

3.9 Constraints and Opportunities

The proposed site is located in a prominent position within Newport city centre, adjacent to the Friars walks shopping centre to the west and the University of South Wales building to the east, and a short distance from the River Usk. The Kingsway multi-storey car park is located immediately to the west of the site.

The site has been analysed through the briefing and concept design stage, highlighting a number of key opportunities and constraints, which have informed the concept design development.

Constraints;

Refer to Stantec report for full details of all engineering constraints impacting the site including;

Following demolition of the former Leisure Centre to clear the site, a number of obstructions / remnant foundations are known to remain as shown in the Arup Foundation Removal and Earthwork Report. In summary these remnant foundations / obstructions included:

- Former basement in the north-east corner of the site where nine 'holes' were formed in the basement slab to facilitate future piling.
- Remnant foundations / walls in the west and south of the site where services were present.
- The potential for further remnant piles / foundations was identified as an unquantified risk by Arup.
- The electrical substation accessed from the Usk Way boundary remains on site, and will require necessary approvals from the Statutory Authority for relocation/ re-provision to suit the proposed new development.

The site was previously accessed via an existing vehicular access from Emlyn Street to the south. This access is proposed to be retained and re-used to serve the proposed new development for Coleg Gwent.

An existing access is also present from the taxi loop to the north of the site, leading to a dead-end service road adjacent to the Kingsway car park. This access road is understood to be subject to a stopping-up order being progressed by Newport City Council, with this area forming a part of the proposed site.

There are several buried services running around the site, predominantly around the edge of where the previous leisure centre building sat. These consist of a combination of electrical, telecom and drainage. Most notably are 2 sewer runs, one down the East along the edge of Usk Way, and one crossing the South-West corner of the site. These require large easements to be allowed for (3m either side) and are the main potential constraint in the ground. Refer to Stantec Civils & MEP information for more detailed information on the existing services present.

Limitations of the existing outline consent, and associated conditions to be met.

Houses to Emlyn Street to south - residential amenity, and heritage conservation area.

Emergency vehicle access to be maintained to Kingsway car park entrance/riser, through proposed area for new public realm (see condition on the outline consent).

Opportunities;

A prominent gateway site to the city centre, sitting alongside Usk Way, and adjacent to the University of South Wales, reinforcing the identity for the site as part of the Newport Knowledge Quarter. Key views to be considered from the north and south on approach routes to the site, as well as extensive views from the site out to the north towards the river.

To improve the public realm and connectivity for pedestrians and cyclists, with a new route linking Friars Walk to the north to Kingsway to the south along the west side of the site.

4.0

Design Development

4.1 RIBA 1 &2 - Key Design Principles

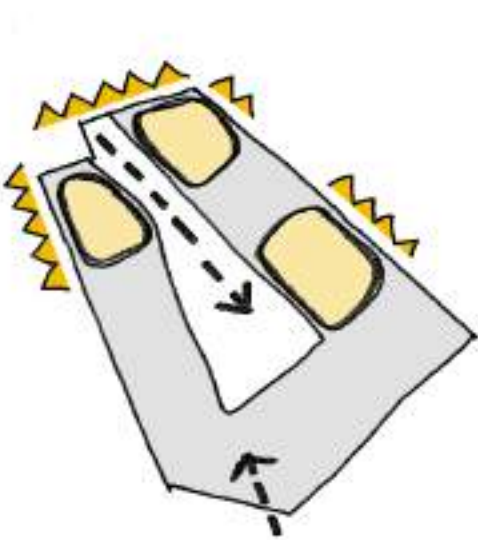
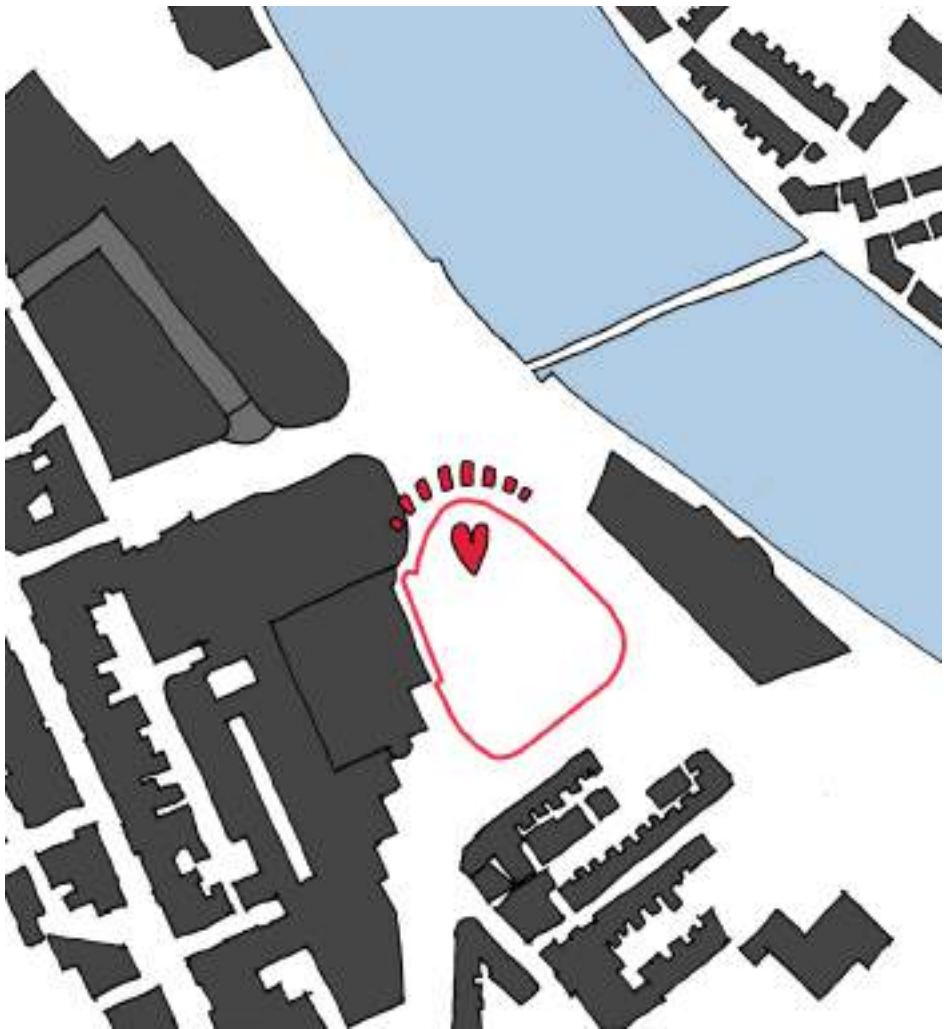
RIBA 1 & 2

The following pages document the initial design process undertaken at RIBA Stages 1 & 2. They demonstrate the rigorous process that that has occurred to develop the layouts into the detailed proposals at the end of RIBA Stage 3 that have been submitted as part of this application.

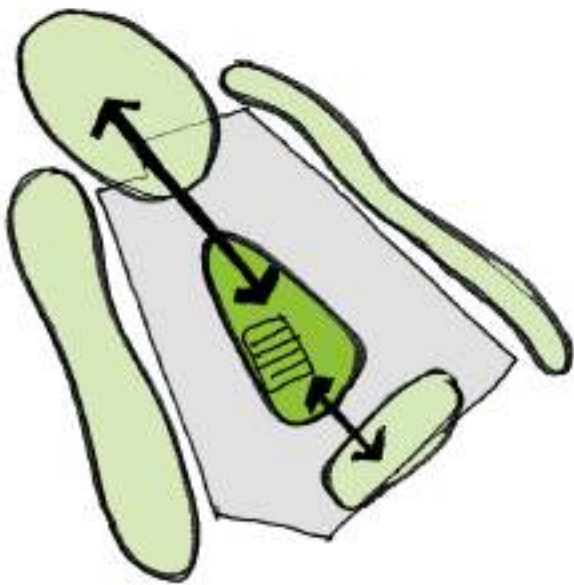
Key Design Principles

Whilst the physical constraints drive the practical aspects of what is possible - the site's location and relationships to surrounding buildings and features provide opportunities and guide us towards a solution that will integrate and enhance the city.

Given the prominent central location, the project needs to connect both visually and functionally with the public realm, to invite people in, and integrate itself into the heart of the city. Views into the building form a visual relationship with passers-by, whilst the panoramic views of the city and river will be a vital aspect for the building's users. Enhancing the external spaces, and drawing on biophilic design to create a facility that works with nature to enhance the internal and external environments.



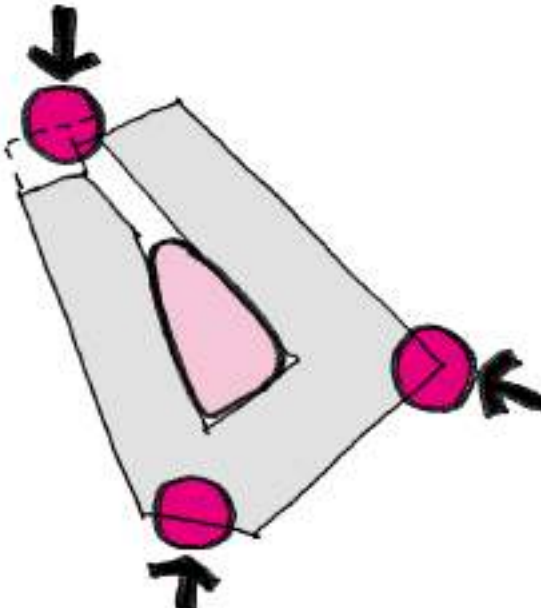
Views + Permeability



Green Spaces + Connections



Heart of the City + Belonging



Prominant Corners

4.2 Test for fit options and appraisal

Introduction

Following receipt of the project briefing documents, analysis of the proposed site, and initial client engagement including visits to the existing Coleg Gwent campuses and facilities, a series of initial design ‘test-for-fit’ options were developed. These are illustrated on the following pages.

The proposed options considered a number of potential solutions for the layout and massing of the building and external space on the site, reflecting the site constraints and opportunities, to provide the required gross internal floor area of 16,000m2, and key drivers including;

- The parameters of the outline planning consent, and associated conditions
- Affordability against the project budget
- Sustainability including achieving NZC
- The relationship of the development to the context and surroundings
- Creating a strong visual identity and prominence for the College on the Knowledge Quarter site
- Access and movement - safe pedestrian and cycle routes, segregated vehicle access for servicing, drop off etc
- Health and safety considerations for construction, maintenance, and in-use

An appraisal of the initial design options identified a preferred option to be explored further and to progress into RIBA Stage 2 Concept Design. The options were be appraised by project team members, using an agreed set of criteria with weighted scoring applied (shown at end of this section).

The test for fit options and selection of the preferred option was presented to the College and Technical Advisory team, receiving their acceptance and agreement.

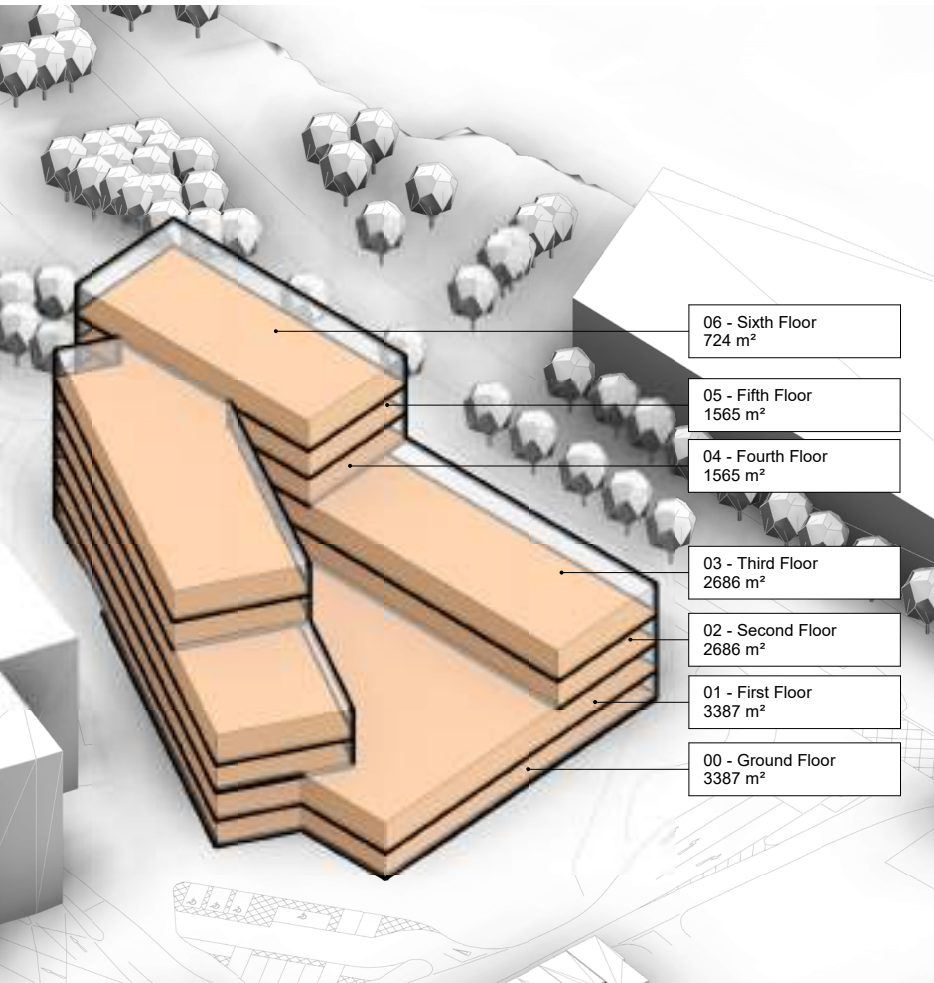
Option A

Pros:

- Efficient 3-sided layout with servicing space.
- Stepped massing reduces impact on neighbours.
- Strong identity and visibility from north/railway.
- Flexible floorplates around central atrium.
- Set-back entrance allows public realm upgrade.
- Potential roof terrace for secure outdoor space.
- Natural ventilation/daylight to upper wings.

Cons:

- Irregular form reduces efficiency.
- Stepped roofs add design/maintenance complexity.
- Unused gaps around restricted areas.
- Deep ground floor limits natural light.
- Large cantilever challenging to deliver.
- Northern 6-storey block risks being overbearing.



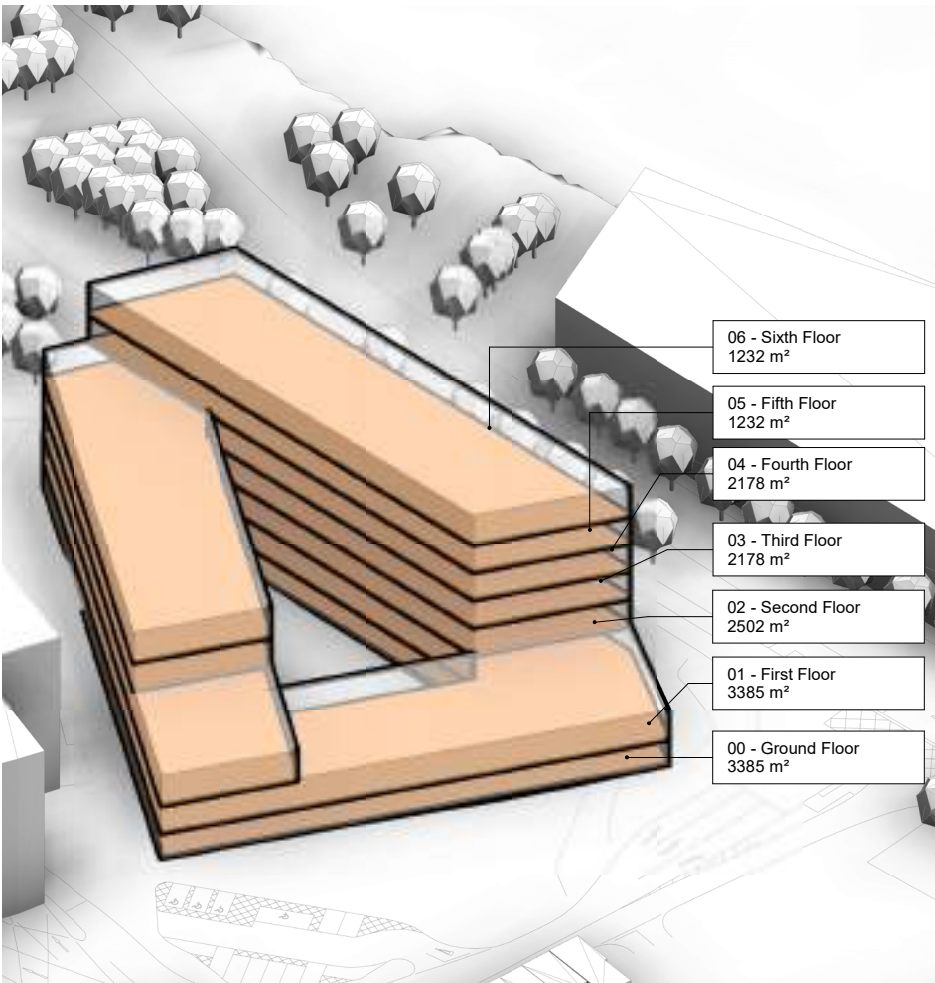
Option B

Pros:

- 3-sided form uses site efficiently with space for servicing.
- Central courtyard provides secure external space, daylight, and nat vent potential.
- NE block gives strong visual prominence from rail bridge/Usk Way.
- Stepped massing creates roof terrace opportunities.
- Southern site area available for operational use/servicing.

Cons:

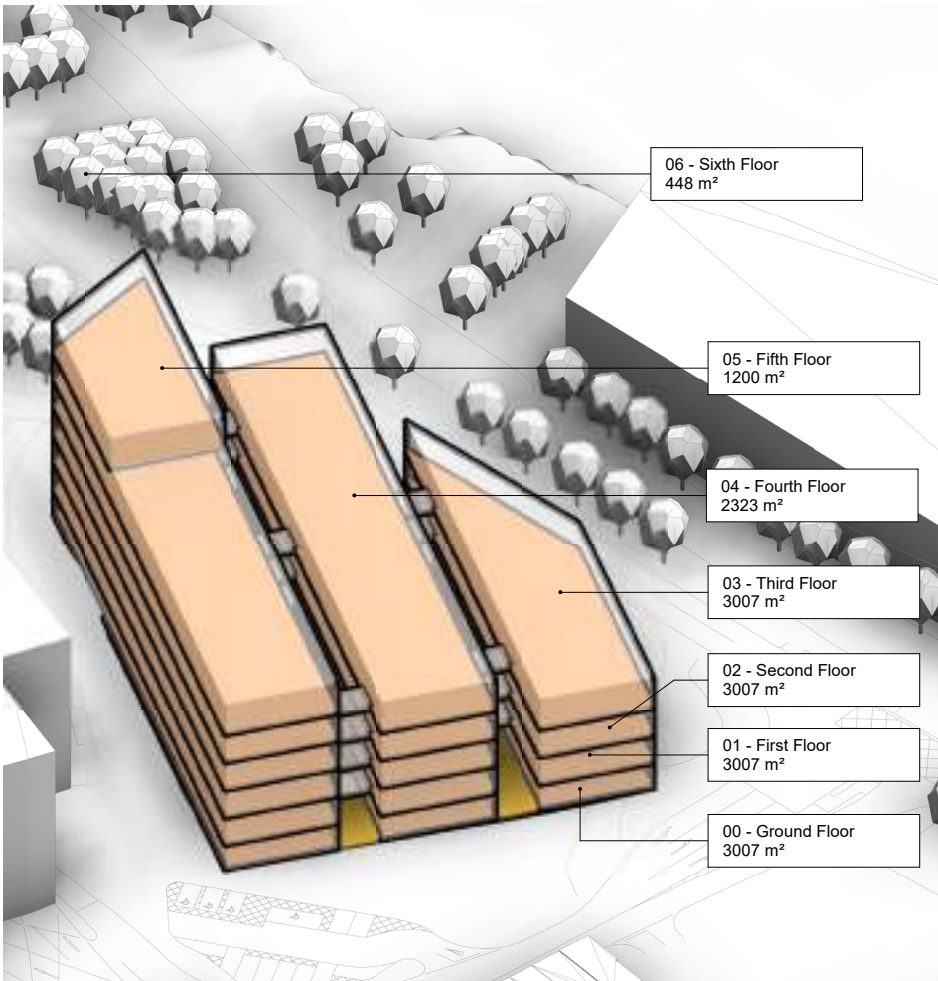
- Courtyards risk becoming stale if not maintained.
- Less usable ground/upper floor space; ground-floor demand may not be met.
- Large block could appear overbearing, esp. east/west sides.
- Layout may lead to corridor-dominated floorplates.



4.2 Test for fit options and appraisal

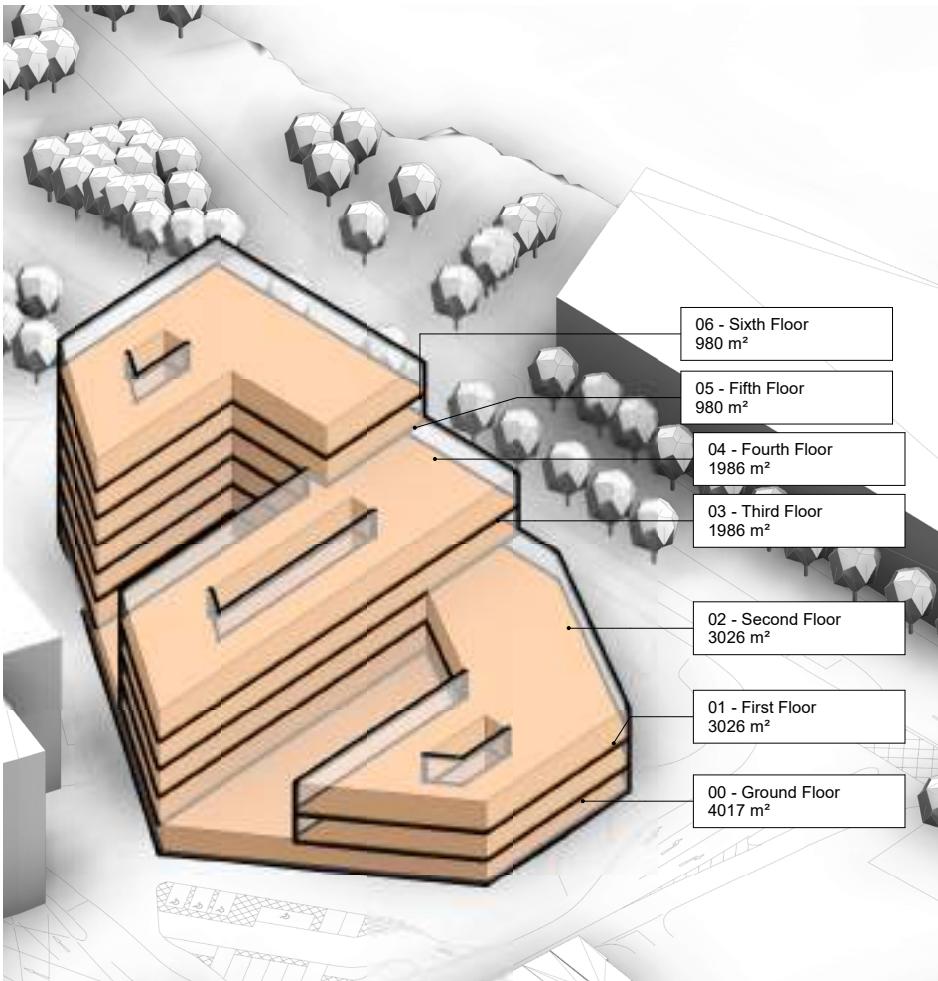
Option C

- Pros:
- Large ground floor use while retaining southern service yard.
 - Clear linear blocks aid wayfinding and visual identity.
 - Linear atria bring strong daylight and dramatic spaces.
 - Varied façades to north enhance visibility/identity.
- Cons:
- Bulkier massing from atria reducing GIA.
 - Linear atria may be high-maintenance.
 - No southern stepping ▪ tall mass close to housing.
 - West-side scale risks imposing “tunnel” effect.



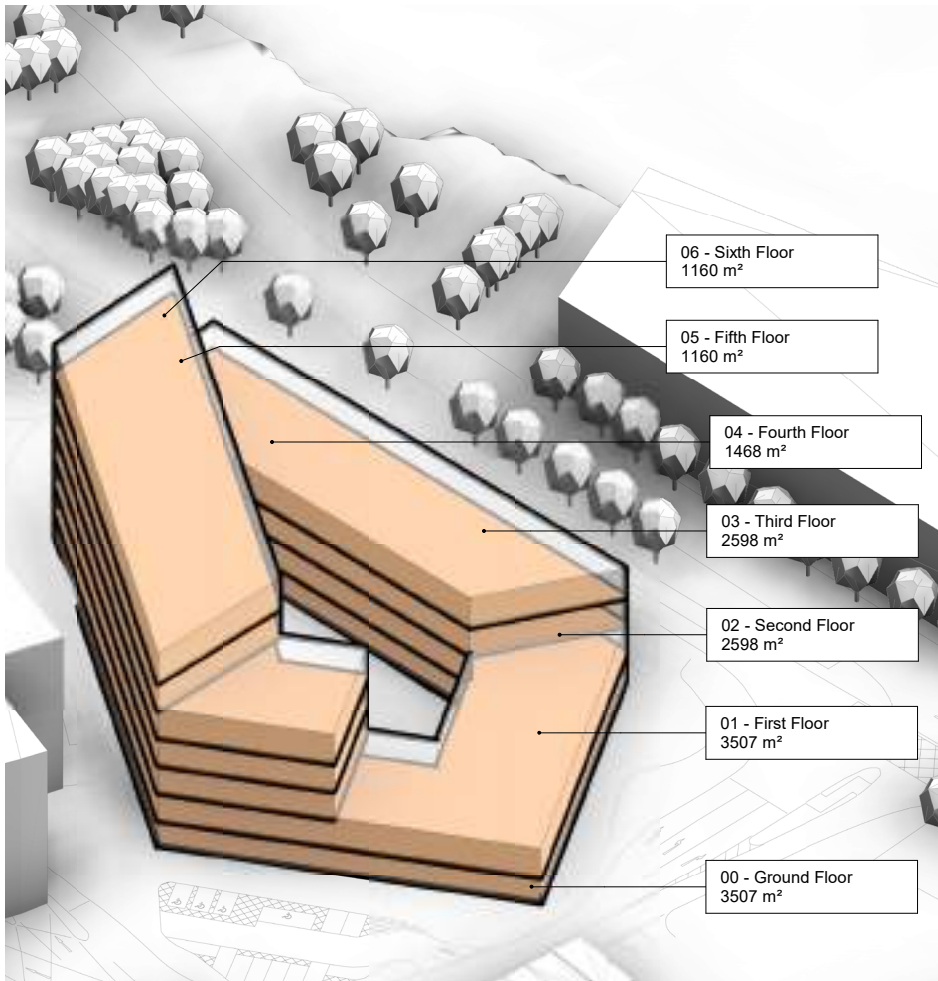
Option D

- Pros:
- Maximises ground floor footprint.
 - Good natural light/ventilation opportunities.
 - Strong block identity supports wayfinding.
 - Potential for roof terrace/garden spaces.
- Cons:
- Inefficient form with many angles/exposed façades.
 - North terrace risks being overshadowed/unused.
 - Limited workshop space at ground level.
 - Split blocks may hinder circulation/connectivity.
 - Restricted servicing space.



Option E

- Pros:
- Maximises development area with efficient ‘donut’ form.
 - Large secure courtyard with good daylight/ventilation.
 - Taller block on car park side suits workshops.
 - Consistent block sizes allow flexible room layouts.
- Cons:
- Limited external servicing space.
 - Courtyards risk becoming inactive.
 - Inefficient ground floor and no upper-level cross-links.
 - Reliance on double-loaded corridors.
 - West block massing could create tunnel effect.
 - Higher façade area reduces efficiency.



4.2 Test for Fit Options and Appraisal

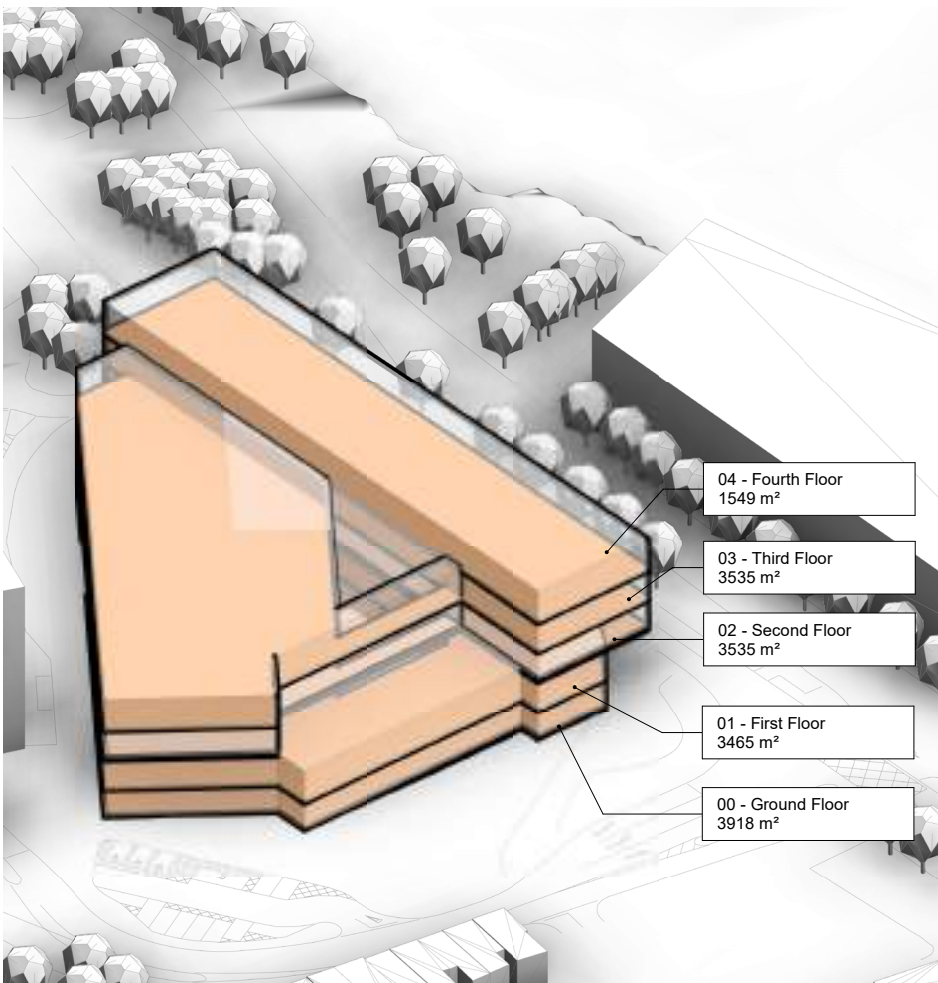
Option F

Pros:

- Efficient 3-sided form with good servicing space.
- Context-sensitive massing, lower height.
- Maximised ground floor use via chamfered footprint.
- Flexible floorplates for teaching/workshops.
- Central atrium brings light and creates focal space.
- Efficient form factor with fewer steps.
- Strong visual identity along Usk Way.
- Potential for roof PV/plant and secure roof terrace.

Cons:

- Irregular angled footprint may reduce efficiency.
- Deep ground floor reliant on borrowed light.



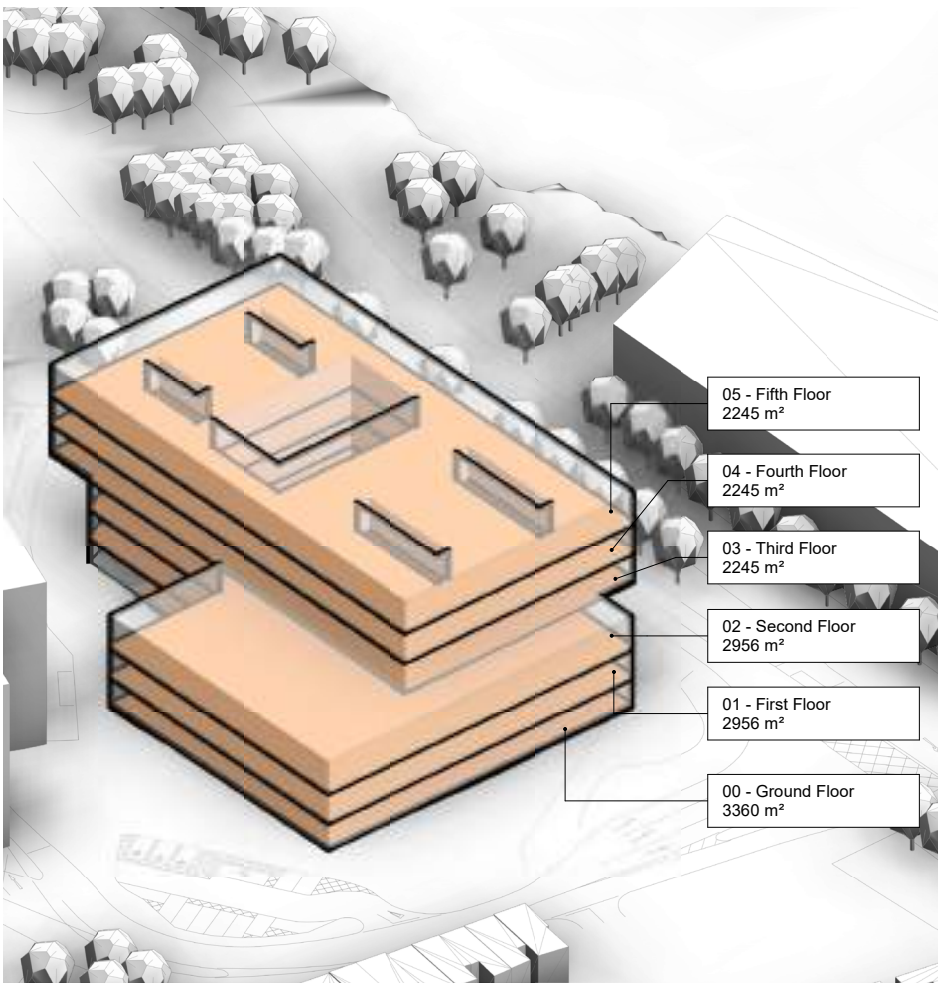
Option G

Pros:

- Chamfered L-shaped form maximises site use with good service access.
- Workshop placement reduces housing impact.
- Strong visual identity with teaching over workshops.
- Consistent block sizes, clear zoning, efficient form factor. Legible and compact circulation.

Cons:

- Deep floorplate reliant on atria/mech vent for light/air.
- Bulky massing may feel heavy
- Upper floor projections add complexity/cost.



4.3 Preferred option

The project team independently appraised and scored the options against the agreed criteria, before convening a meeting on 30th April 2025 to review and discuss the outcomes, and to produce a collated final scoring matrix.

The scoring was carried out by;

- Austin-Smith:Lord - Architects/ Landscape Architects
- WEPCo - Client/Project Management for project delivery
- Stantec - Consulting Engineers
- Glyndwr - Cost Consultant

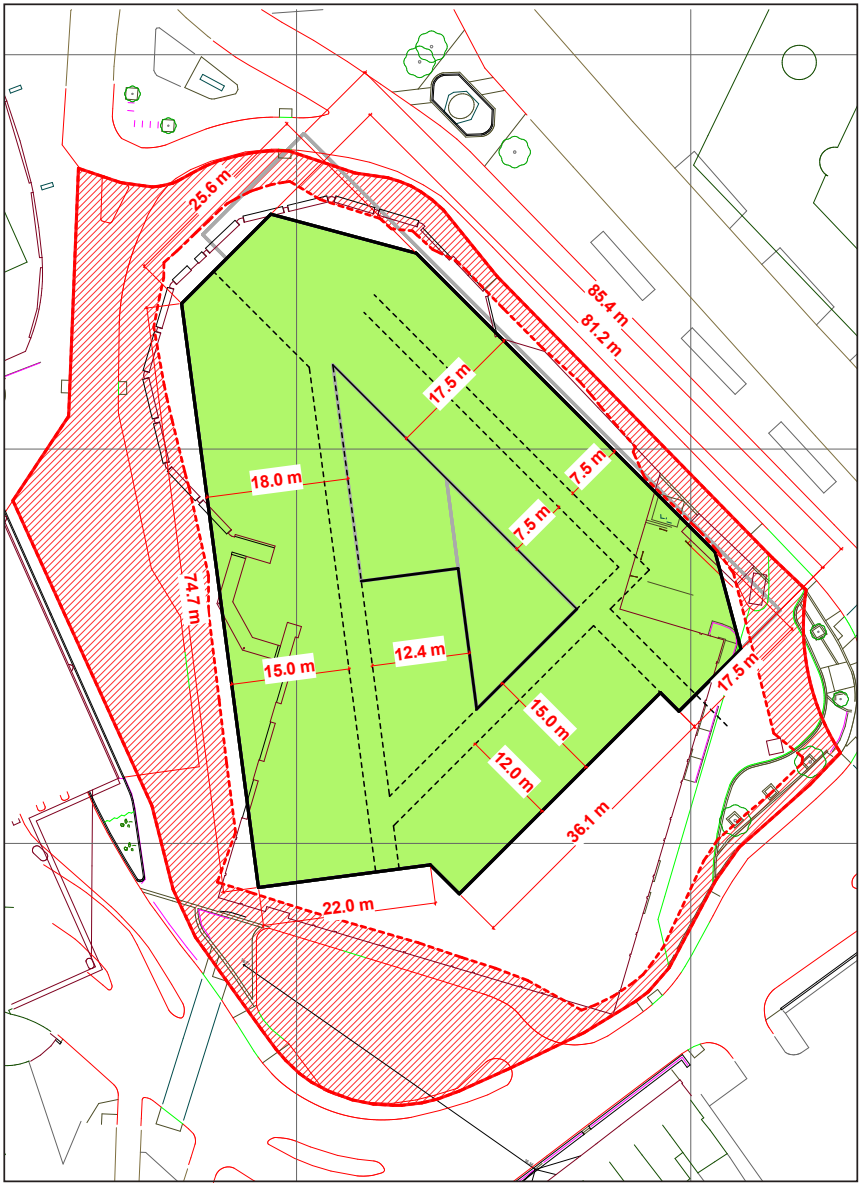
Additional input was provided by The Urbanists (Planning Consultant) and Lawray (CDM).

The results of the appraisal unanimously scored Option F highest, with Option G in second place.

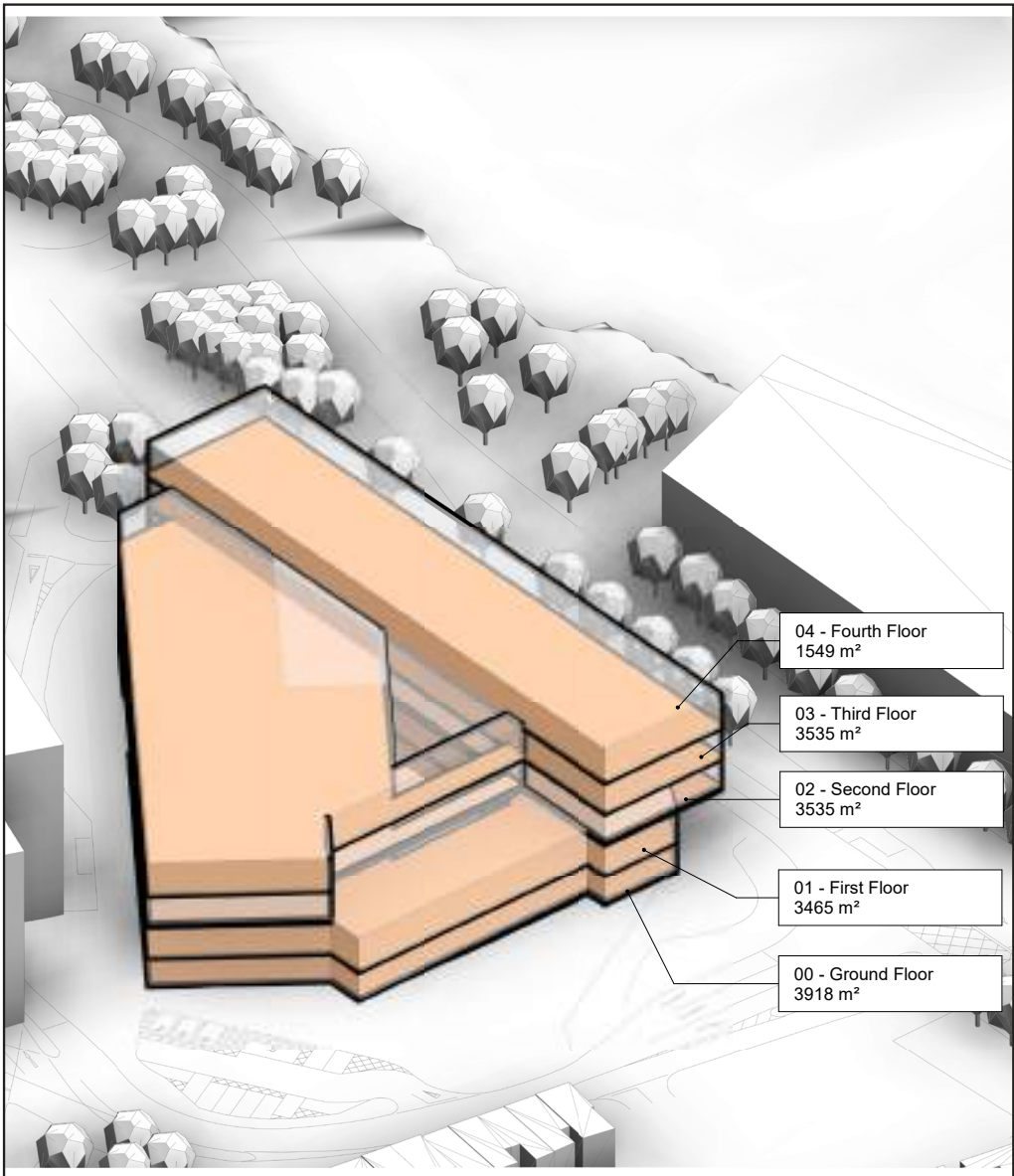
Option F was considered to address the key criteria well;

- Whilst the sketch view and plan shows more detail than other options in terms of projections and steps in the footprint, it was felt that the regular nature of the main floorplates, and relatively compact form would aid affordability and achieving NZC targets.
- Offering excellent opportunity to create a strong visual identity and prominence on the key approach routes from north and south-east.
- A good response to the site constraints and surrounding context, in terms of footprint, mass and scale. Strong elevations to Usk Way and to the north, with the mass stepping down to the south, and leaving external space for servicing and public realm.

It was agreed that Option F would offer the best opportunity to further develop and refine a design to suit the key requirements of the project brief, and was therefore recommended to be selected as the preferred option for the design team to take forward.



Approx. Floor Plates - Option F	
Floor Level	Floor Area
00 - Ground Floor	3918 m ²
01 - First Floor	3465 m ²
02 - Second Floor	3535 m ²
03 - Third Floor	3535 m ²
04 - Fourth Floor	1549 m ²
	16003 m ²



Note: Whilst this early test for fit suggests a 5 storey building, the final proposals are a 6 storey building, as a result of the concept and detailed development stages.