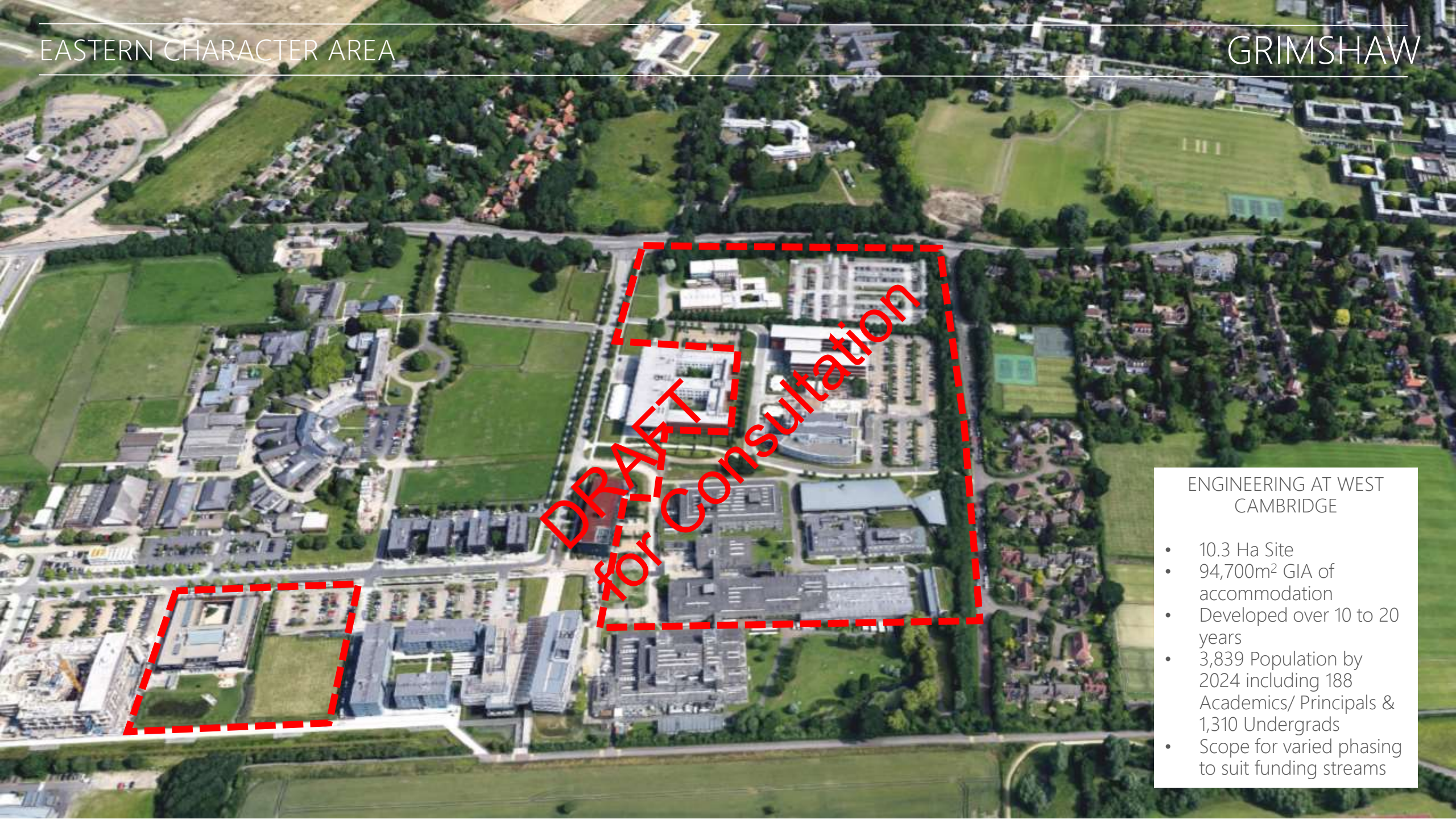
CIVIL ENGINEERING BUILDING

WEST CAMBRIDGE COMMUNITY FORUM

04TH JULY 2016

CUED INSET MASTERPLAN
SUMMARY



ENGINEERING AT WEST CAMBRIDGE

- 10.3 Ha Site
- 94,700m^2 GIA of accommodation
- Developed over 10 to 20 years
- 3,839 Population by 2024 including 188 Academics/ Principals & 1,310 Undergrads
- Scope for varied phasing to suit funding streams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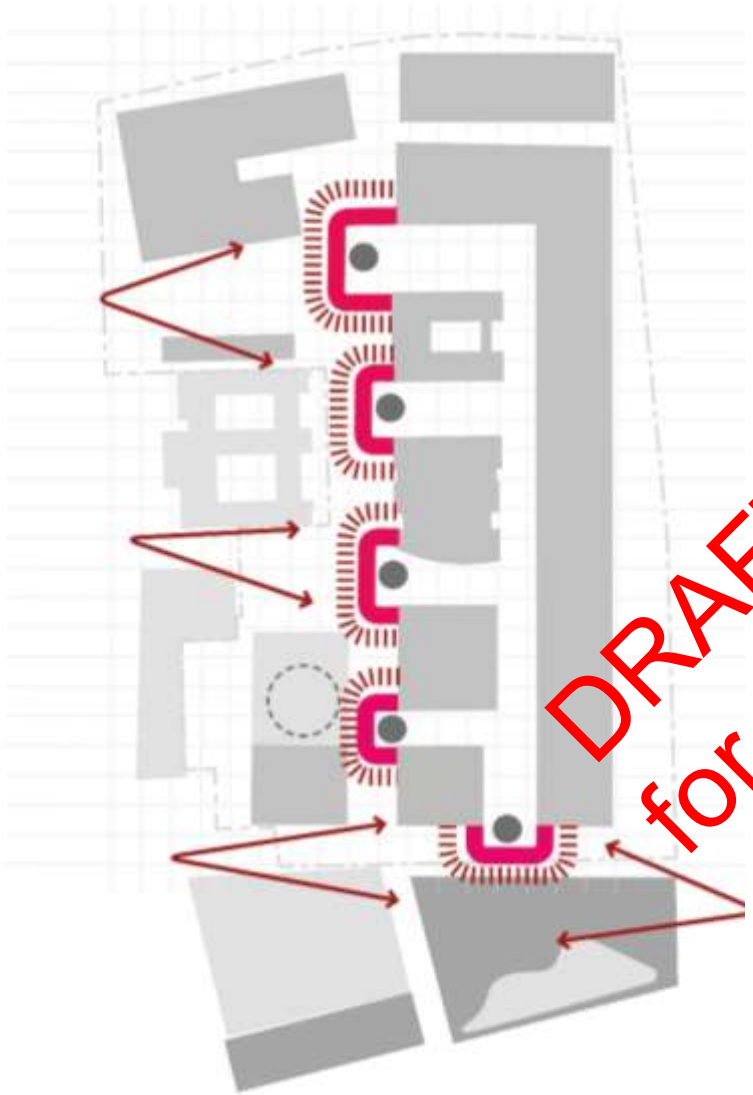
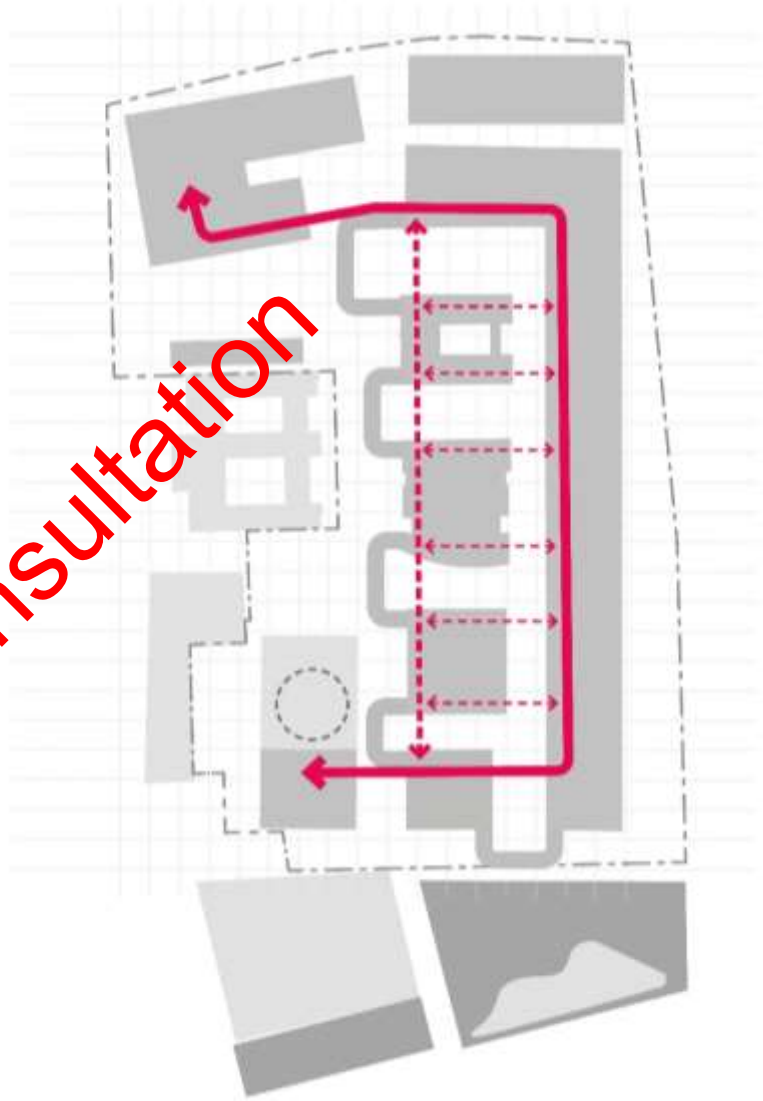
KEY
West Cambridge Masterplan
CUED Inset Masterplan
UK-CRIC Building
Shared Facilities Hub
Cavendish III



IDENTITY



CONNECTIVITY

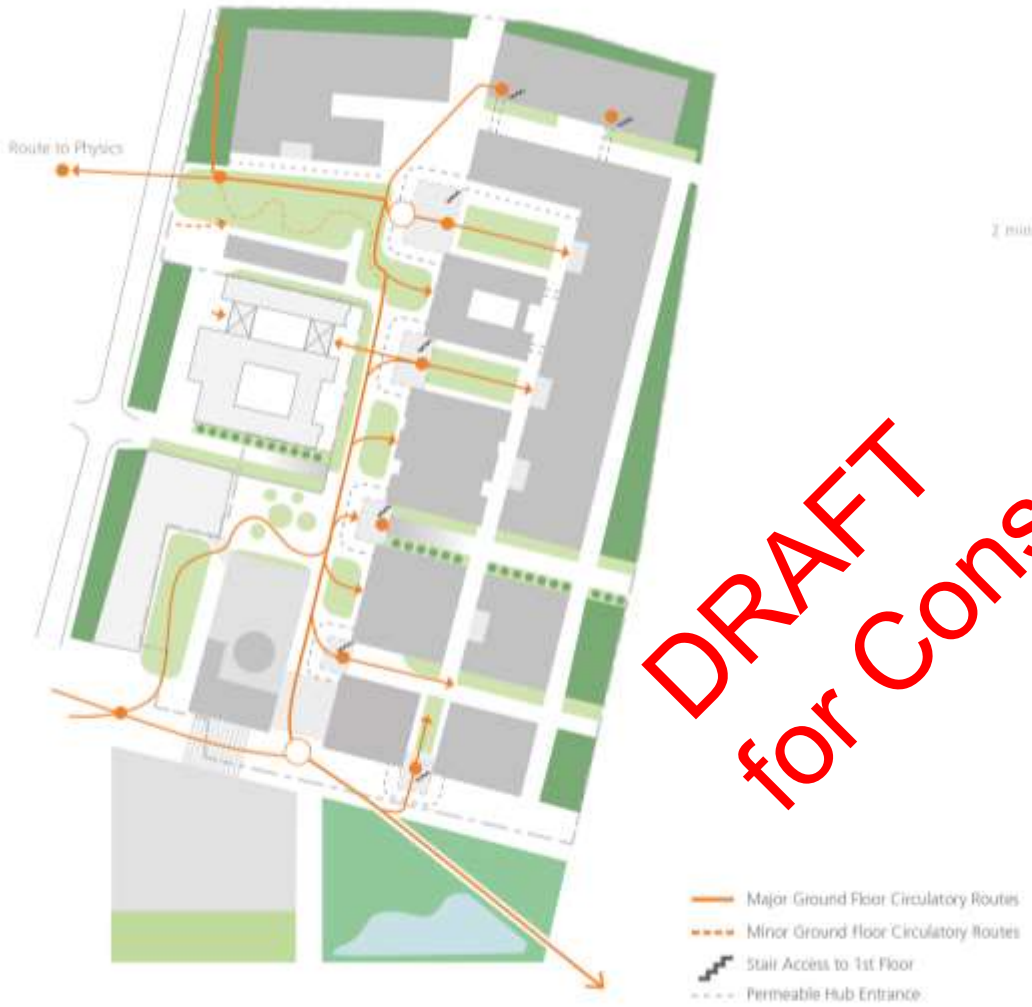
GREEN PERIMETER

SHELTERED COURTYARDS

PUBLIC REALM

SPATIAL TYPES

Workshop (Light)
Workshop (Heavy)
Office / Research
Specialised Laboratory
Collaboration / Social
Lecture Theatre



GROUND PLANE & PUBLIC REALM

WITH PERMEABLE SOCIAL HUBS

FIRST FLOOR NETWORK

WITH CIRCULATION LADDER

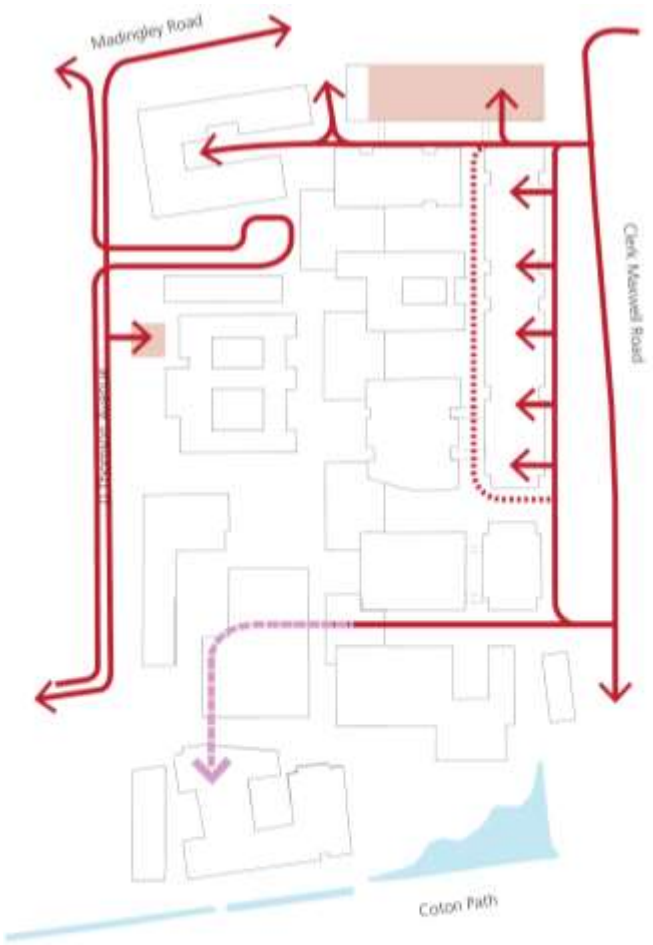


Diagram illustrating proposed vehicular movement

Diagram illustrating proposed cycle movement

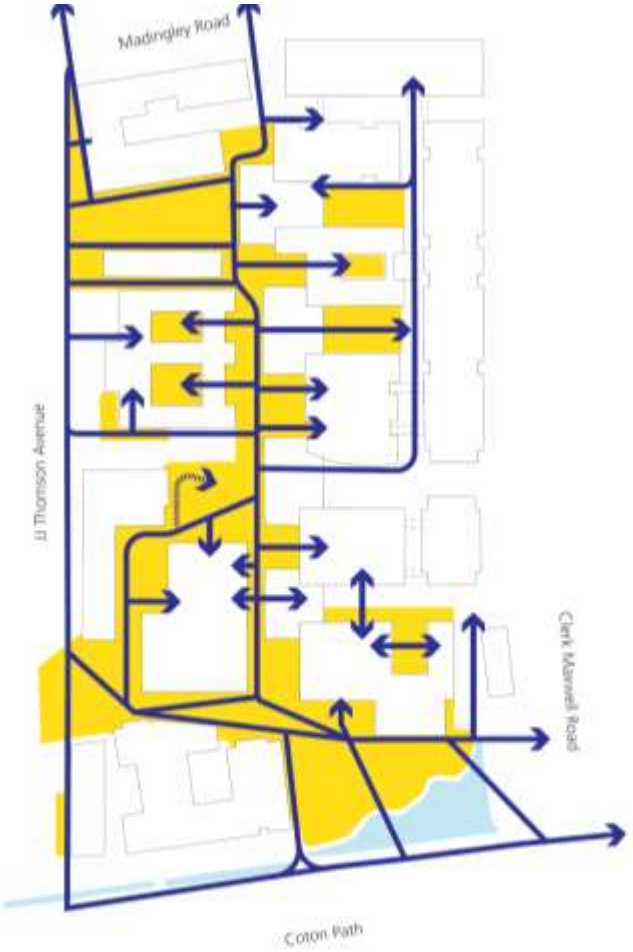


Diagram illustrating proposed pedestrian movement & spaces

- Vehicular movement
- Fire access
- Cycle movement
- Transition from cycle to pedestrian
- Pedestrian movement
- BoH Service Corridor
- Parking
- Cycle parking
- Landscape spaces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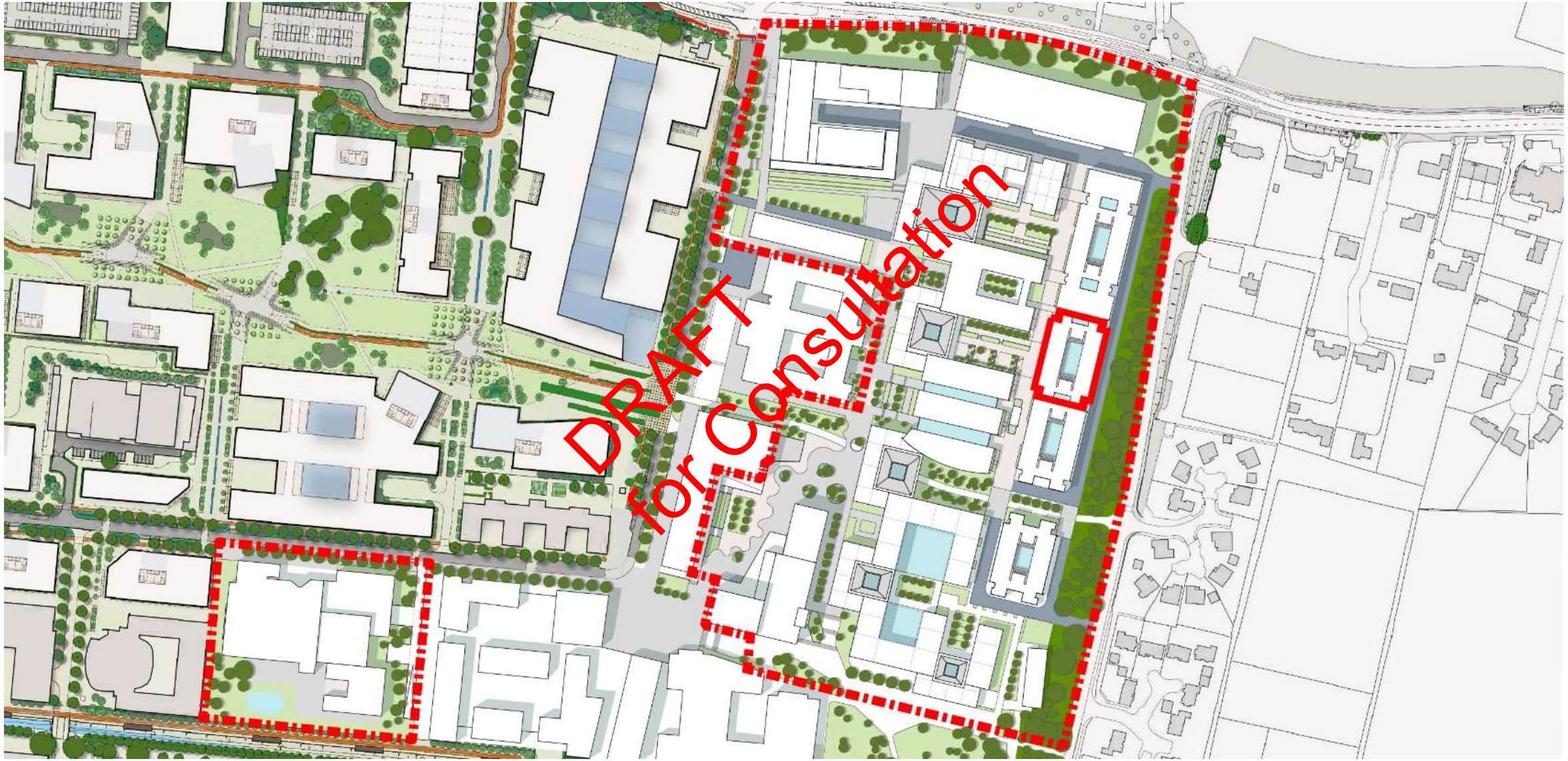
CIVIL ENGINEERING BUILDING LOCATION & MASSING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Existing Surface Car Park
Future New Civil Engineering Building Footprint

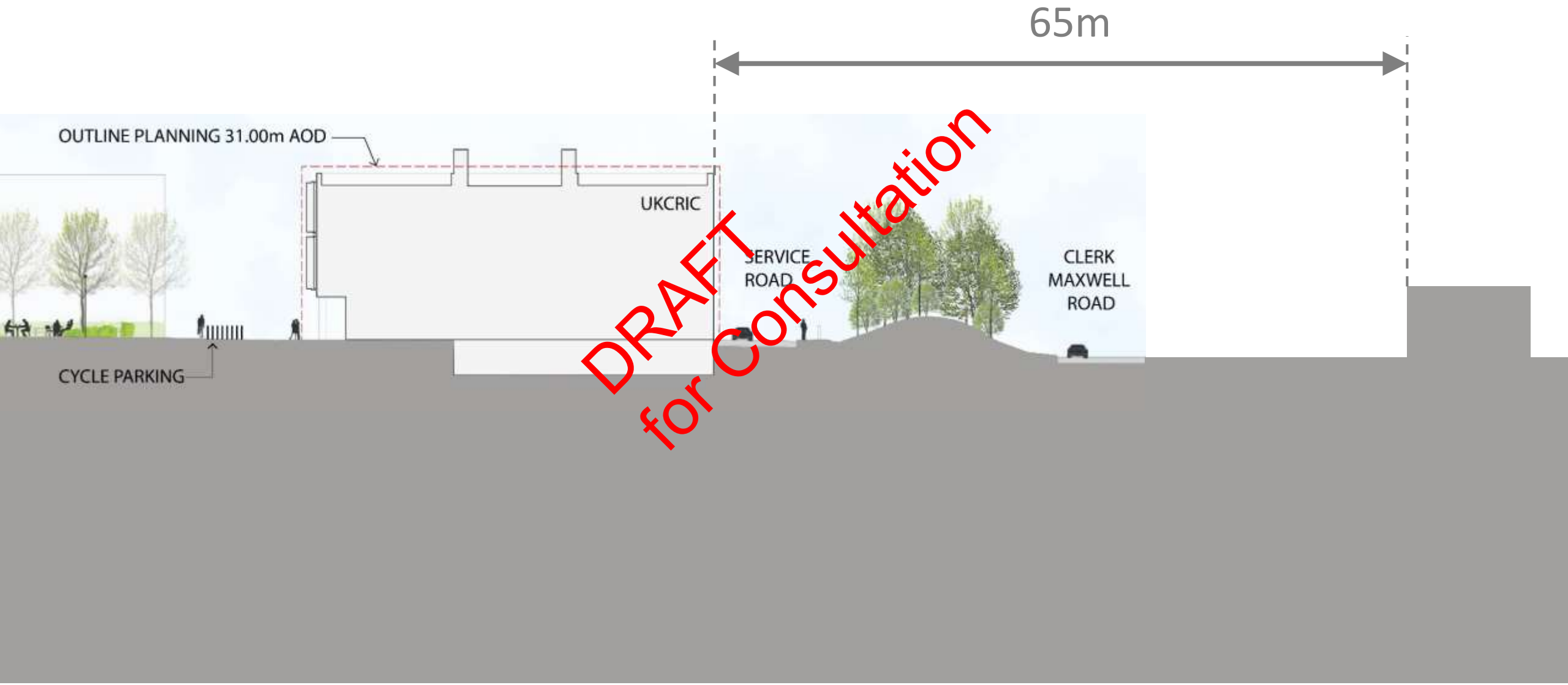
KEY

Contextual Information:
- Existing street
- Existing open land
- +18 Sample ground level spot height AOD

For Approval:
- Application site boundary

Maximum building heights
- 31.0 metres AOD
- 32.0 metres AOD
- 36.0 metres AOD
- 37.0 metres AOD
- 38.0 metres AOD
- 41.0 metres AOD
- Stated AOD + 8m for a footprint of up to 1,200m2
- zone for location of energy centre flue

Building heights include roof plant rooms but exclude exhaust flues.
Maximum height of flues to be no more than 8m above maximum building heights.


65m
OUTLINE PLANNING 31.00m AOD
UKCRIC
SERVICE ROAD
CLERK MAXWELL ROAD
CYCLE PARKING
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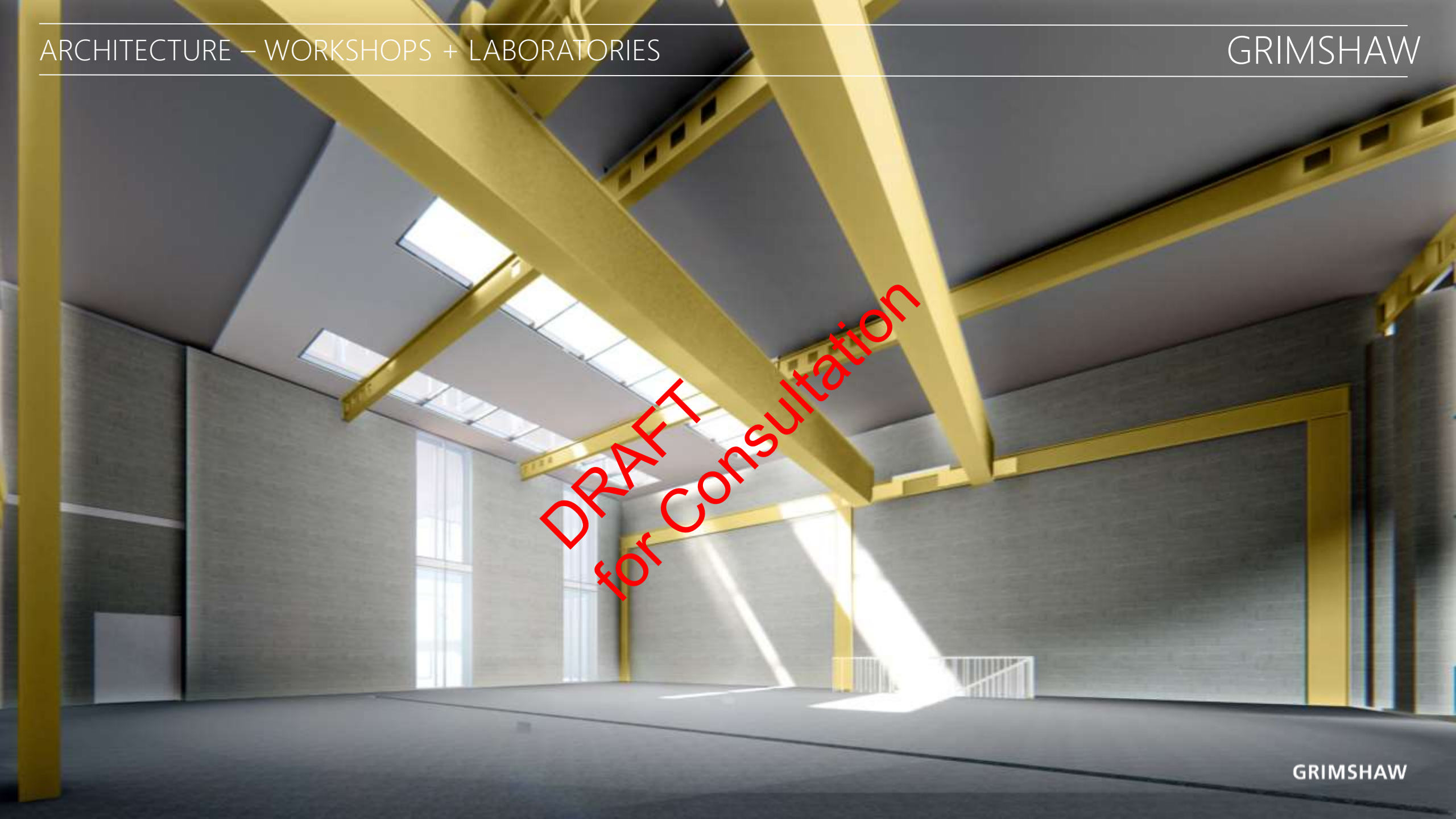
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Overview

- The key consideration for planning is the control of noise impact from the building to residential neighbours and other CUED divisions

Site noise survey

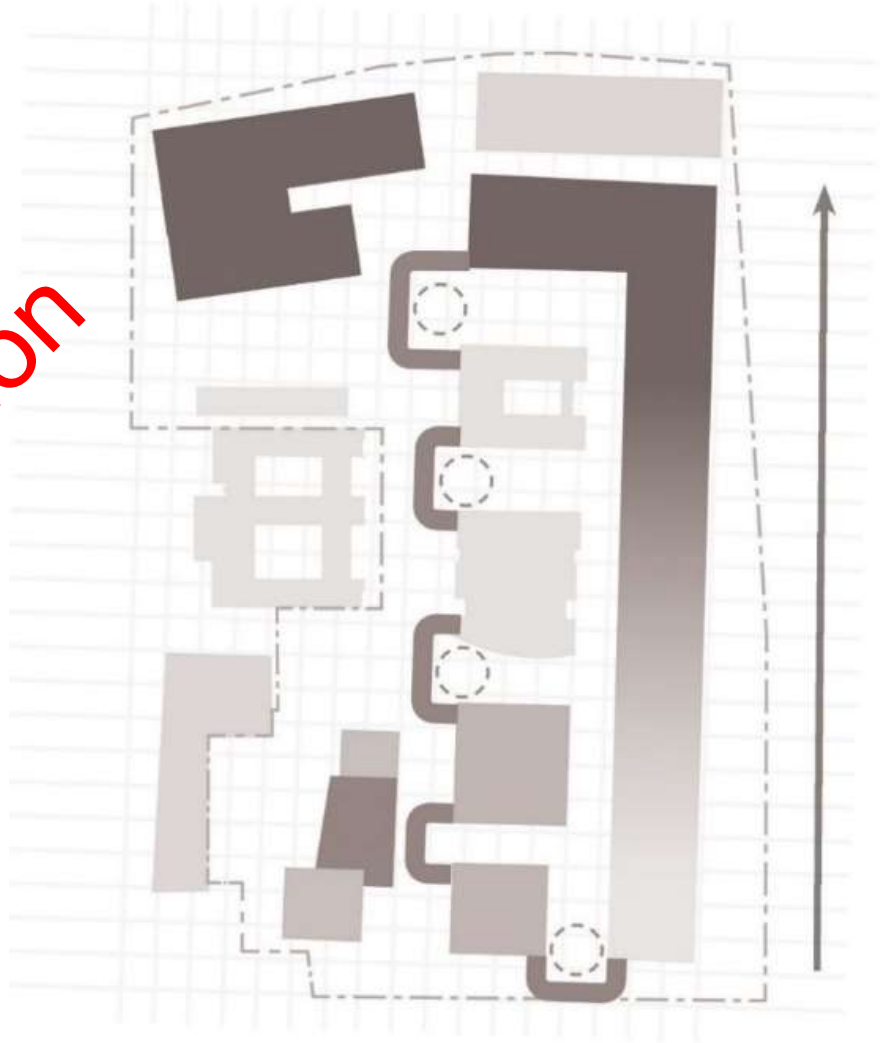
- Survey location representative of nearest residential neighbour.
- 40th Percentile LAF90,15min values used as representative existing background noise level

Measurement of noise sources

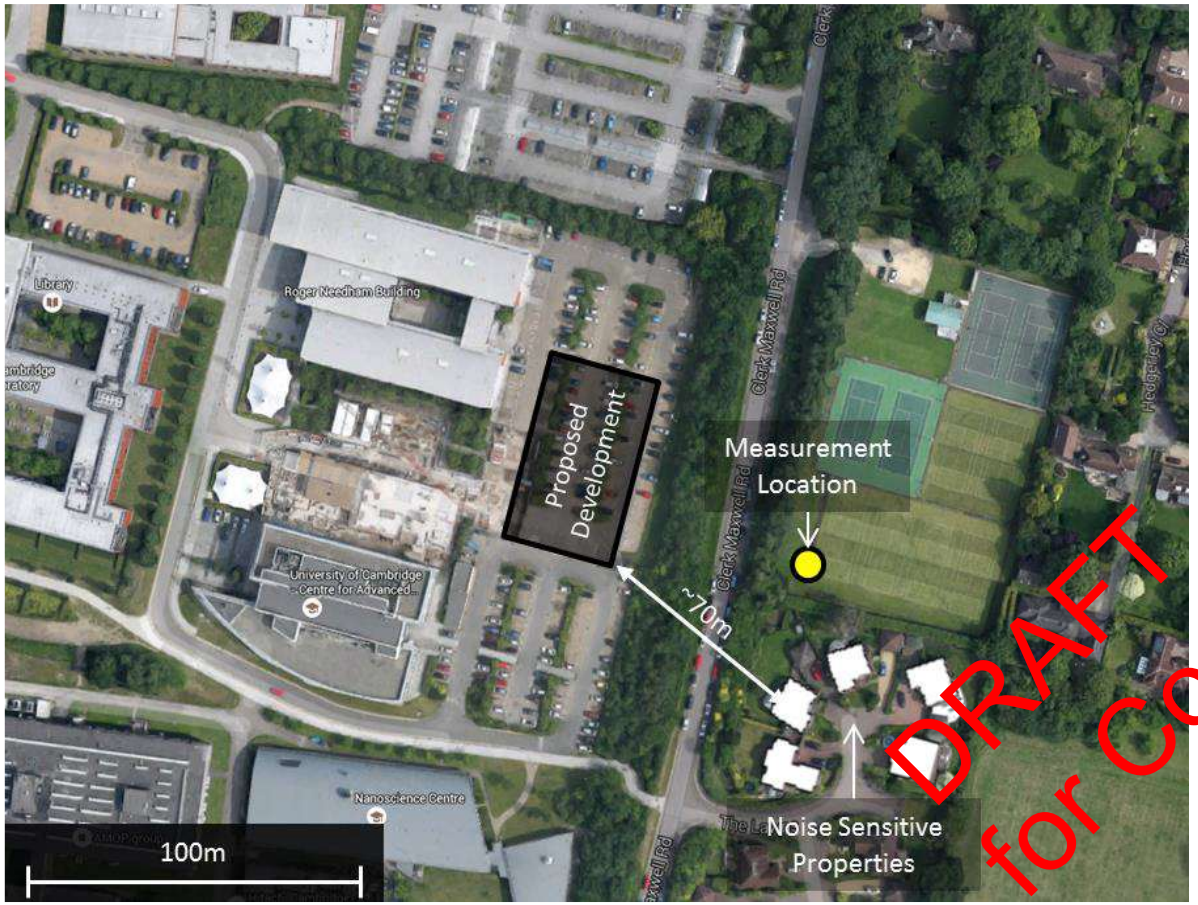
- Noise sources have been measured at the existing engineering labs
- The loudest is the concrete mixer at 98dB(A)

Noise impact assessment

- Noise impact has been assessed using the BS4142:2014 method.
- A 6dB penalty has been applied to the concrete mixer noise level to account for its tonal and intermittent nature



OVERALL NOISE LEVEL GRADIENT



IN ACCORDANCE WITH BS:4142 IT IS PROPOSED THAT TO DECREASE THE RISK OF ANNOYANCE AND COMPLAINT, AS FAR AS IS REASONABLY PRACTICAL, THE NOISE RATING LEVEL **[D]** SHOULD BE AROUND **10dBA BELOW** THE MEASURED BACKGROUND NOISE LEVEL **[A]** .

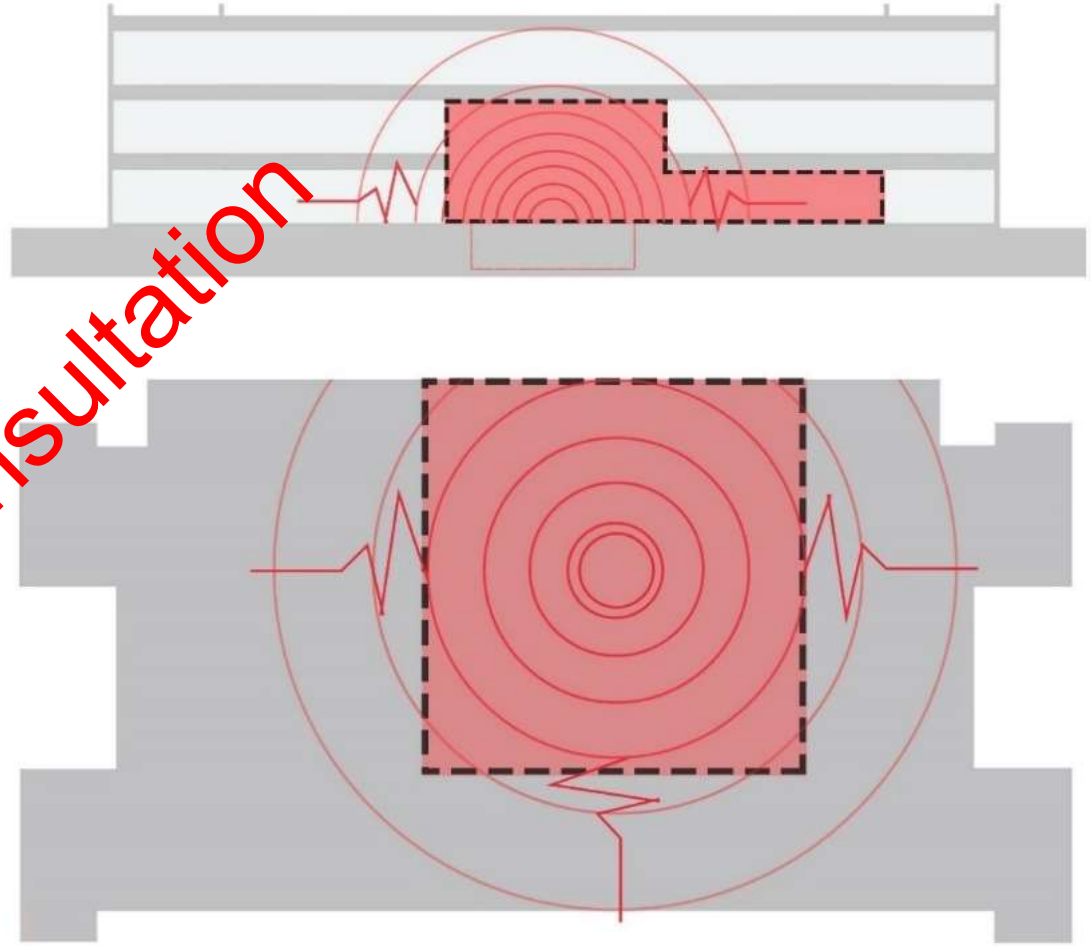
TYPE	NOISE LEVEL	DESCRIPTION
A	**47** [dBA]	TYPICAL DAYTIME BACKGROUND NOISE LEVEL MEASURED AT NEAREST RESIDENTIAL PROPERTY
B	**104** [dBA]	LOUDEST MACHINE TO BE USED BY CIVIL ENG [CONCRETE MIXER]
C	**71** [dB]	WEIGHTED SOUND LEVEL DIFFERENCE BETWEEN THE INTERNAL NOISE LEVEL OF THE PROPOSED BUILDING AND THE LEVEL AT THE RESIDENTIAL PROPERTY **[AT A DISTANCE OF 67m]**
D	**33** [dB]	[= B - C] EXPECTED NOISE LEVEL AT THE NEAREST RESIDENTIAL PROPERTY
E	**-14** [dBA]	[= D - A] RATING **BELOW** TYPICAL DAYTIME BACKGROUND NOISE

Sound Containment Strategy

- The Main Structures Workshop adopts a box-in-box strategy to contain sound.
- The external doors and ventilation openings will have appropriate acoustic ratings.
- Workshop doors to remain closed during normal operation
- Concrete mixers to be isolated from main ground floor slab

Outcome

- The combined noise rating level from plant and activities within the building is more than 10dB below the existing background noise level at the nearest residential neighbour.



Line of Acoustic Containment

DRAFT VIEW 03 – SECOND FLOOR OPEN PLAN OFFICES

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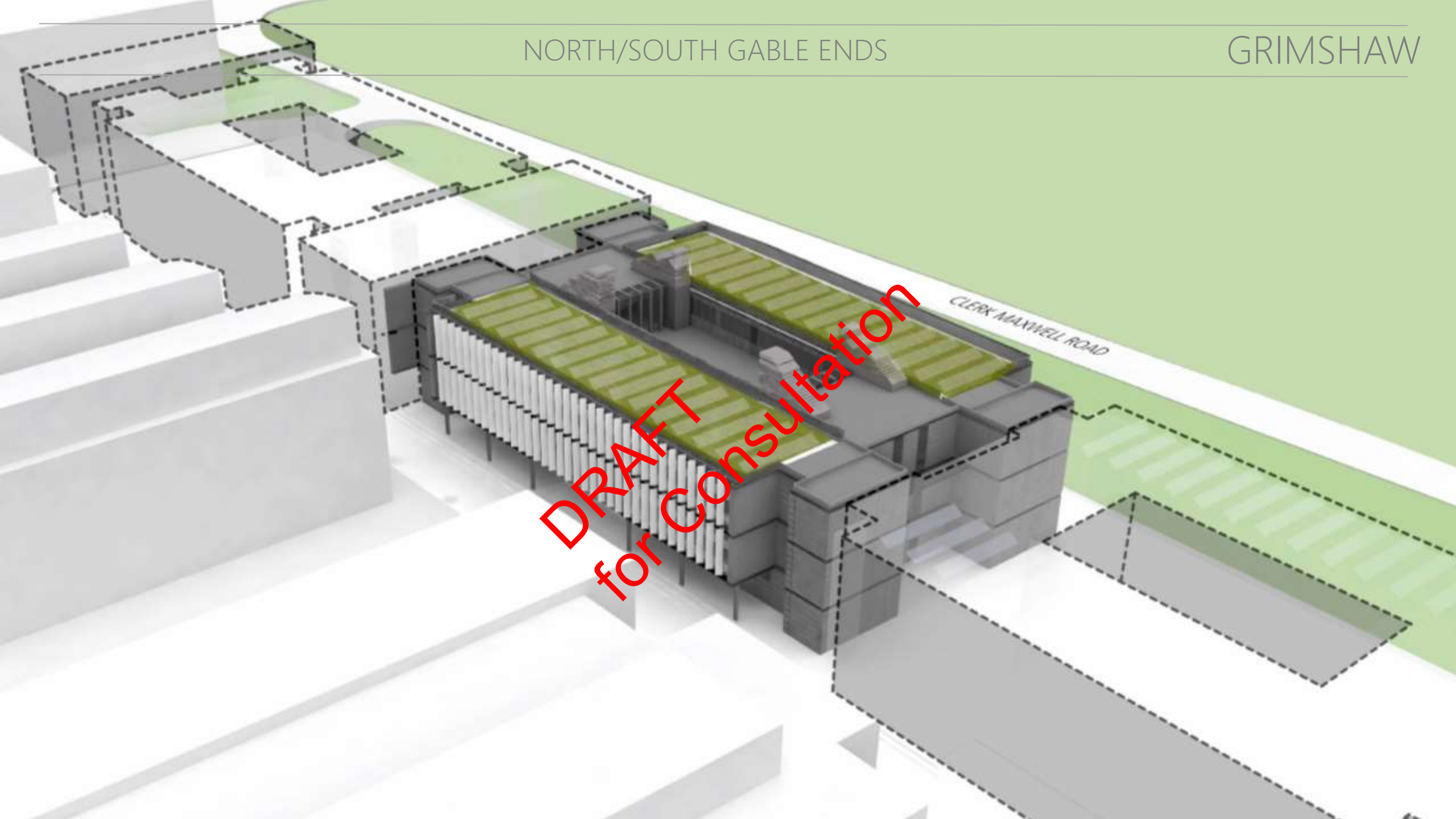
CLERK MAXWELL ROAD
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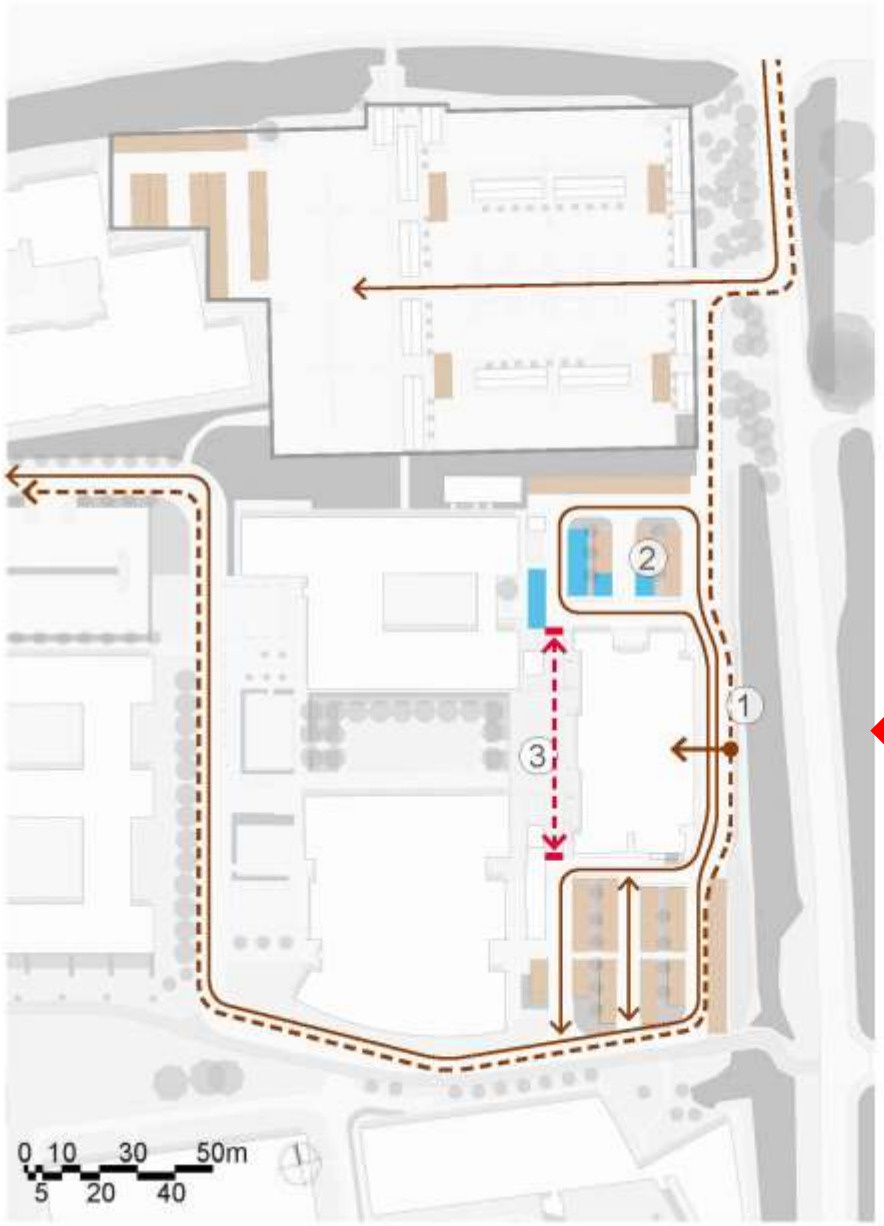
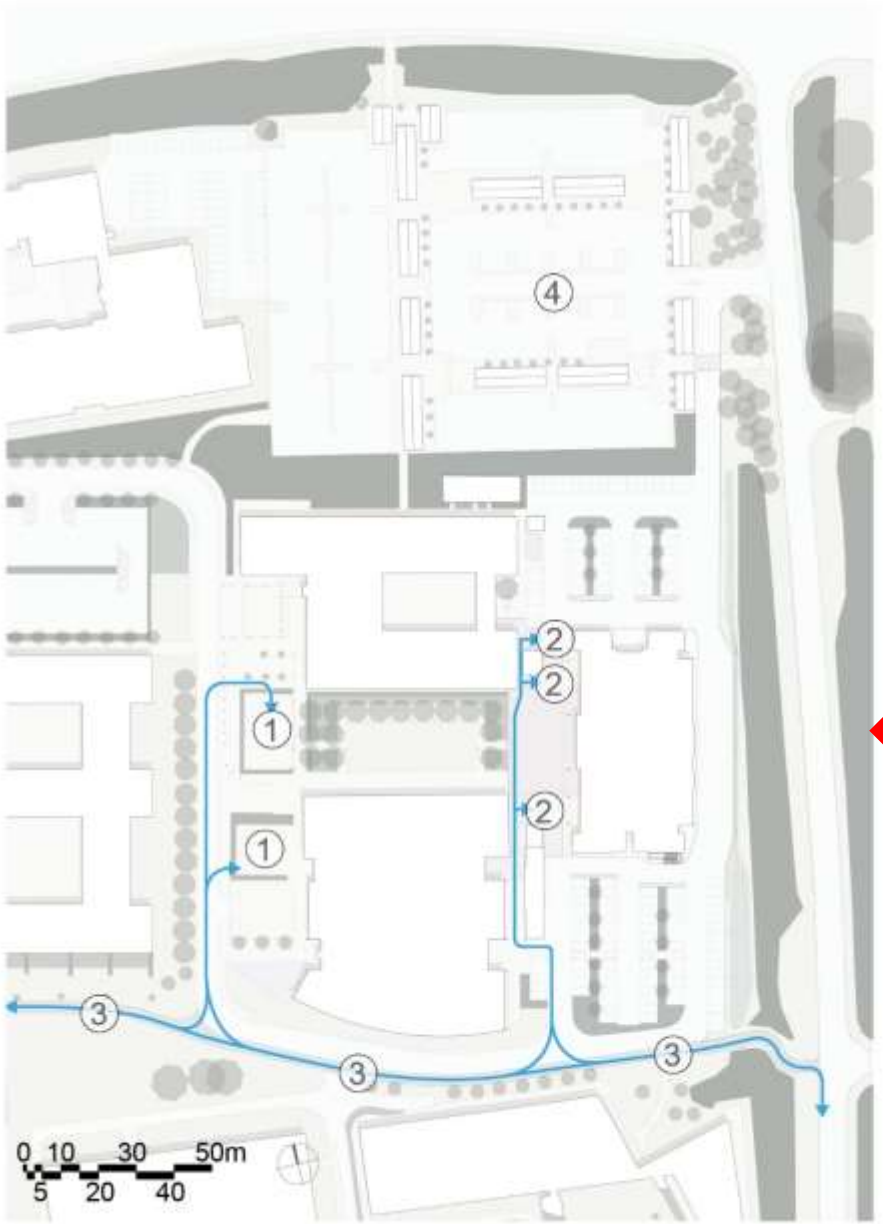


1. Access for loading and deliveries to strong floor
2. Additional accessible parking for new building
3. Fire tender access

Standard Car Park Bays
Accessible Car Park Bays
Car Parking Access
Loading and delivery access
Fire Tender Access



1. Existing covered cycle parking
2. Potential for covered cycle parking – 56 Sheffield stands
3. Existing cycle route
4. Existing Park & Cycle

THANK YOU