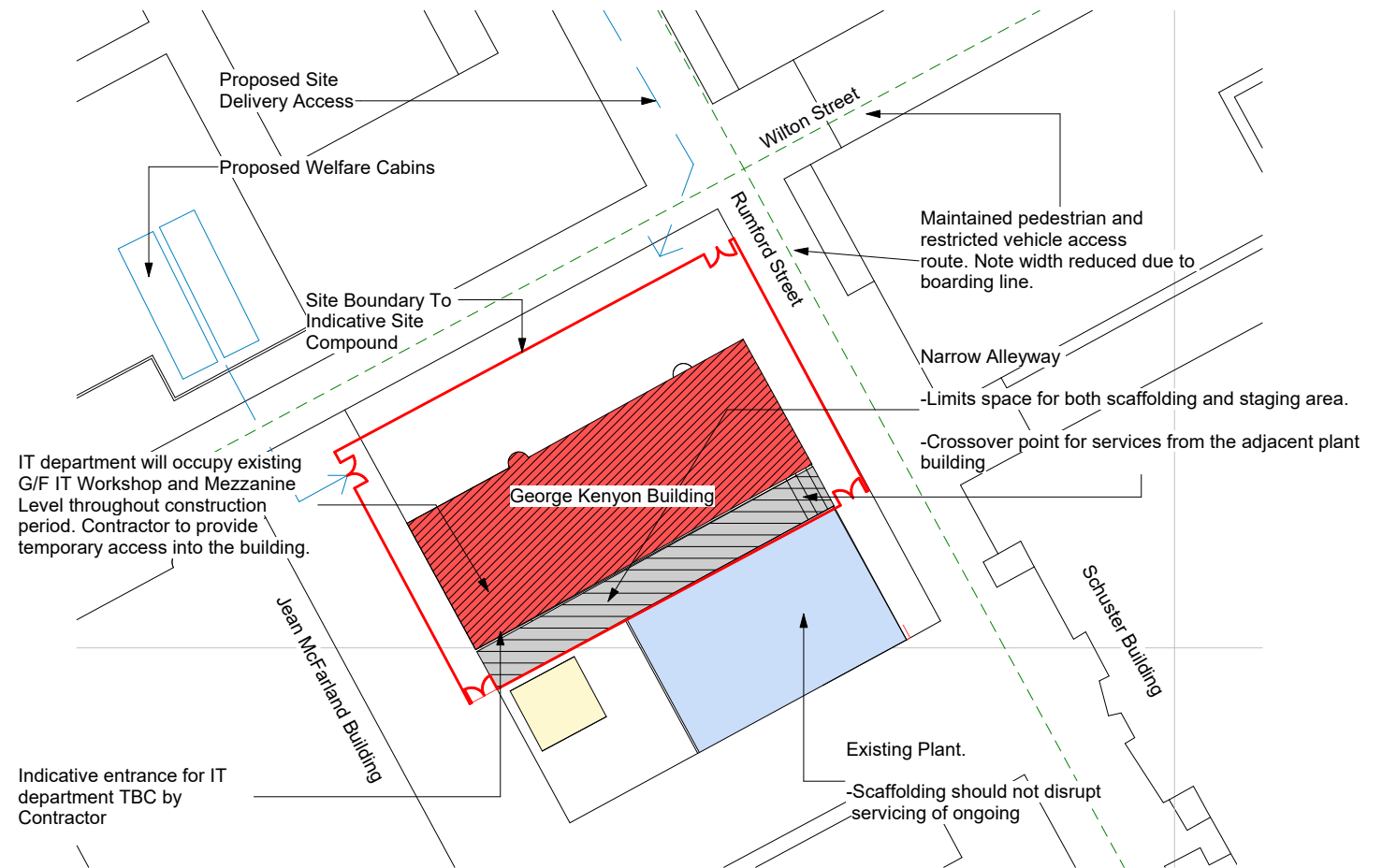


Figure 3 - Site Constraints Plan

2.0 The Site

2.3 Existing Building Condition

The facade replacement provides a more appropriate contemporary finish to the building and will address the noticeable undulation on the brickwork facades. Furthermore, the building is now approximately 20 years old and this is an opportunity to address some additional operational issues such as the entrance configuration and upgrading the roof and drainage systems.



Figure 4 & 5 - Existing condition of the brick and zinc facade



Figure 6 - Noticeable standing water on the roof

3.0 Design Strategy

3.1 Use

George Kenyon Hall's use is currently as a 300 room student residential accommodation with a cafe at ground floor level and an IT cluster on the mezzanine floor. The student accommodation is arranged in self contained flats in groups of five, with each room having its own en-suite shower room. The proposals presented in this application will not alter the use of the building.

3.2 Amount

This application does not seek to alter the amount of student accommodation within the building. However, there will be a slight increase (approximately 4.5sqm) in floor area to accommodate the proposed entrance configuration.

3.3 Layout

The current layout of the sites and internal spaces will remain unaffected by the proposals.

3.4 Scale

The existing building is 16 storeys and approximately 50metres high, with 14 storeys of student accommodation. The proposed entrance configuration provides a negligible change to the building's appearance, and the overall scale and massing of the building will remain unchanged.

3.5 Fenestration

The recladding proposals do not seek to change the size or arrangement of any fenestrations. The existing solid to void mix on the building's facade will be retained.

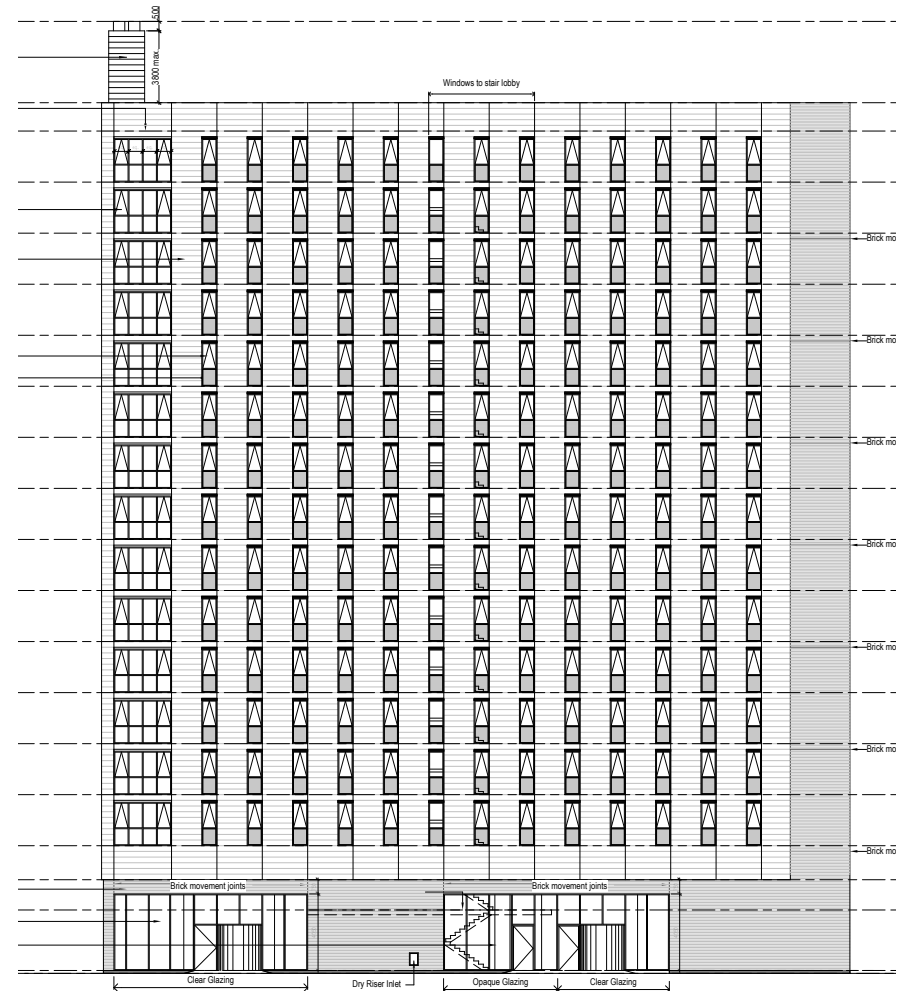


Figure 7 - Existing North Elevation

4.0 Proposed Design

4.1 Appearance

The initial design strategy focused primarily on replacing the existing wall build up and replacing the zinc and brick finish with like for like materials. One advantage to this is that there would be minimal change to the appearance of the building. However, given the building's prominent location on campus, it would be a lost opportunity to provide a contemporary finish to the building and break out from the monolithic nature of the adjacent buildings. The proposed recladding design can be linked to recent buildings that address the public realm. The contemporary aluminium cladding finished is akin to the adjacent Royce and Alan Turing buildings - both of which are located within the immediate context of George Kenyon.

4.2 Design Options

The design team worked through a series of options which explored the use of a mechanically fixed brick cladding system at ground floor level and an aluminium cladding finish to the upper levels of the building. An option recladding the entire building in brick was explored and discounted during the concept development stage as there was no guarantee that the existing structure could uphold the weight of the bricks.

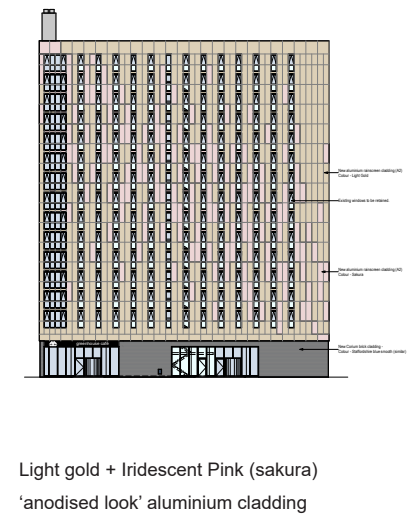
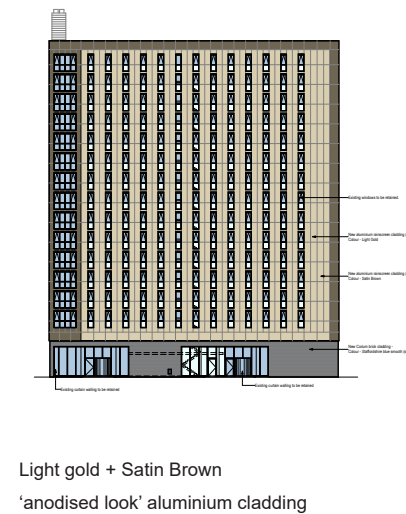
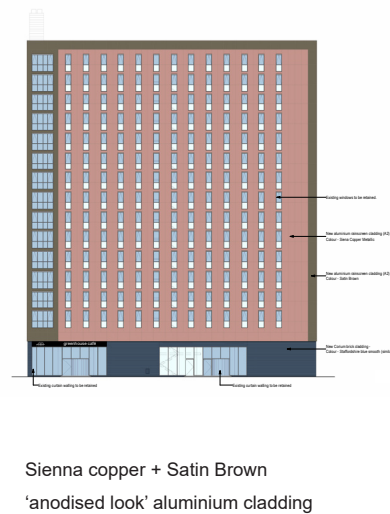
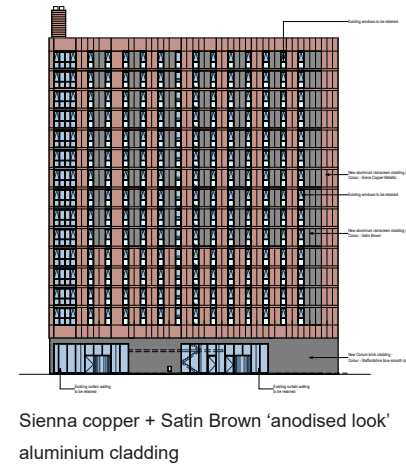
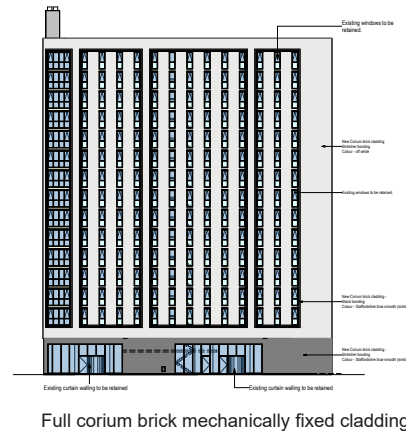
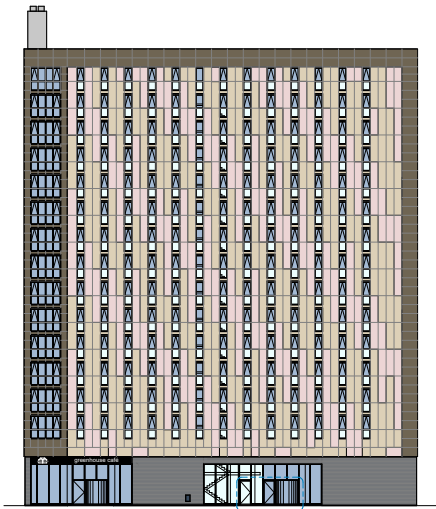


Figure 8 - 13 Elevation Design Options

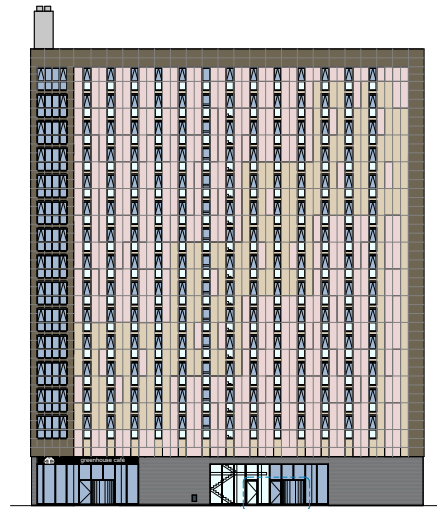
4.0 Proposed Design

4.2 Design Options

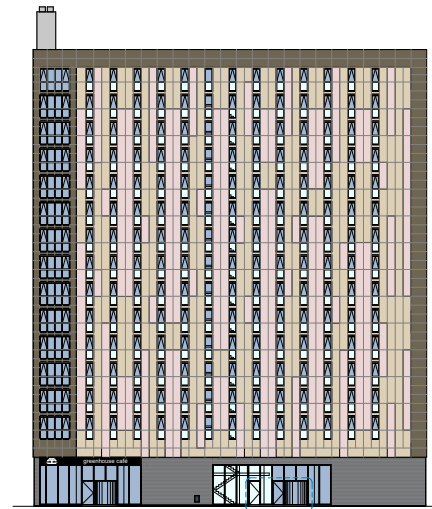
The preferred options at this stage is to have a mix of iridescent pink (sakura) panels breaking up the elevation in a diagonal pattern, with the option of having the satin brown book end as a secondary feature to the elevations. The design team have been through a series of options exploring the mix and pattern of the sakura panels. The options explored were based on diagonal and vertical patterns taken from the surrounding context.



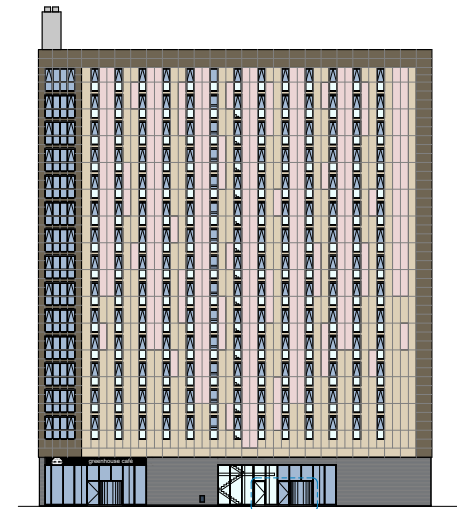
Option A
Alternating Diagonal



Option B
Diagonal Step-up



Option C
Vertical Fall



Option D
Vertical Wave

4.0 Proposed Design

4.3 Proposed Elevations

The preferred option for the sakura mix on the North and South elevation is an alternating diagonal pattern.

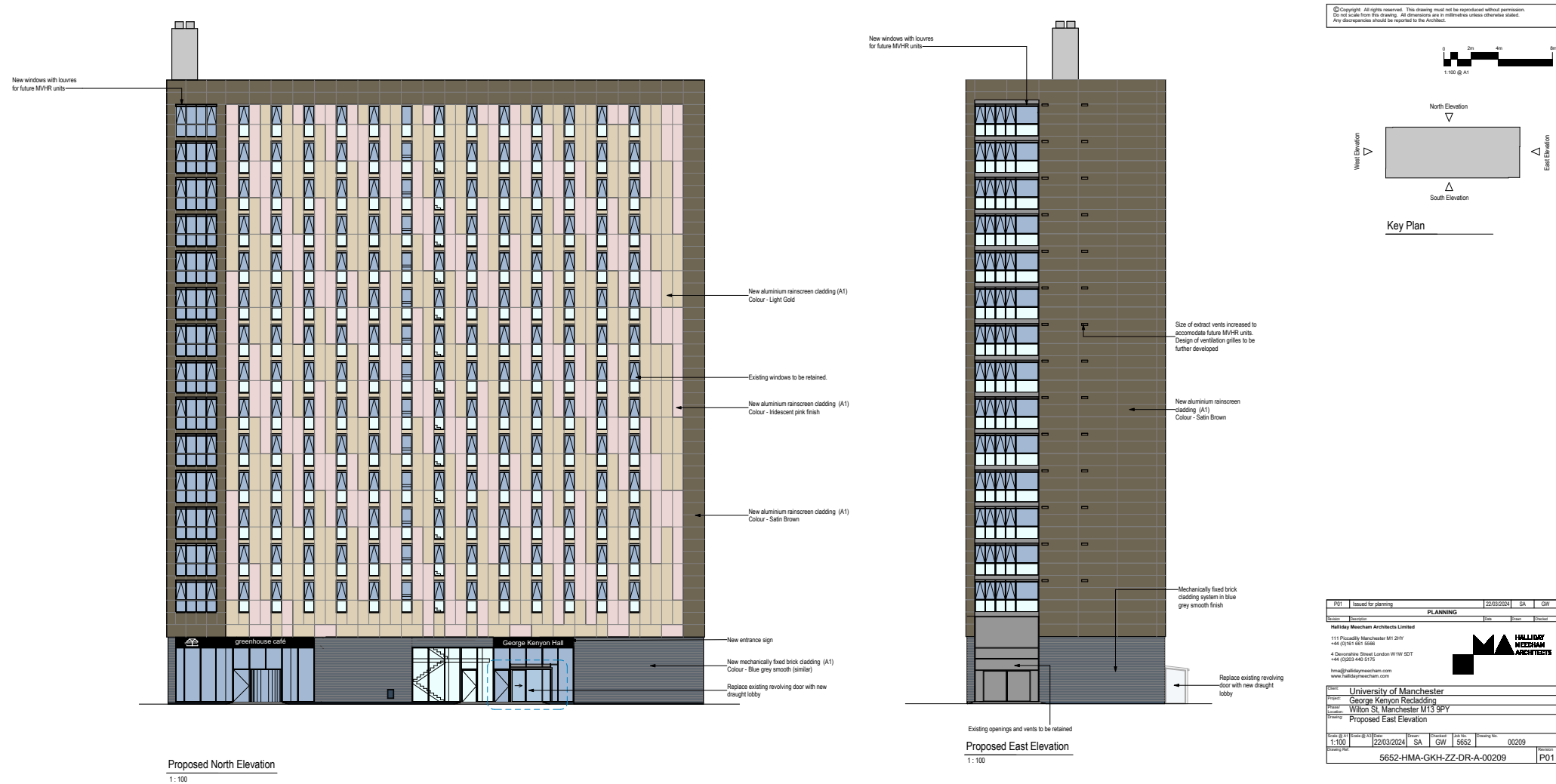


Figure 14 - Proposed Elevations

4.0 Proposed Design

4.3 Proposed Elevations

The preferred option for the sakura mix on the North and South elevation is an alternating diagonal pattern.

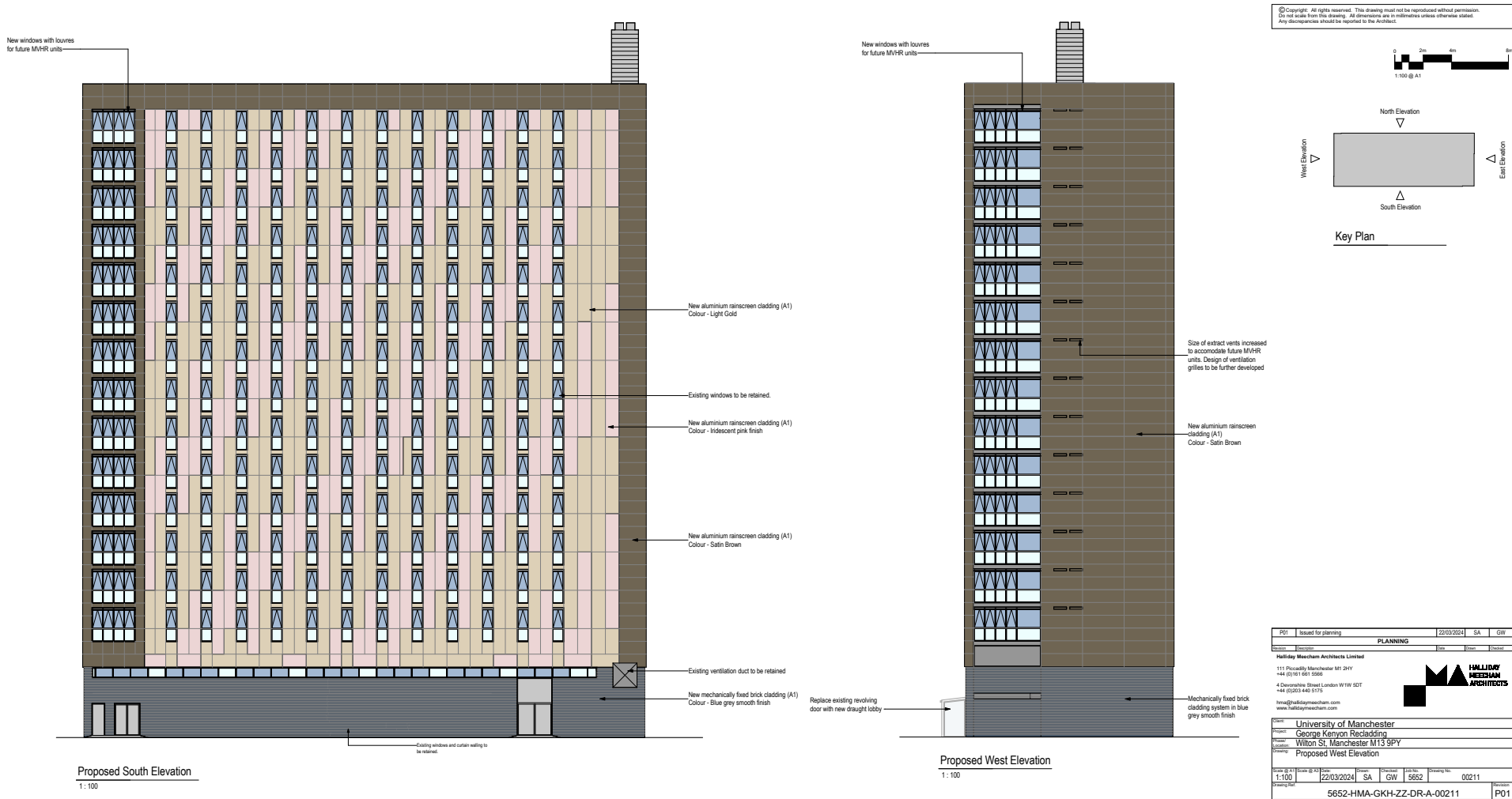


Figure 15 - Proposed Elevations

4.0 Proposed Design

4.4 Proposed Building Fabric and Materials

The proposed build up of the external wall consists of fully tested and A1/A2 rated materials where applicable. The following illustrates the technical performance of proposed materials.

George Kenyon Recladding Project Cladding System Certificates and Test Reports Matrix (STAGE 3) 09/02/2024												
Note - This matrix to be further developed and finalised in Stage 4.												
Type of Certificates/ Test Reports												
Cladding Products Proposed By Precision Facades	A Selection Criteria - Non Combustible Materials				B Fire Test Replication / Compatibility		C Non Combustible	D Back Up Information			E Maintenance / Life Spans	
	Fire Classification BS EN 13501-1 (covered by tests / DoP / manufacturers' information)	Building Regulation Part B Regulation 7 (2)	Fire Test - BS8414	Declaration of Performance DoP	A1 or A2 Materials had a fire test to EN 13501-1 or BS8414	Adjust materials selection to best replicate the fire test	Materials to be considered as reaction to fire Classes A1 and A1FL as provided for in Decision 2009/147/EC without the need for testing	BBA Certificate	CWCT	Other Tests	Design Life Span	Maintenance
Support, Cavity Closers & Sheathing Board												
01 - Floorspan aluminium support system	A1 (manufacturers' information)	A1			✓	✓ (Cortium & Aluminium cladding)	Aluminium		R4790237930 & R21210-Rev 1		TBC	Not required
02 - Vertical Full Fill Cavity Barriers F-Si Paraflam SEB	A1 (DoP)	A1	P119916-1001_BR 135_Precision Facade Systems Issue 1	2031-CPR-LX015122	✓	✓ (Cortium)	Mineral wool		NA	EN 1366-4:2006 Current version is EN 1366-4:2021	TBC	Not required
03 - Horizontal Open State Cavity Barriers F-Si Silverline (OSCB)	NA		P119916-1001_BR 135_Precision Facade Systems Issue 1		NA	✓ (Cortium)			NA	EN1363-1:2020	25 years	Inspect after 25 years
04 - Rockwool Steel Frame Slab Insulation to SFS	A1 (DoP)	A1		RWUK-CE-0245-03_english	✓	No change	Mineral wool		NA		Equal to wall structure	Not required
05 - Sheathing board 9mm Y-Wall	A1 (DoP)	A1		RCM005	✓	✓ (Cortium & Aluminium cladding)	Fibre cement	14/5109	R4790237930 & R21210-Rev 1		Equal to wall structure	Not required
Membranes & Fixings												
06A - Obex Cortex 0220 FR Breather membrane	A1 (DoP)	A1	P119916-1001_BR 135_Precision Facade Systems Issue 1	001-CPD-NG200	✓	No change	NA	17/5396			60 years	Not required
06B - Obex Cortex 0210 FR Paste adhesive	A2 (manufacturers' information)	A2			✓	✓ (Cortium & Aluminium cladding)	NA		R4790237930 & R21210-Rev 1		60 years	Not required
06C - Obex Cortex 0200FR Interface sealing membrane	A2 (DoP)	A2		0200FR Interface Sealing Membrane Class A2	✓	✓ (Cortium & Aluminium cladding)	NA	17/5396	R4790237930 &		60 years	Not required
06D - Obex Cortex 0823 FR UV Facade tape	E Exception under Reg 7 (3) (h) seals and fixings A1 (as a system) Tested with Breather membrane Report - 256-A	E Exception under Reg 7 (3) (h) seals and fixings			NA	No change	NA		R4790237930 & R21210-Rev 1		60 years	Not required
06E - Obex Cortex 0814 FR Board jointing tape	E Exception under Reg 7 (3) (h) seals and fixings	E Exception under Reg 7 (3) (h) seals and fixings			NA	✓ (Cortium & Aluminium cladding)	NA		R4790237930 & R21210-Rev 1		60 years	Not required
Insulation												
07 - Rockwool DuoSlab Insulation	A1 (DoP)	A1	P119916-1001_BR 135_Precision Facade Systems Issue 1	UK-IER-0031-01_english	✓	No change	Mineral wool	17/5402			Equal to wall structure	Not required
Cladding												
08 - Cortium Brick Tiles	A1 (test / DoP)	A1		FFA-00101021_001	✓	No change	Cortium brick tiles - clay units				Excess 35 years	Regular cleaning not required
09 - PVDF Lume Clad A1 Aluminium Sheet	A1 (test / DoP)	A1	P119916-1001_BR 135_Precision Facade Systems Issue 1		✓	No change	Aluminium				30 years	Chiming every 6 months
Proposed Cladding System												
08 - Cortium Brick Tile Cladding System	A1	A1	FFA-00101021_001 Cortium cladding system was tested with similar A1 rated materials (sheathing board, insulation, aluminium helping hand support system and membrane).					19/5893 Cortium cladding system could be fixed on SFS, timber frame or concrete with helping hand.	R4790237930 Cortium cladding was tested with Floorspan support system and 12mm thick Y-Wall sheathing boards.		NA	NA
09 - Taylor Maxwell Aluminium Cladding System with PVDF Lume Clad A1	A1	A1	P119916-1001_BR 135_Precision Facade Systems Issue 1 The following materials were used in the test: Aluminium helping hand bracket 12mm thick Y-Wall sheathing boards Following Obex products were used in the test: 0960FR Flame-retardant self-adhesive membrane (B rating) 0900FR Flame-retardant membrane (B rating) 0771FR Paste adhesive (B rating) 0220FR Breather membranes (A rating) Double-side tape (E rating) Cortex UV facade tape (E rating)						R21210-Rev 1 Aluminium cladding was tested with Floorspan support system and 12mm thick Y-Wall sheathing boards.		NA	NA
Notes of Fire Tests and Guidance:-												
CWCT testing covers: Wind resistance (serviceability); Wind resistance (safety); Water/tightness (dynamic and static); and, Impact resistance (hard and soft body).												
EN 13501-1 is a European standard that classifies the fire performance of construction products and building elements. It provides a system for assessing how materials contribute to fire growth and spread. This standard plays a significant role in ensuring building safety across Europe.												
BS 8414 Fire Testing is a rigorous procedure that evaluates the fire performance of external cladding systems used in high-rise buildings. By subjecting these systems to controlled fire scenarios, we can identify potential risks and vulnerabilities, ensuring that buildings meet necessary safety regulations.												
The Declaration of Performance (DoP) is the industry standard for declaring proof of the European Reaction to Fire Classification and is legally binding and regularly audited. It states the reaction to fire classification of the product in question. The DoPs are created as part of the CE marking process, for the insulation to be compliant with BS EN 13162, a mandatory part of the process is the declaration of a products reaction to fire under 13501-1.												
* Rockwool issues out the DoP as opposed to any form of test report.												

Figure 16 - Proposed Facade System Matrix

4.0 Proposed Design

4.5 Material Samples



Mechanically fixed brick cladding
Colour - blue grey smooth finish

Aluminium cladding - PVDF finish
Colour - iridescent pink (sakura)



Aluminium cladding - PVDF finish
Colour - light gold

Aluminium cladding -
PVDF finish
Colour - dark brown



Aluminium cladding - PVDF finish
Colour - iridescent pink (sakura)

Figure 17-20 - Proposed Materials Samples

4.0 Proposed Design

4.6 Visual Impact

CGI Artist impressions of the George Kenyon recladding project.

The proposals offer a more appropriate contemporary finish to the building whilst retaining the existing mass.

Apart from the new entrance configuration, the external walls will slightly project beyond their current position to exceed the values outlined in Approved Document L.

A glint and glare study is being completed and will be submitted as part of this application.



Figure 21 & 22 - Artist impression of proposed reclad

5.0 Access

5.1 Access

All existing access points into and around the building will be retained. The proposed entrance to the residential side of the building seeks to address existing operational issues. The revolving doors are currently not suitable for deliveries and students who have now resulted in using the side pass door reserved for individuals with accessible needs.

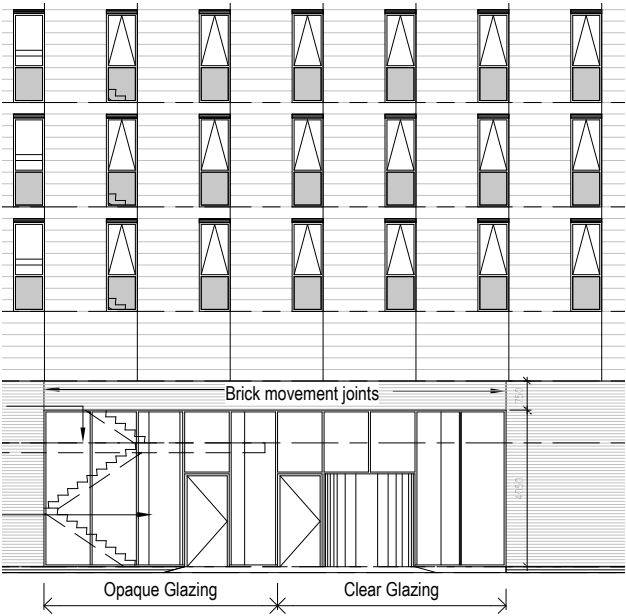


Figure 23 - Existing Residential Entrance Configuration



Figure 24 - Proposed Residential Entrance Configuration

6.0 Sustainability

6.1 Construction Waste Management

A concise site waste management plan is ongoing and will be provided as part of the full application.

6.2 Thermal Performance

The proposals seek to improve the overall thermal performance of the building. The proposed facade build up has been designed to provide a u value that exceeds current building regulations by 5%.

6.3 Embodied Carbon

An initial carbon reduction assessment was undertaken during the concept development stages of the project. An excerpt from the report states that:

“With the retention of the majority of the existing materials, the redevelopment of the site avoids contributing to the largest consumer of carbon within a development; Embodied Carbon.

...

By retaining a large proportion of the existing materials which have not come to the end of their lifecycle across the George Kenyon Building, this has ensured that the embodied carbon of the proposed development is greatly reduced. Embodied Carbon is seen to be the largest consumer of emissions over a building's lifespan, in comparison to the operational energy consumed, due to the following factors:

- Extraction of materials.
- Transportation of materials and workers.
- Adhesives, bonds, and fixtures.
- Disposal of existing materials.

The following images demonstrate an example of the difference between a refurbishment of an existing development and if a new-build were to replace this.”

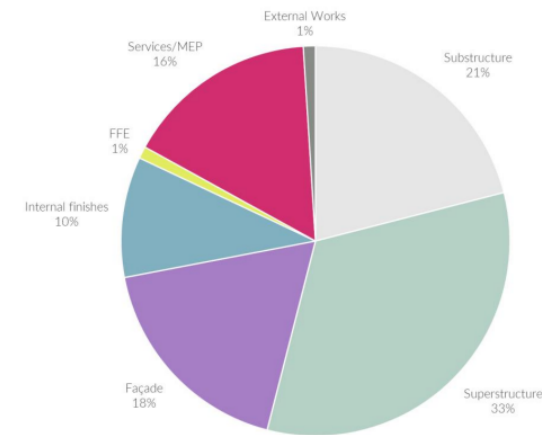


Figure 2: Example % of Upfront Carbon Consumed by each element of a proposed development of a new-build.

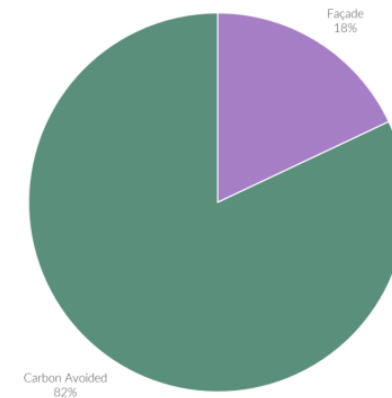


Figure 3: Example % of Upfront Carbon Consumed by each element of a proposed development for a facade upgrade.

Figure 25 - Image Extract From Carbon Reduction Assessment

