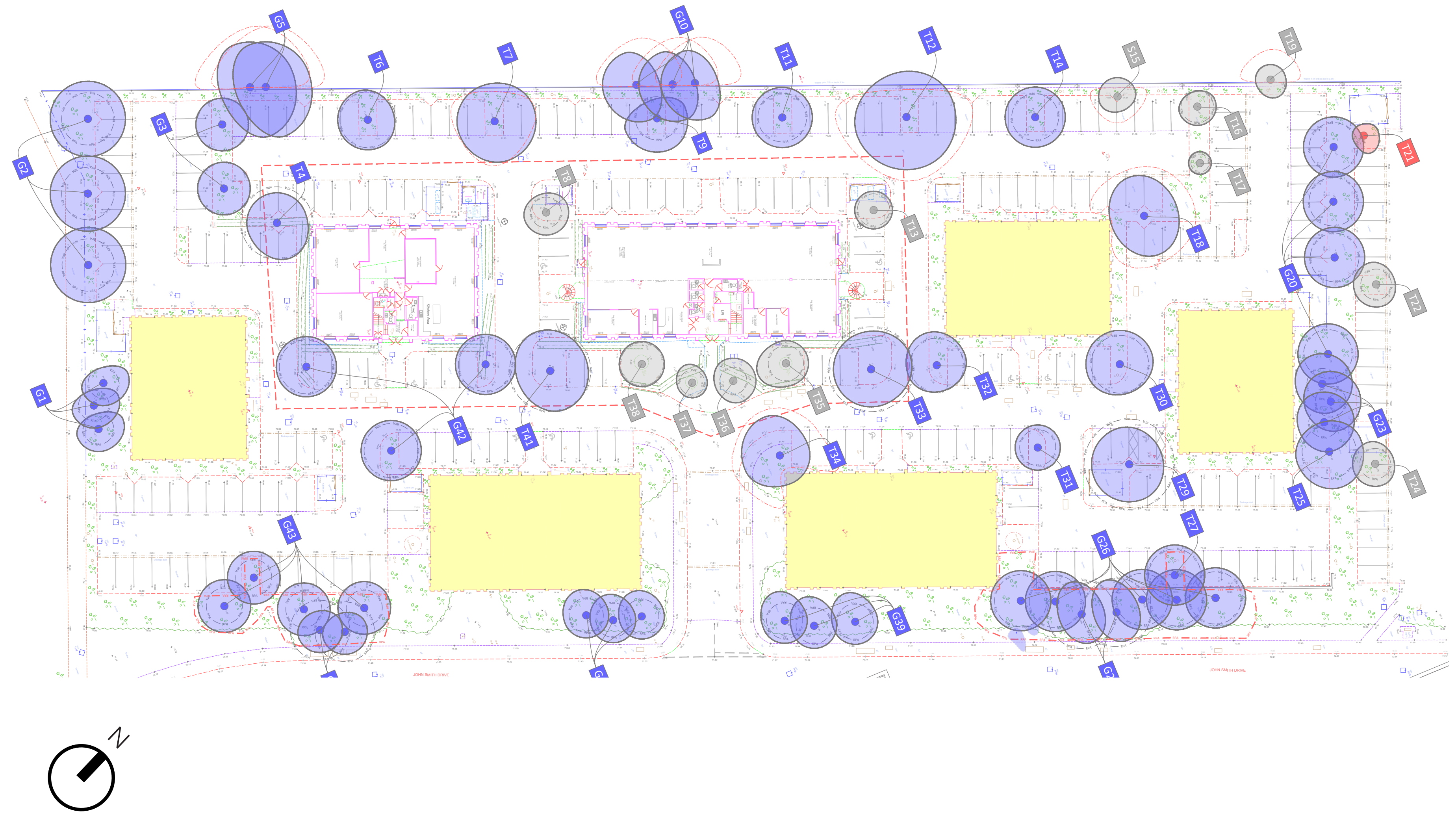
3.8

TREE SURVEY

Existing landscape

The survey demonstrated that there are no TPO on any trees within the red line boundary.



4.0 DESIGN APPROACH

BUILDABLE ZONE

As outlined on the previous site constraints pages, the proposal seeks to move the new building further away from the residential properties at the rear of the site than the existing building were , thus creating a large rear set back on the site, which will contain parking and soft landscaping. Further set backs are introduced at both ends of the site, providing space for further landscaping and access around the building and finally a set back to the front accommodates the structured landscape zone (site infrastructure and services) and provides space for further landscaping, facing the public realm.

KEY

- Application site
- Existing mature trees to be retained
- Buffer zone between neighbouring residential land use
- Buffer zone to adjacent commercial property and vehicle access to rear of site
- Services zone
- Set back demarcation
- Landscape buffer
- Structural landscape

SITE FRONTAGE AND LANDSCAPE OPPORTUNITIES

Minimise number of trees identified for removal.

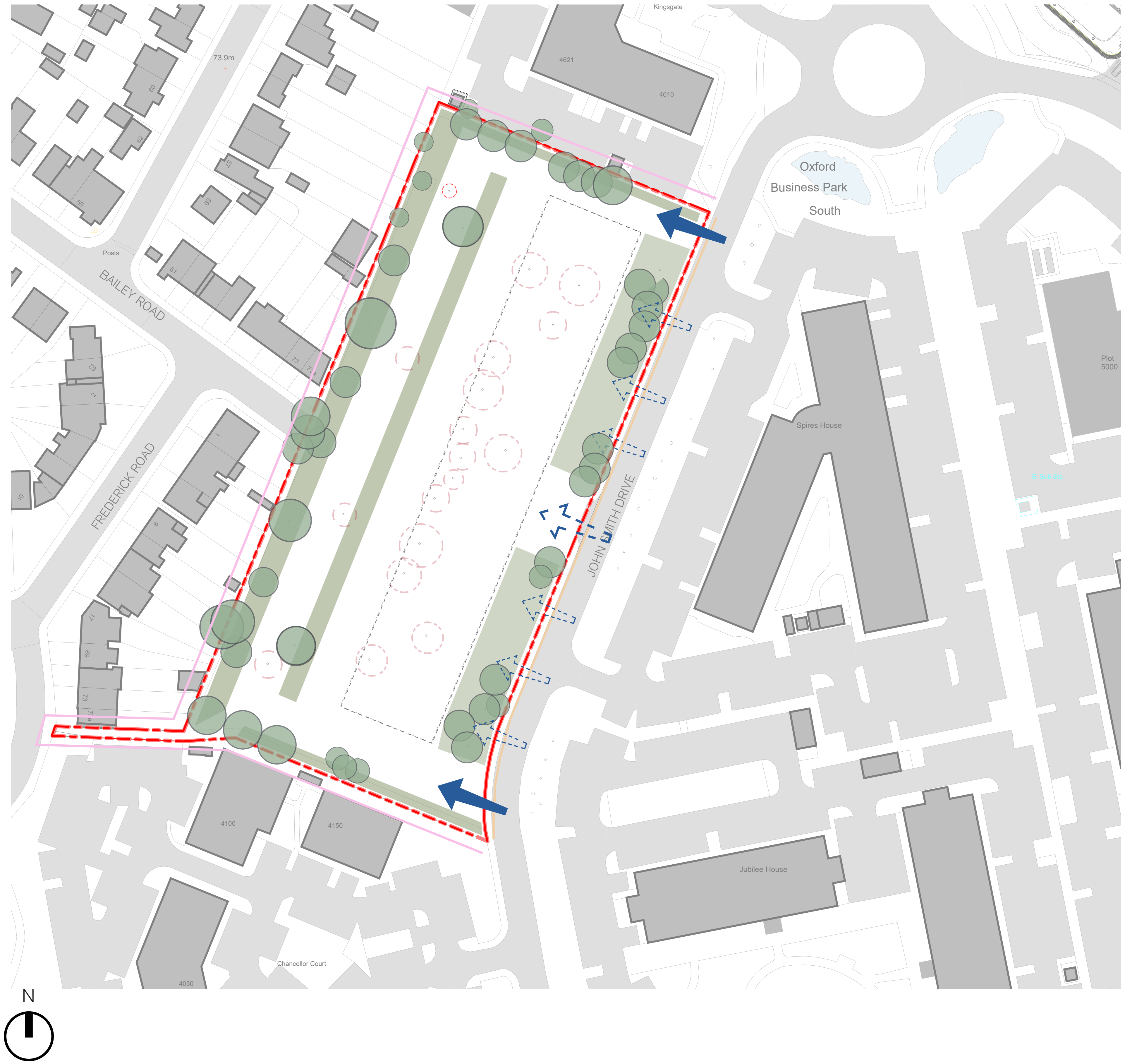
More mature trees to the exterior of site to be retained.

Utilise existing trees to provide a buffer for existing context and road noise.

Establish and integrate existing landscape zone.

KEY

- Application site
- Existing mature trees and planting to be enhanced
- Trees identified to be removed and to be of lesser quality
- Softer permeable frontage with buffer and communal uses
- Opportunity for soft private landscaping and parking
- Vehicular entrance
- Public entrance/focal point



4.3 GROUND PLANE OPPORTUNITIES

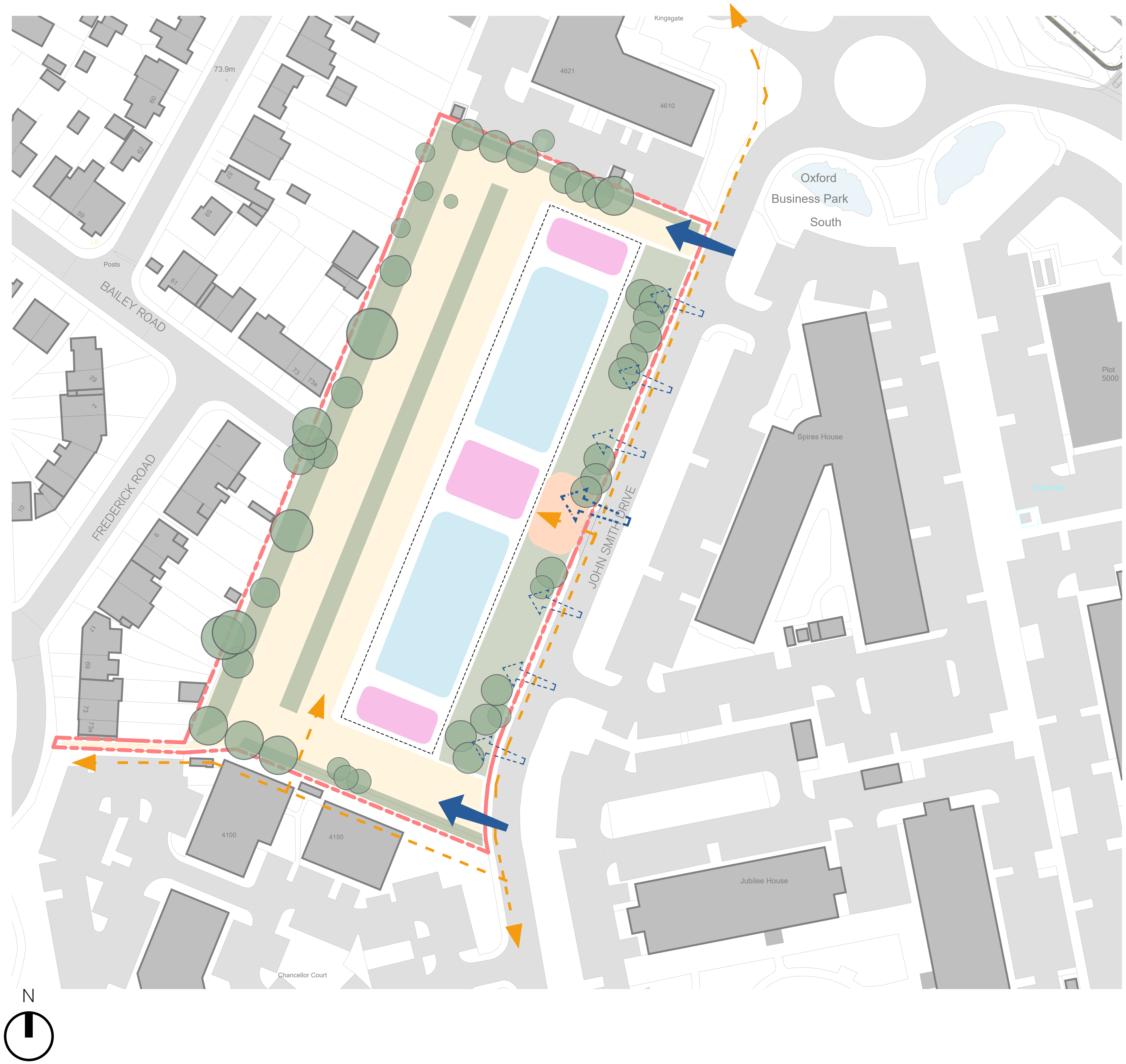
Central core

Side secondary access

Side utilities

KEY

- Application site
- Existing mature trees
- Entrance and amenity
- Labs/office
- BOH/services
- FOH/Amenity area
- Parking/access
- Landscaping
- Cycle/pedestrian routes
- Vehicular access
- Public entrance/focal point



SITE CHALLENGES & OPPORTUNITIES

1. Hard boundary to the back of the site against the residential area (level difference, solid fence for privacy), together with existing underground services, existing trees and 1.5 m level difference do not allow for a connection to Bailey Road on the west of the site.

2. Structural landscaping to the front to be retained (new building to be set back from the road).

3. Existing footpath on the southern boundary to be retained and enhanced to provide connection to public transport (existing bus stop).

4. Long street front on John Smith Drive can be used to create a sense of arrival from the roundabout. Opportunity to create multiple points of access and circulation ring around the new development.

5. Pattern of buildings being set back from the main roads and landscape buffer zone between business units and residential units.

KEY

- Application site
- 1.5m level change with retaining wall and timber fence to back of residential area
- Structural landscape buffer zone
- Existing underground services (non build zone)
- Main pedestrian/cycle routes
- Main vehicle routes into the site
- Existing mature trees
- Residential/commercial set back
- Buildable footprint
- Opportunity for improved active frontage
- Road noise

4.5 TWO BUILDINGS OR ONE

Initially the option of either a single or two smaller buildings were considered for the site.

Initial studies were undertaken to show two separate buildings upon the plot with central access retained, however this central road reduced the opportunity for softer landscaping, communal spaces and an active frontage. Access to the sides of the plot aligned with existing pathways and rows of parking on neighbouring plots allowing a more central focus to the building, site and landscaping that is not dominated by the car.

Two building forms were explored but found to be less commercially efficient nor sufficiently flexible for the plate tenancies, with two of everything, including entrances, receptions, lift cores, staircases all of which make the overall site more carbon inefficient.

A singular footprint allows access roads to either side of the building creating a loop road that improves access, required for life science use.

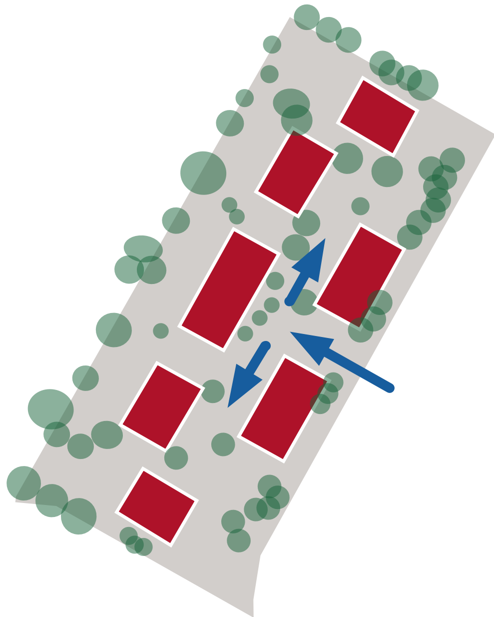
PROS' AND CONS'

A larger central car free landscape amenity area can be provided rather than the smaller piecemeal landscape area created with two buildings.

A single building with central entrance and building facilities is more efficient spatially and allows for greater flexibility as potential tenants could take the whole building or 1/4 of a single floor.

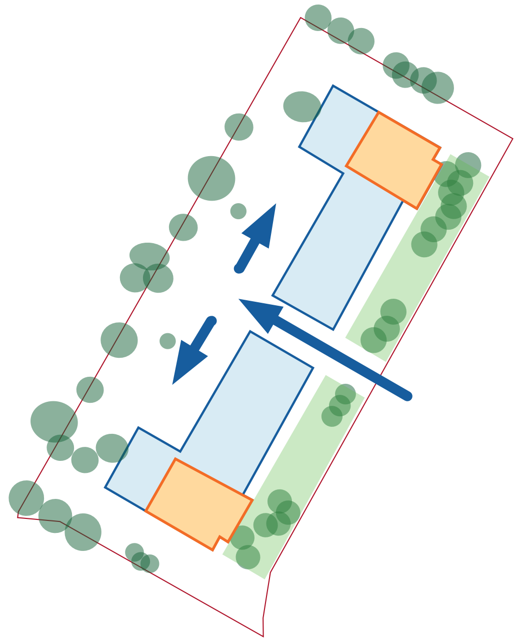
A single building with one central amenity core is more energy efficient than having two buildings each with an amenity core as the overall number of facilities per occupant is reduced by greater sharing of provisions.

Using stacked plant rooms, individual floor plates can be serviced separately per floor and per wing, thus maintaining maximum flexibility and efficiencies.



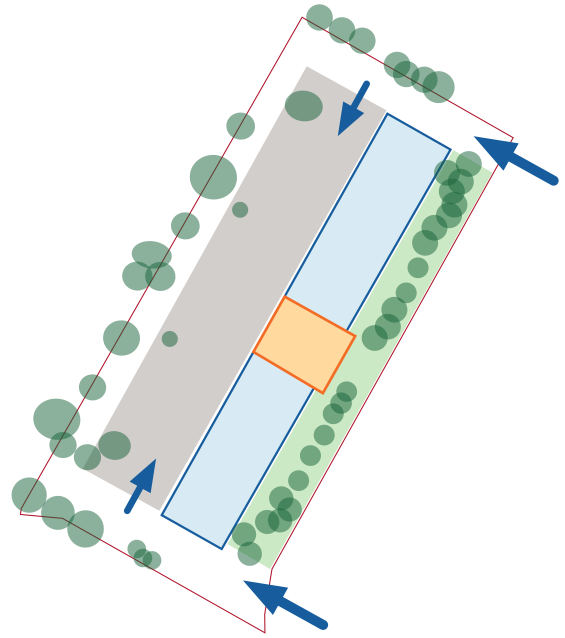
EXISTING CONDITION

MULTI BUILDING
SINGLE SITE ENTRANCE



PROPOSED OPTION 1

TWO BUILDINGS
SINGLE ENTRANCE



PROPOSED OPTION 2

SINGLE BUILDING
SITE TWO ENTRANCES

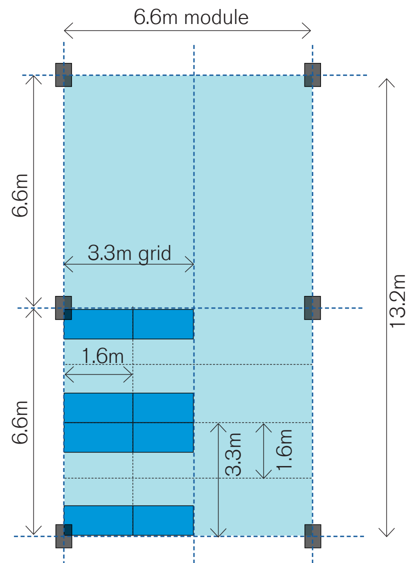
A NEW USE: SCIENCE LAB PRINCIPLES - FLOOR PLAN

MODERN LABORATORY DESIGN

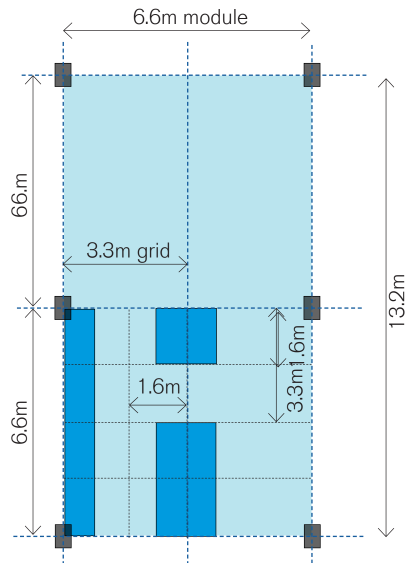
This focus' on increasing the interactions between researchers through the use of shared facilities, i.e. both scientific & social, increasing the opportunity for researchers to meet, increasing cross fertilisation of ideas between departments and scientific disciplines, aiding scientific advancement, and better utilisation of expensive and space hungry equipment,

Research buildings will typically have many researchers with different laboratory design requirements. To cater for this, buildings should be designed on the basis of a regular planning module in order to provide the flexibility and adaptability need to cater for these different requirements.

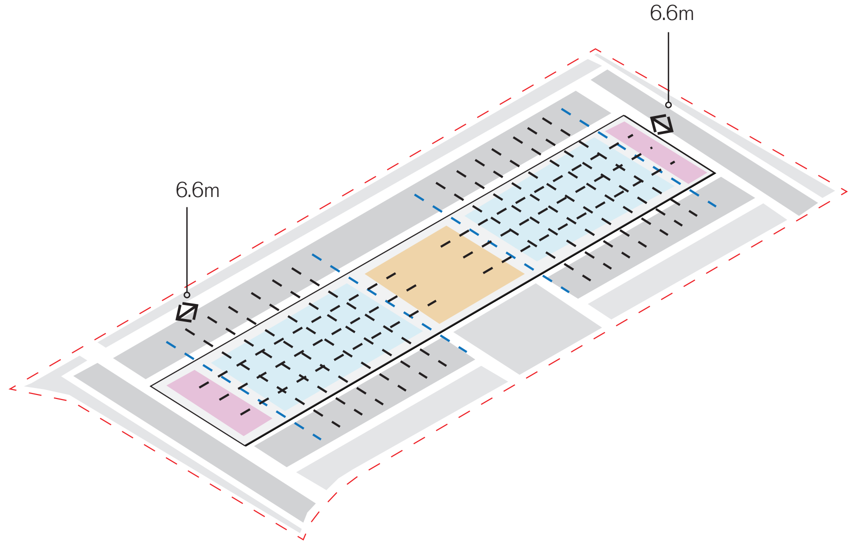
The laboratory module is the basic conceptual building block and provides regularity and repetitiveness of area and services for the building. Carefully organised and well designed, a lab module will fully coordinate all the architectural and engineering systems.



'HORIZONTAL' BENCHING SOLUTION



'VERTICAL' BENCHING SOLUTION

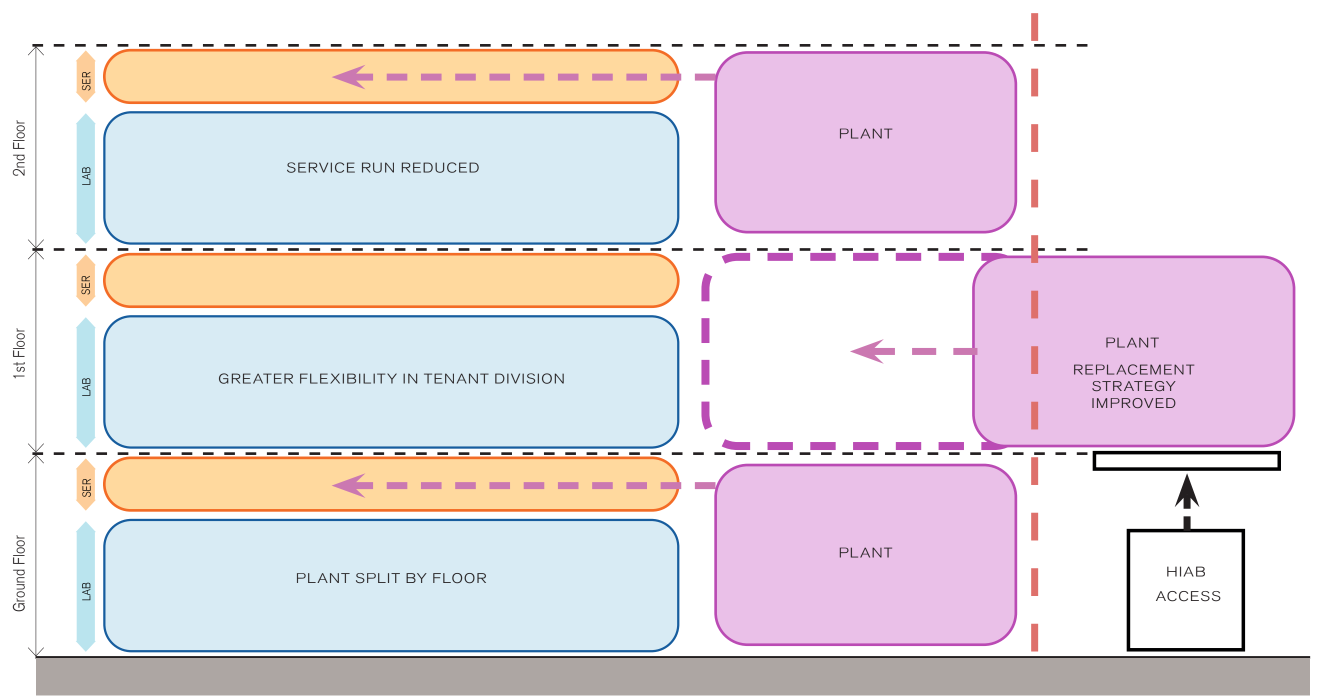


LABORATORY PLANNING & STRUCTURAL GRID

The basic laboratory module proposed, has a width of 3.3m which is based on two rows of furniture and equipment (each row 750mm deep) on each wall, a 1750mm aisle, and 100mm allowed for walls that may separates one lab from another. This has been proven to be the most efficient module for laboratory planning and is the doubled to provide an efficient structural grid of 6.6m

FLOOR TO FLOOR HEIGHT

Many modern laboratories require highly controlled environmental conditions and need to accommodate large scientific equipment, this necessitates good floor to ceiling heights of around 2.7m and large service zone of around 1m to accommodate specialist laboratory services, this has driven the need for a 4.2m Floor to floor



STACKED PLANT

As mentioned above many laboratories require highly controlled environmental conditions, necessitating large supply and extract air ductwork. To help reduce the need for this, improve plant efficiencies and aid flexibility, modern labs now use a decentralized approach to servicing laboratory floor plates, plant is located on each floor adjacent to the floor plate it serves. This reduces the size of the ductwork, reduces the need for large service risers (taking up valuable space within building cores), reduces the length of service runs, improving the efficientcy of plant and allows plant to be tailored to the laboratory it is serving. In this instance plant is to be situated at the ends of each wing serving each floor separately, in stacked plant rooms. This will allow plant for each unit to be replaced separately (increasing flexibility) and avoids the need to crane replacement plant up onto a central roof top plant room

4.7 DESIGN CONCEPT

As set out in the applicant's brief, this project is not simply about building a life science building. It is about delivering an appropriate setting in which occupants can enjoy the connectivity and proximity benefits of working within the city. They are passionate about regenerating a business park that has had little investment over recent years and creating a state of the art facility which will intertwine and boost the existing knowledge economy.

- Efficient

- Responds to the surrounding urban context

- Creates a sensitive sense of arrival

- State of the art life science building

Working conceptually with the development patterns highlighted above, the relationship between the proposed life science building orientation, access and land around them, our aim was to position the facility in a more central position, sitting it down into the lowest part of the site to help minimise impact and enhance its connection to the landscape.

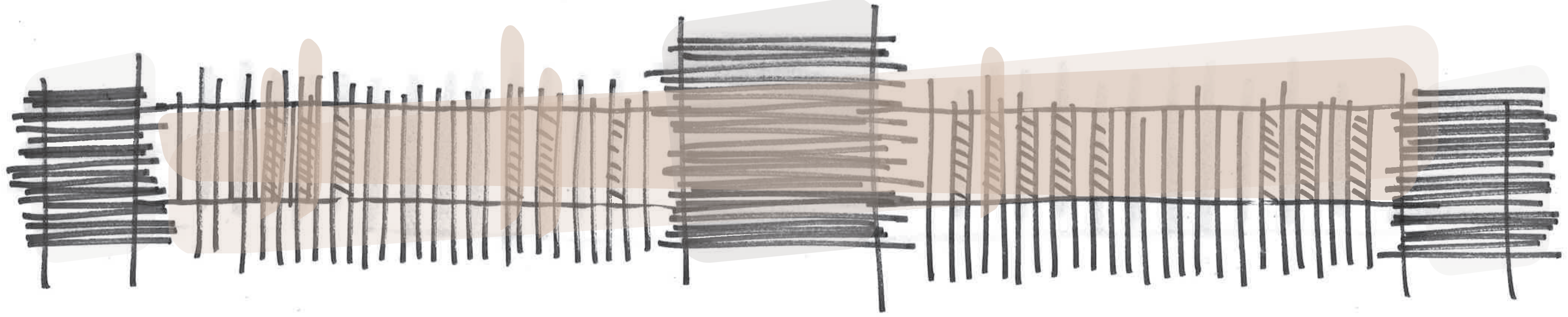


Figure 31. Concept to break the uniformity of a singular block

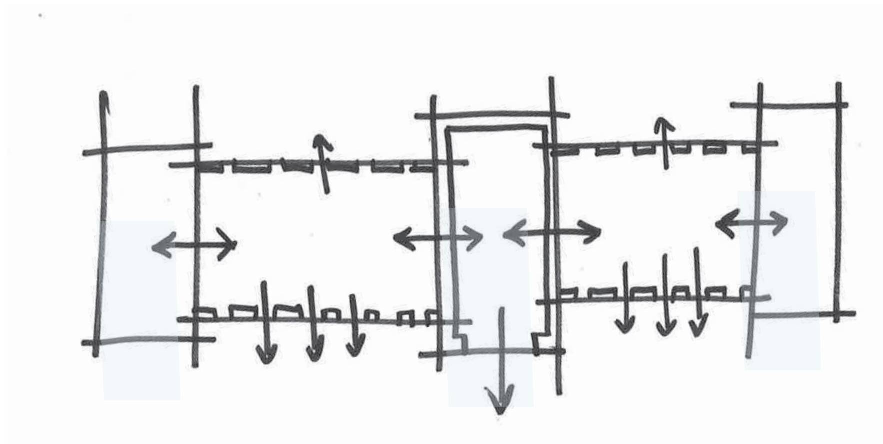


Figure 32. Concept to break the uniformity of a singular block

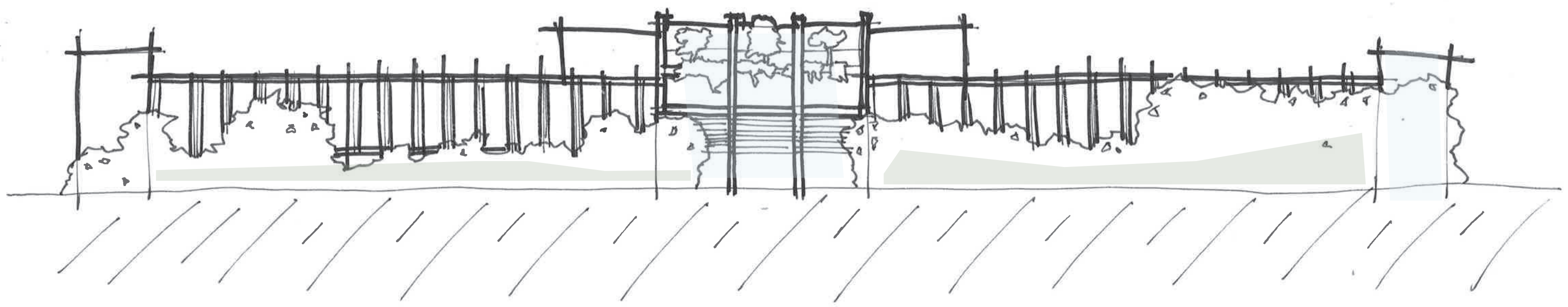


Figure 33. Concept to break the uniformity of a singular block

MASSING APPROACH

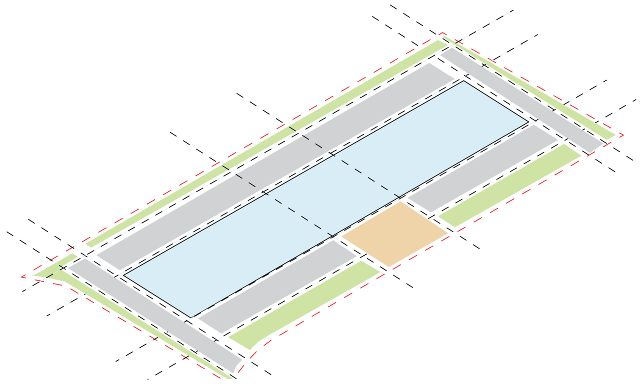
The following diagrams explain the development for the mass of the proposed building.

The building zone derived from the above was then split into distinct functions with a single central entrance and shared building facilities core (including Vertical circulation), serving two wings, with stacked plant and service cores at each end. This allows each floor plate to be serviced independently, maximising flexibility, efficiency and thus sustainability.

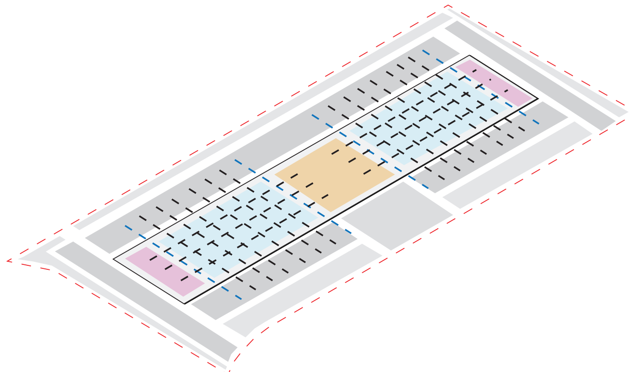
The laboratory floor plates were then set out based on an 'ideal' lab grid of 6.6m, this was then adjusted slightly to allow for other building requirements such as parking to the rear and later the further reduction in massing to Level 2. However the basic 6.6m grid remains along the length of the laboratories with the depth set at around 24m, sufficient for a front to back tenant split and laboratory use.

The footprint was then extruded to three storeys, with a reduced fourth storey housing roof top plant either side of the shared facilities core, which at this level contains a roof top cafe to the frontage overlooking John Smith Drive and ARC Oxford beyond

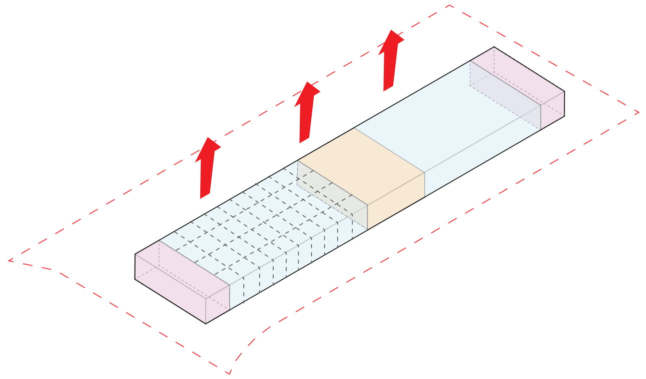
The central core was then pulled forward and reduced in size at level four, creating an impactful entrance form and clear sense of arrival, and also helping to visually break down the length of the building. Pulling the core forward and reducing it in size also allows the roof top plant to be stepped back reducing its mass when seen from both the front and more importantly the residential properties to the rear.



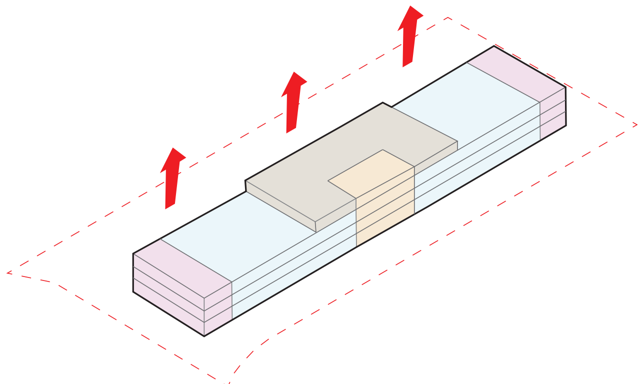
BUILDABLE ZONE - Site Parameters, set back lines defines emerging foot print



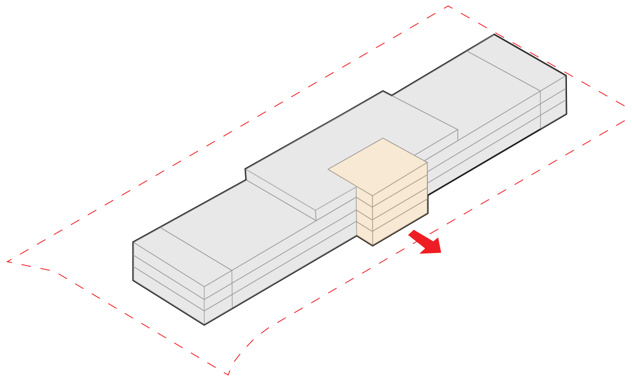
BUILDING ZONE SPLIT - Plan broken down into building zones



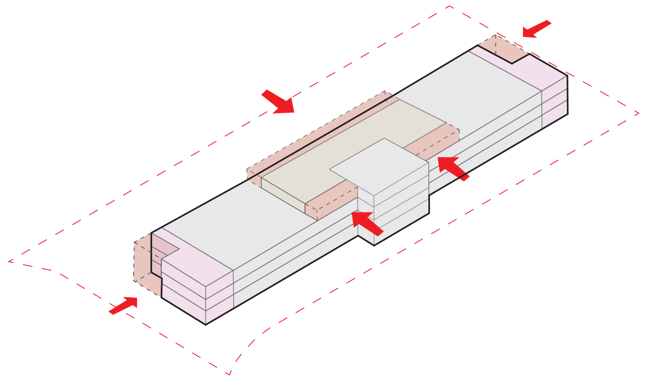
BASIC VOLUME - Extruded footprint to create basic mass of building



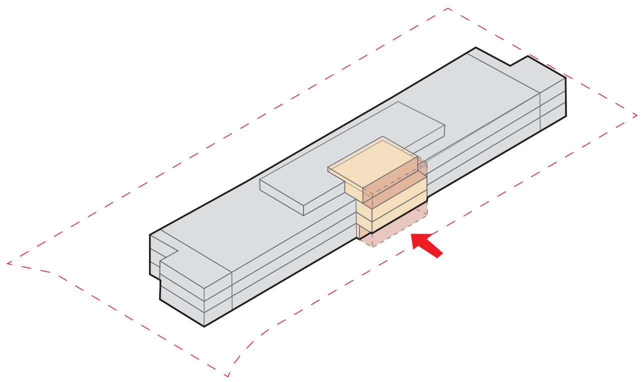
KEY DECISION 01 - Block extended up and roof plant added



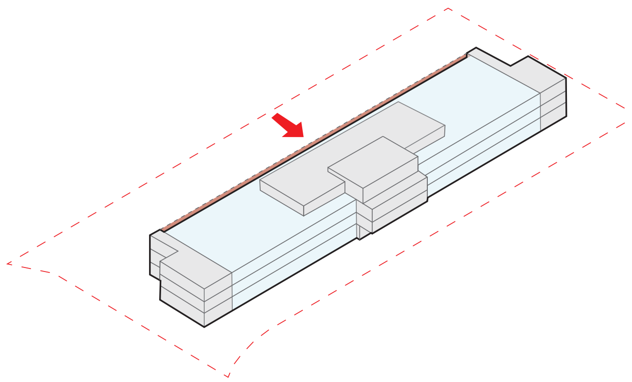
KEY DECISION 02 - Central block pulled forward defining the entrance, breaking down the elevation and allowing mass of plant to be stepped back



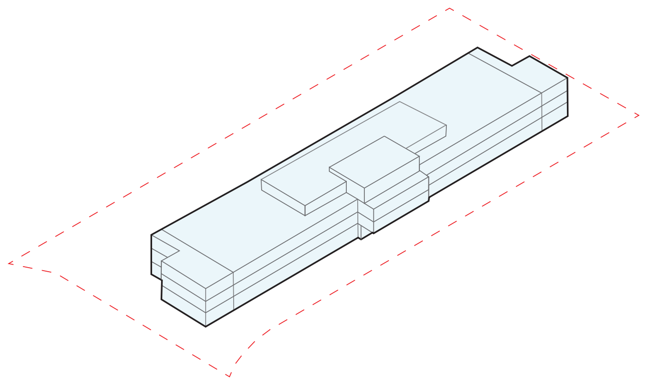
KEY DECISION 03 - End cores and roof plant further defined and reduced in scale



KEY DECISION 04 - Crown stepped back at ground level and third floor, further defining the entrance and breaking down the built form, whilst creating an active frontage and a sense of place



KEY DECISION 05 - Set the third floor further back, further increasing the distance from the residential context



RESULTING MASS - Sculpted mass from key design moves

4.9

IMPACT UPON LOCAL RESIDENTS

The following diagram shows the relationship of the existing and proposed massing against the existing site boundaries. This shows how the positioning of the building and the design with stepped upper floor and greater distance from the boundary mitigate the additional height when compared to the existing buildings at Nash court.

As you can see the 25 degree vision splay is not interrupted by the existing or proposed forms which may impact on natural light. The further the new building is located away from the residential units the lesser the impact.

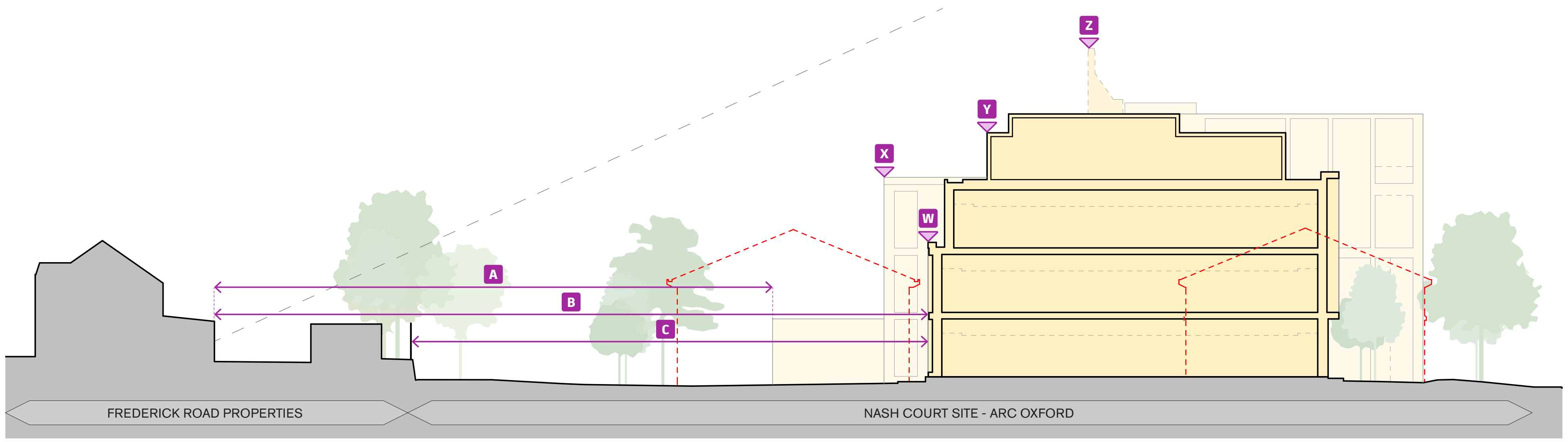
Building heights

The following diagram illustrates the building heights of the surrounding area to provide some context to Plot 4200.

Neighbouring residential areas are generally characterized by two or three storey terraced houses with gardens backing onto the site.

Existing plots at ARC Oxford generally form clusters of commercial units varying from 3 to 5 storey office blocks, with Trinity House having recently obtained planning permission where the height of the new building is 6 storeys (GF + 5 floors). The approval of Trinity House reflects a transitional change to the typology and scale of buildings at ARC Oxford.

The difference in height has been carefully considered with the proposed being seperated from the residential boundary by locating it at as far from dwellings as possible. The typical distance from the residential prioperties provides a minimum of 36.3m. The distance provided provides a comfortable barrier between the two, minimising any potential for overlooking.



		PROPOSED
	DISTANCE FROM REAR OF CLOSEST FREDERICK ROAD PROPERTY	
A	MINIMUM DISTANCE	36.3 m
B	TYPICAL DISTANCE	46.4 m
	DISTANCE FROM REAR (WEST) FENCE	
C	TYPICAL DISTANCE	33.6 m
	HEIGHT ABOVE GROUND FINISH FLOOR LEVEL	
W	EAVES / FACADE EDGE	8.8 m
X	RIDGE / FACADE EDGE	13.4 m
Y	LOWER EDGE OF PLANT SCREEN	15.9 m
Z	INDICATIVE TENANT FLUE	21.4 m

PROPOSED GROUND FINISH FLOOR LEVEL = +72 025 AOD.

HEIGHT OF TENANT FLUES AS DEFINED BY BS EN 14175

5.0 FACADE STRATEGY

5.1

FACADE CONCEPT

The general principels of the elevation strategy is to suitably break up the horizontal nature of the massing, whilst designing around building efficiencies and the laboratory structural grid.

A focal point and sense of arrival is important to the front of the building to clearly demarcate an impactful entrance, whilst also breaking the linear form into wings. This also helps to improve the letting strategy for future tenants where floors and wings can be easily defined & split around a central core.

The wings of the building, which contain the functional laboratory space, need the correct ratio of solid versus glazing to suit the standard laboratory module / grid. Whilst the elevation design still needs to create a sense of verticality to break up the horizontal nature of the massing.

The symmetrical nature of the block requires the elevation design to be assured and classical in its proportions. The repetitive bays provide the architectural strength and simplicity in the design.

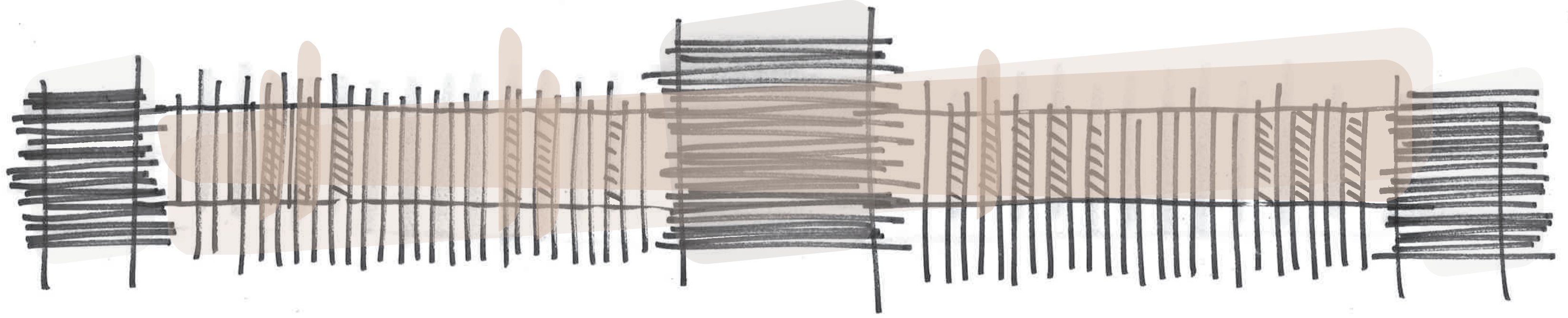
The core values are below;

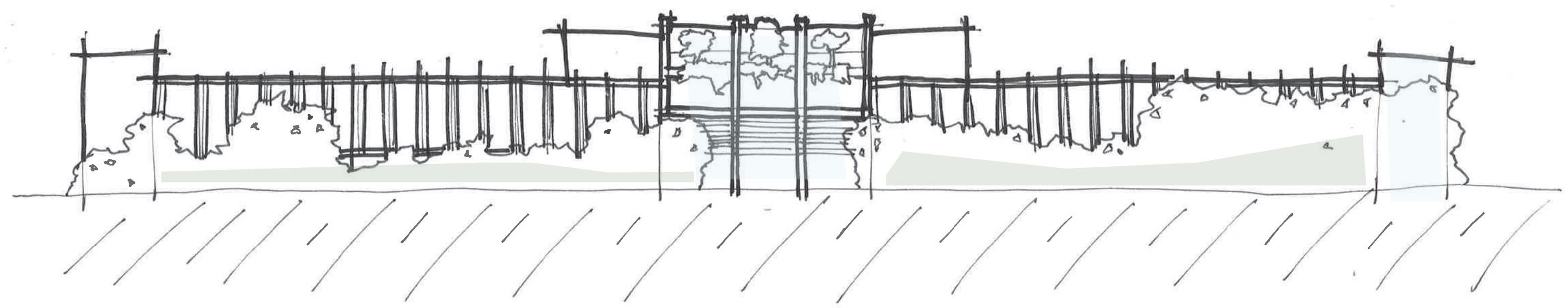
- Efficient horizontal massing broken by the lab grid.

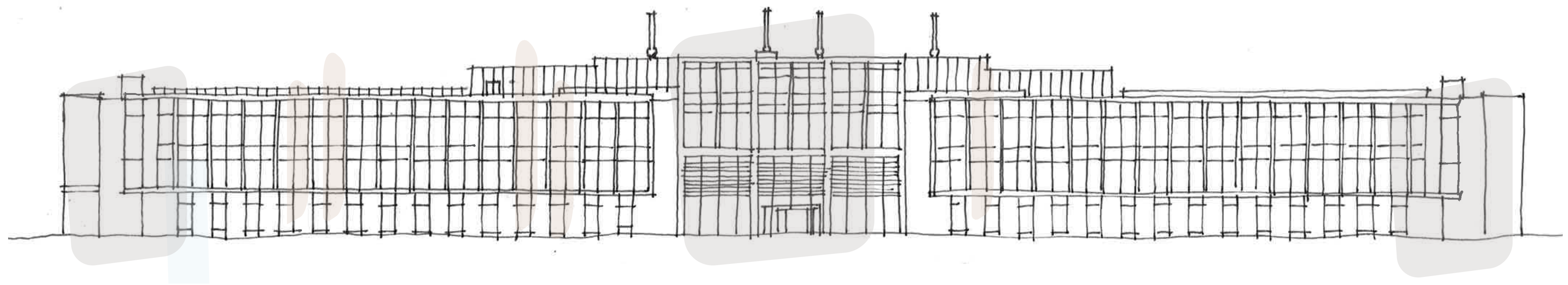
- Create a central focal point.

- Create visual interest & clear defining .entrance.

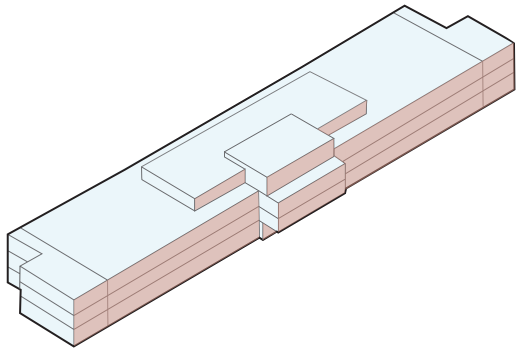
- Align with modern classic style of contemporary Oxford & Lab building typography .



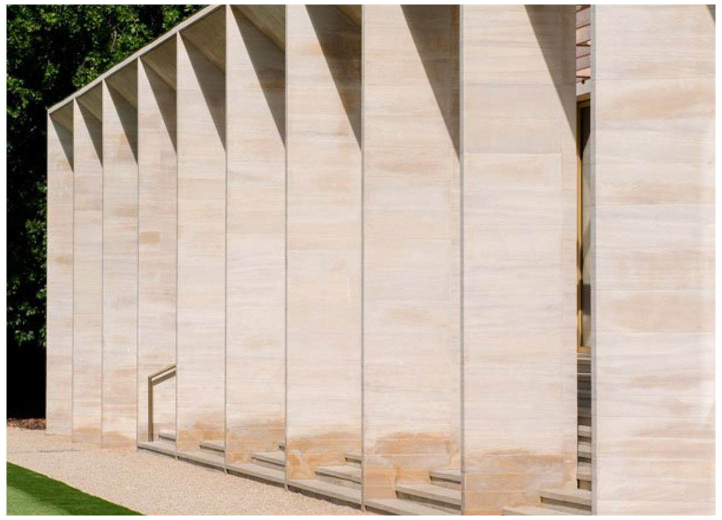




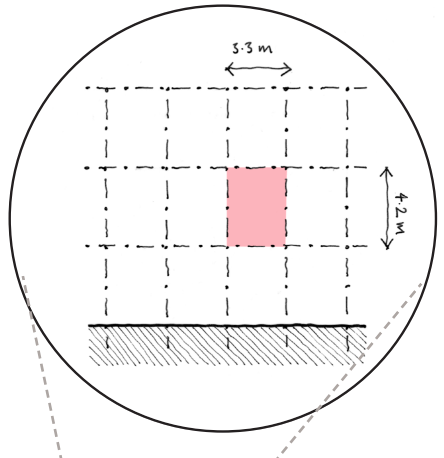
5.2 FRONT FACADE DESIGN EVOLUTION

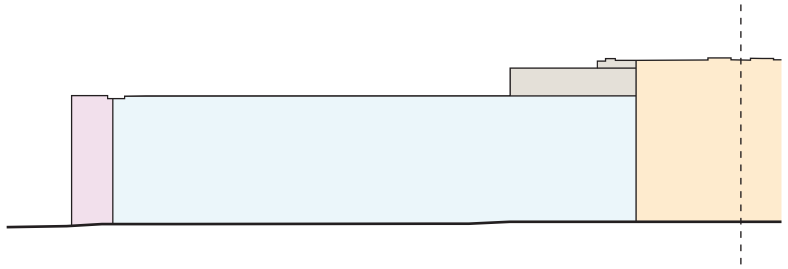


KEY AXONOMETRIC

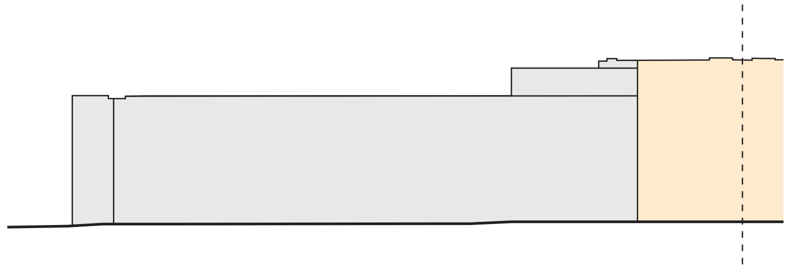


VERTICAL FIN PRECEDENT

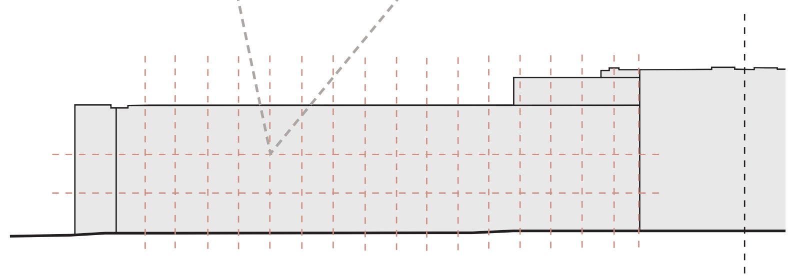




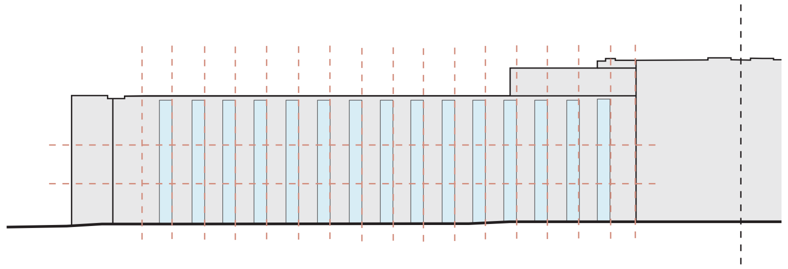
KEY DECISION 01 - Function infoms the design, services, labs, entrance, plant



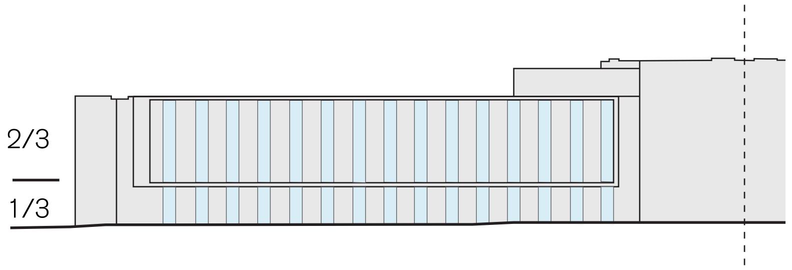
KEY DECISION 02 - Central entrance block raised to break up the facade



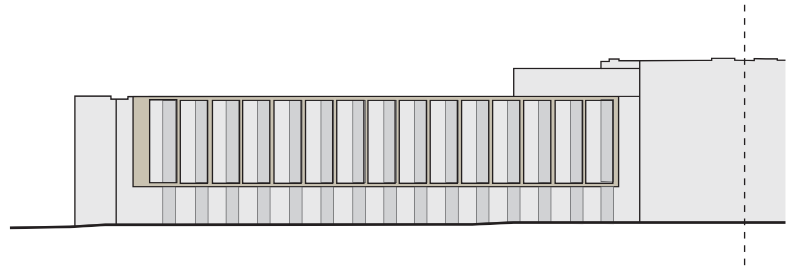
KEY DECISION 03 - Lab grid added



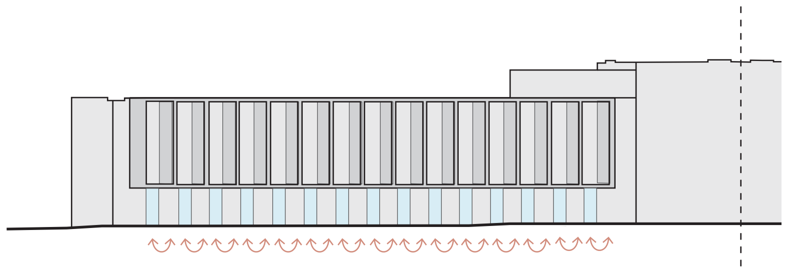
KEY DECISION 04 - Add glazing to the grid



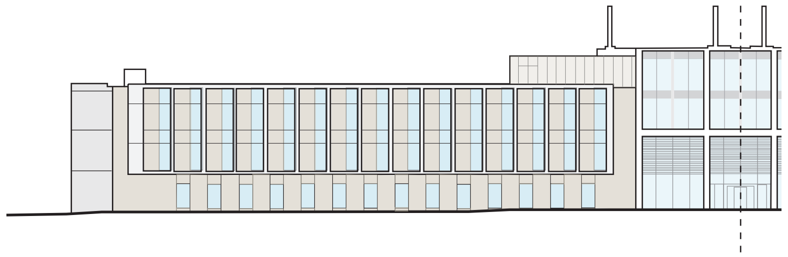
KEY DECISION 05 - Facade broken down into 1/3, 2/3



KEY DECISION 06 - Vertical fins added to express the vertical and reduce solar gain



KEY DECISION 07 - Ground floor windows staggered



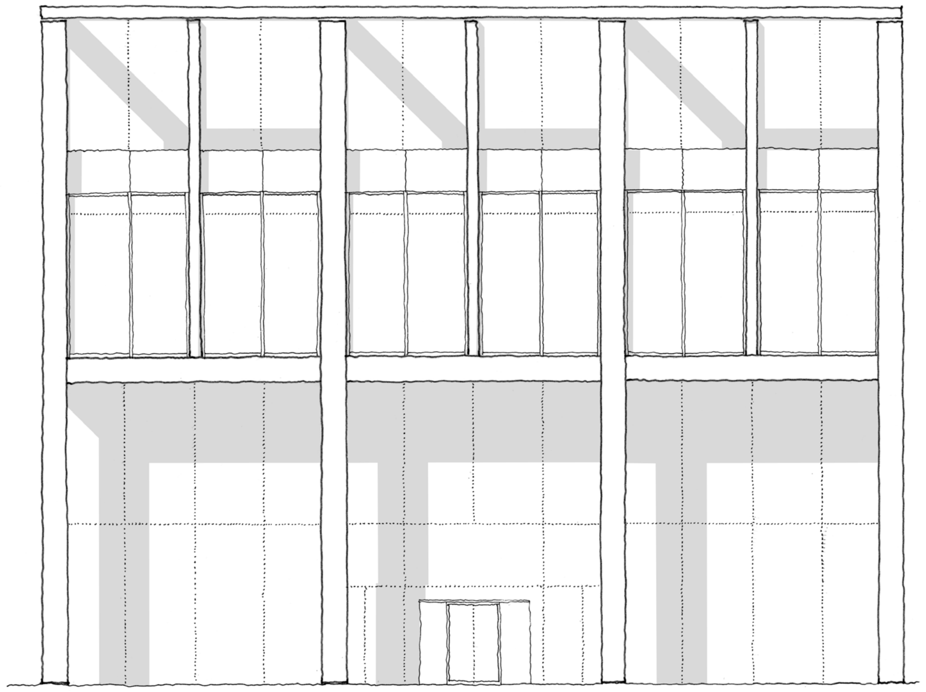
EMERGING FACADE

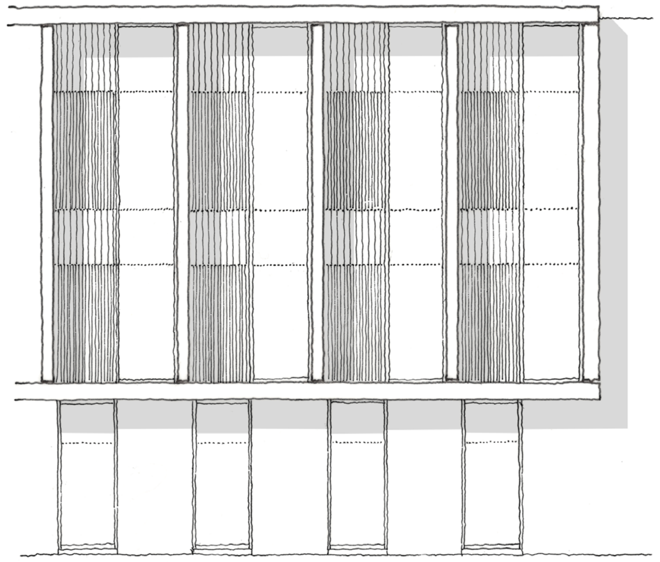
PROPOSED FRONT FACADE

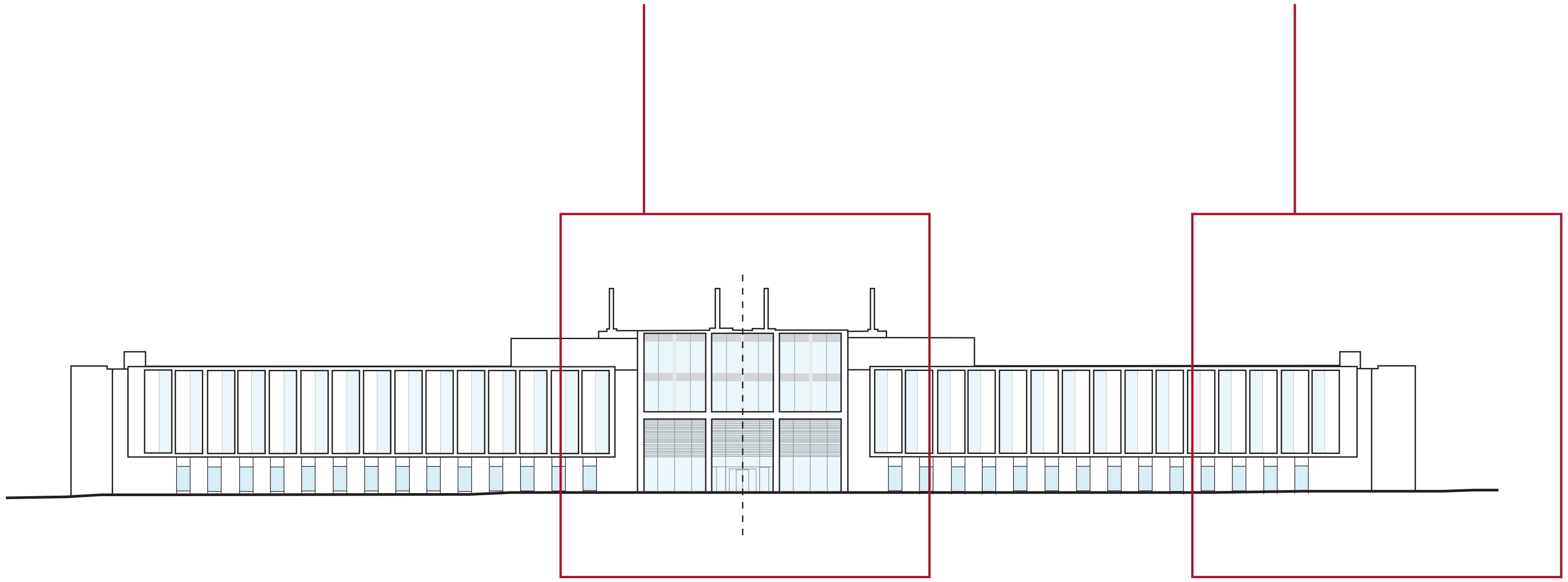
The final front elevation treatment to each lab wing, features a repeated architectural bay which mirrors on the centre point of the building.

Each bay has been designed to appear vertical in appearance to break down a horizontal building. Slender masonry fins to resemble the light coloured limestone often found in Oxford break up the bays and sit within a stone effect picture frame that wraps around the upper two floors of the building. Each bay is then further broken down with a vertical band of solid profiled panels that evenly split with the glazing system alongside this. The curtain wall glazing is made up of glass backed spandrel panels to mask the building structure and services within each level which leaves a smaller aspect of clear glazing providing natural light into the lab floor plates.

The ground floor 'base' uses simple buff brick construction with punched frame windows. The face of the brickwork is set back from the projecting stone effect bays above to create some depth in the elevation and helps to ground the base of the building by appearing more solid and monolithic. The punched windows are opposing to the clear glass on the upper floors above and line up with the solid profiled panels which gives the elevation more irregularity within the grid.







5.3 MATERIAL PALETTE & SAMPLES

The proposed exterior materials palette for Nash Court draws inspiration from the textures, tones and heritage of historic Oxford, with modern accents that acknowledge the more industrialised local context.

1 RECONSTITUTED STONE/GRC

Selected for facade bay fins, central 'crown' structure and encapsulating band to front and rear façades. Pre-fabricated components offer ability to emphasize verticality and quality of construction.

2 BUFF BRICK

Located primarily to the Ground Floor plinth, but also panellised to upper floors of the building. This brick tone compliments the light coloured reconstituted stone/GRC as found around Oxford. This also draws some similarities to the existing buildings on the plot.

3 PROFILED GLAZED TERRACOTTA TILES

These offer a dynamic contrast to the solidity of stone and brick. Exact colour, profile and glazing finish TBC.

4 BRONZE METAL CLADDING

Perforated shading panels to provide contrasting finish and tone to side cores and rear of the building.

5 GLAZING AND GLAZED SPANDREL PANELS

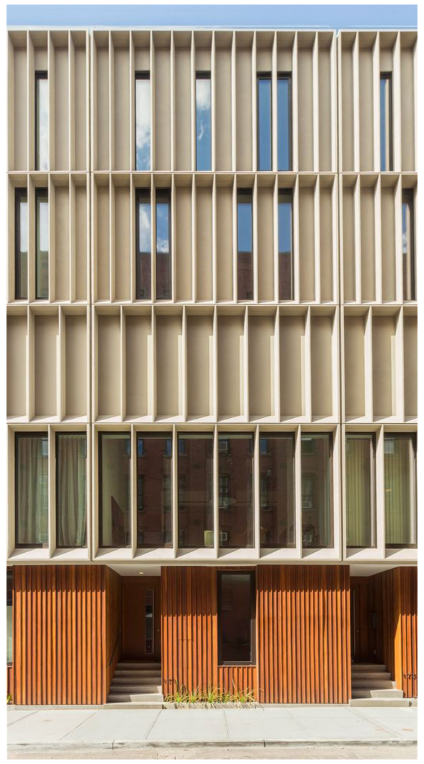
They will compliment the warm tones of the masonry.

6 ACCENT METALWORK TRIMS

Flashings and framing throughout scheme.

7 LANDSCAPING PAVERS

To tonally match with primary facade elements. Refer to Landscape Architect's Information for further details.



Project - Townhouse

Location - Brooklyn, USA

Architect - Alloy Architecture

Project - Toorak House

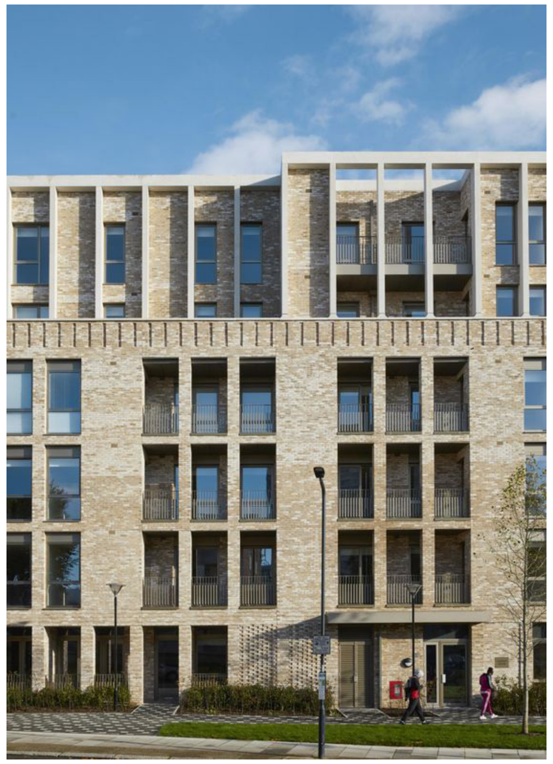
Location - Victoria, Australia

Architect - Cera Stribley

Project - Market Hall

Location - Assru, Switzerland

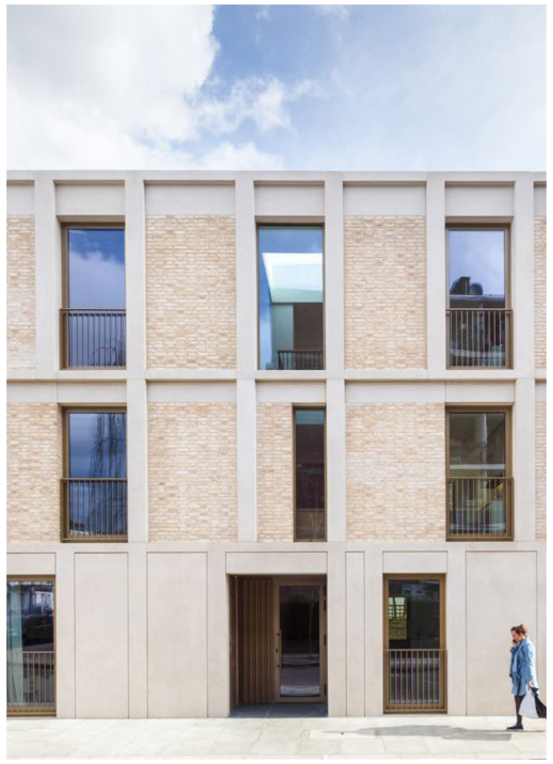
Architect - Miller & Marranta



Project - Kilburn Estate Regeneration

Location - London, UK

Architect - Feilden Clegg Bradley Studios



Project - Rosemoor Studios

Location - Chelsea, UK

Architect - Haptics Architects

PROPOSED FRONT FACADE - WING ELEVATION

The eastern elevation, which faces into the ARC Oxford site, employs a continuous 'colonnade' at first and second floor, formed in reconstituted stone fins. These provide both solar shading and bring a vertical arrangement and continuous rhythm along John Smith Drive.

The vertical fins are paired with full-height profiled glazed ceramic panels. These provide a contrasting tone and texture to the adjacent stone and glass.

The solid to glazing ratio is optimised for providing maximum flexibility and natural daylight whilst preventing excessive solar gain. Facade bays of 3.3m contain approximately 1.8m of solid for every 1.5m of clear glazing. Glass spandrels cover floor, slab and ceiling zones and further accentuate the verticality of the facade. The recessed ground floor contains windows offset from the glazing above for visual interest.

The overall section has been optimised to reduce the height of the building, whilst maintaining an acceptable floor-to-ceiling heights and services required for a modern life science building.

KEY

- 1 Buff Brick
- 2 Clear Glazing
- 3 Reconstituted Stone Fin / Band
- 4 Profiled Glazed Terracotta
- 5 Glazed Spandrel Panel
- 6 PV Panels
- 7 Mansafe Railing

Precedent: Stanton Williams, External Stone / Concrete Fins