

- WHITTLE II -

West Cambridge Community Group

06.11.2019

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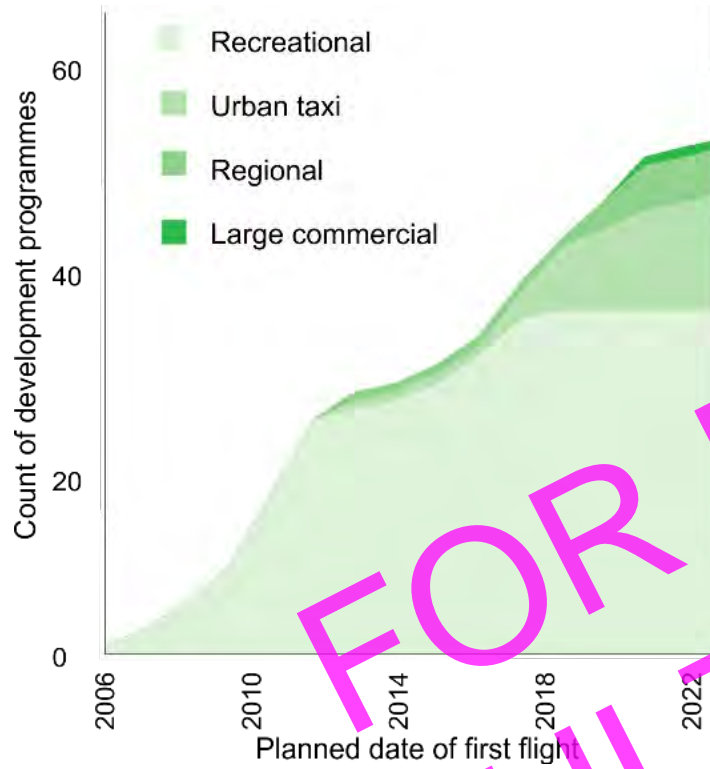
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Proposal for the Aerospace Technology Institute:
National Centre for Propulsion and Power



Injecting pace and simplicity into UK
technology transfer

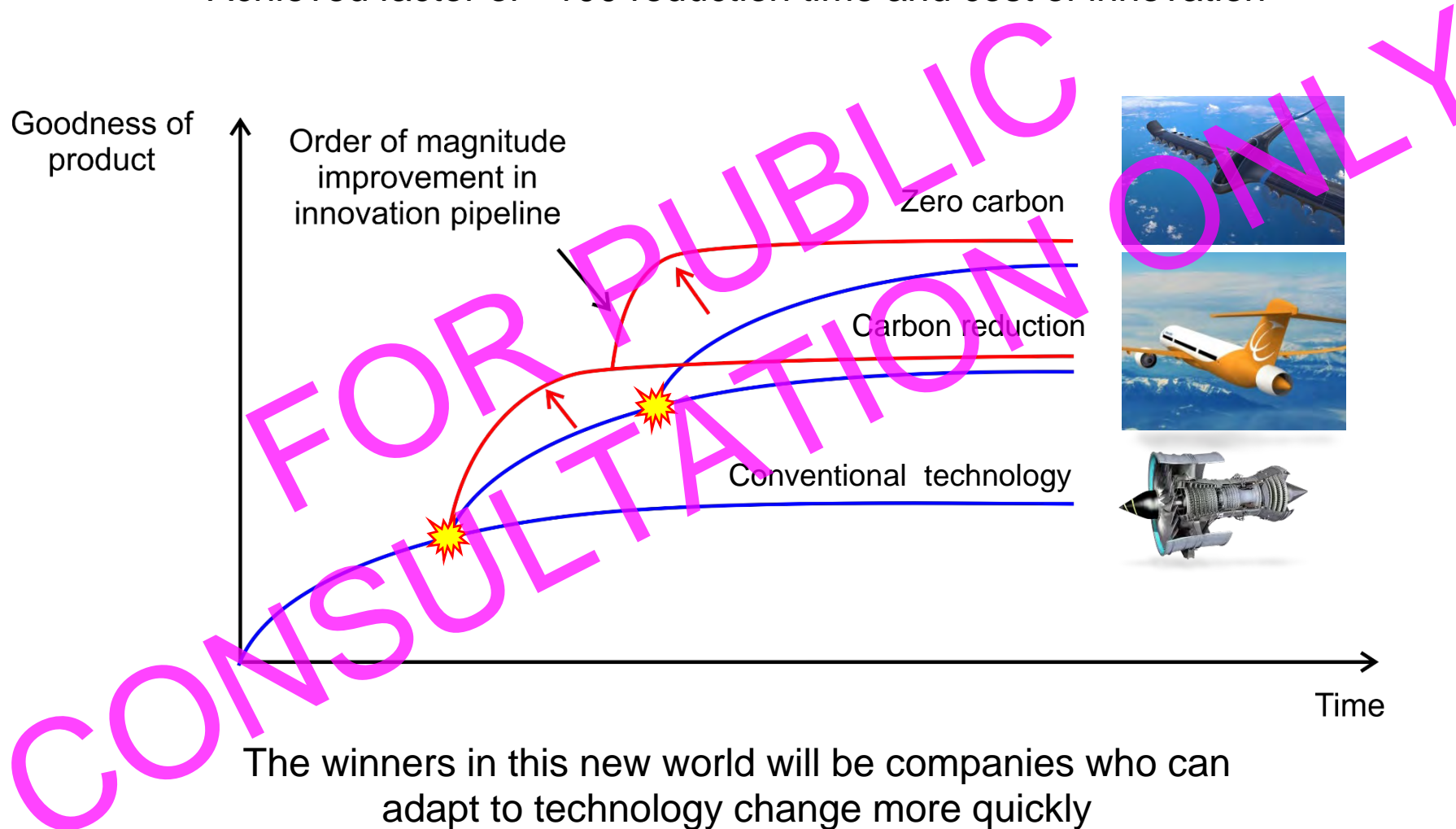
Transformational sector change



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Solution – Inject Pace and Simplicity

Achieved factor of ~100 reduction time and cost of innovation



Our solution – Ability to ask big questions

'Propulsion and Power' Challenge space



Urban mobility

Battery gas turbine hybrid



Digital twin



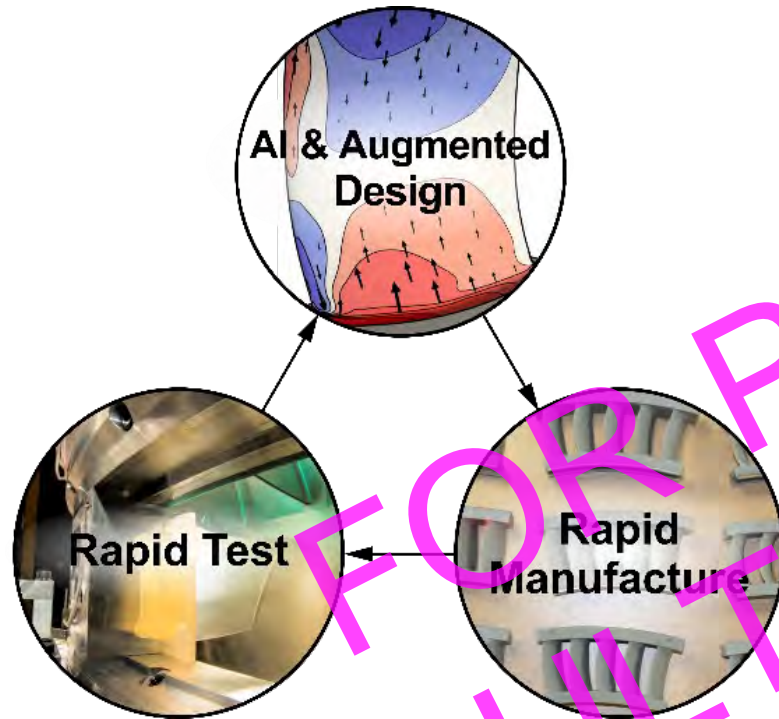
Zero emission regional jet



Silent aircraft

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Merging the digital and physical worlds



Innovation explodes when development cycle time \sim human time scale



2005 – 2 years
2017 – 1 week



New Whittle Laboratory



Propulsion and power Challenge Space



Co-locate wider University and industry to take on the challenge of decarbonisation

New Whittle Laboratory



Rapid manufacture



Ability to rapidly realise concepts in the physical world

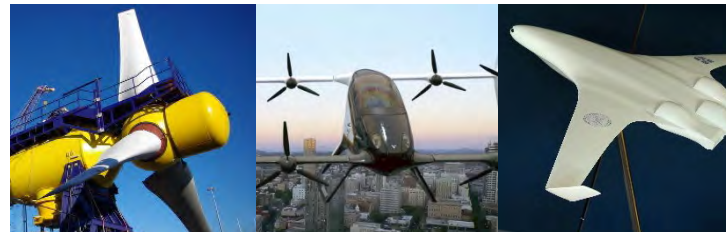
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New Whittle Laboratory

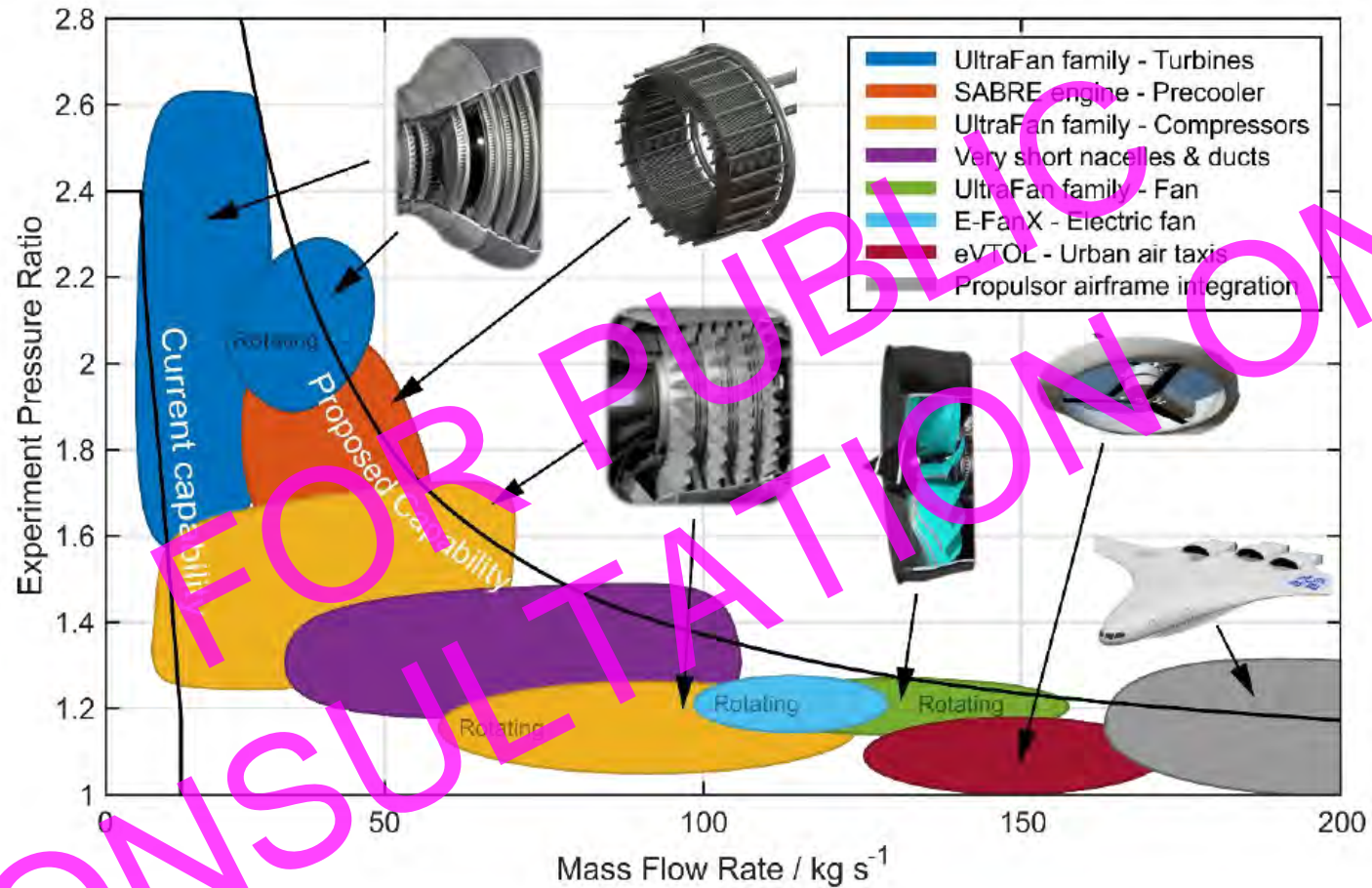


National Centre scaling rapid testing to 80% of UK future need

Ability to rapidly test concepts in the physical world



Flexible High Capacity Air Supply



Facility developed over 2 years in collaboration with Industry

Whittle II

Whittle I Opened in 1973 – Aim to take on some of societies most significant challenges



Whittle

Industry

Whittle

Industry

Sir Stanley Hooker

Sir William Hawthorne

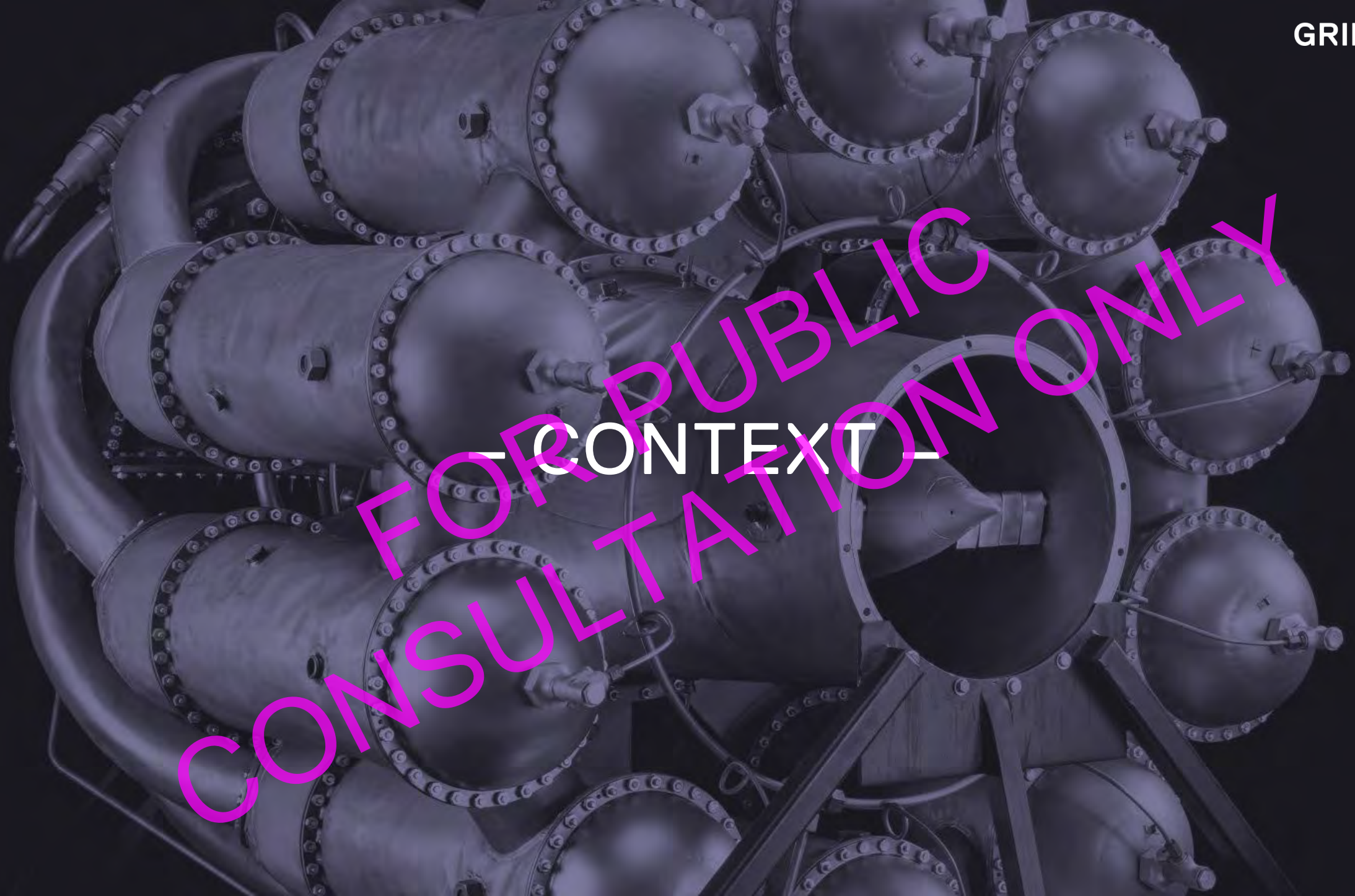
Sir John Horlock

Sir Frank Whittle

Bob Fielden CBE

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— CONTEXT —



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WC-OPA
Masterplan



WEST CAMBRIDGE
OUTLINE PLANNING APPLICATION
DESIGN GUIDELINES
for approval
UNIVERSITY OF CAMBRIDGE
SEPTEMBER 2017

WEST CAMBRIDGE
OUTLINE PLANNING APPLICATION
PARAMETER PLANS AND PARAMETER STATEMENTS
for approval
UNIVERSITY OF CAMBRIDGE
SEPTEMBER 2017

FRONTAGE BREAKS

“LANDMARK” FEATURE

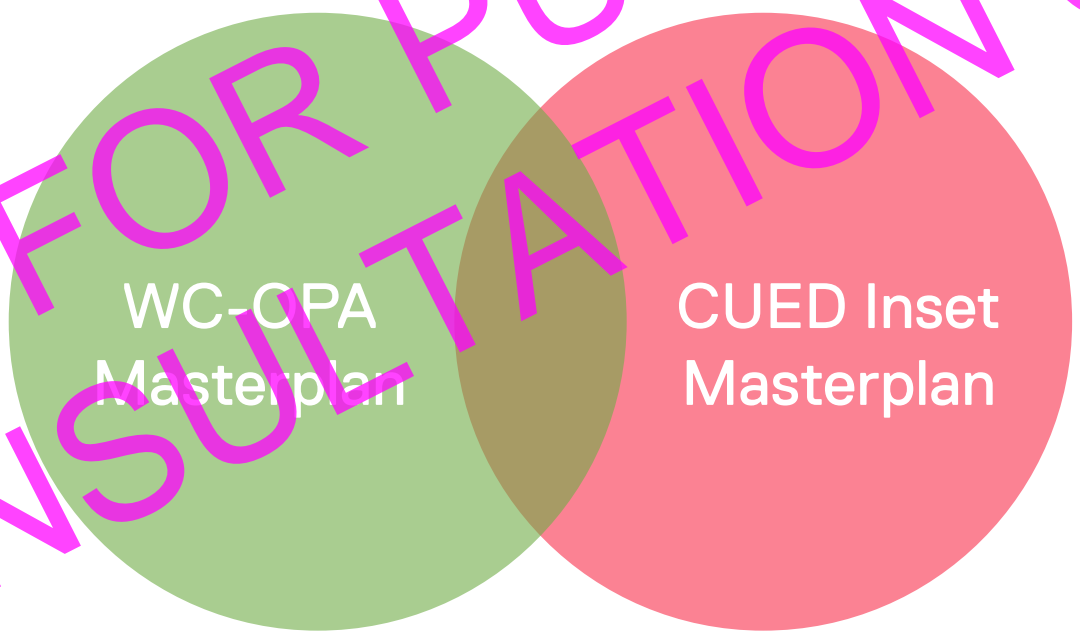
ACTIVE FRONTAGES

SECURE LINE

SHARED FACILITIES

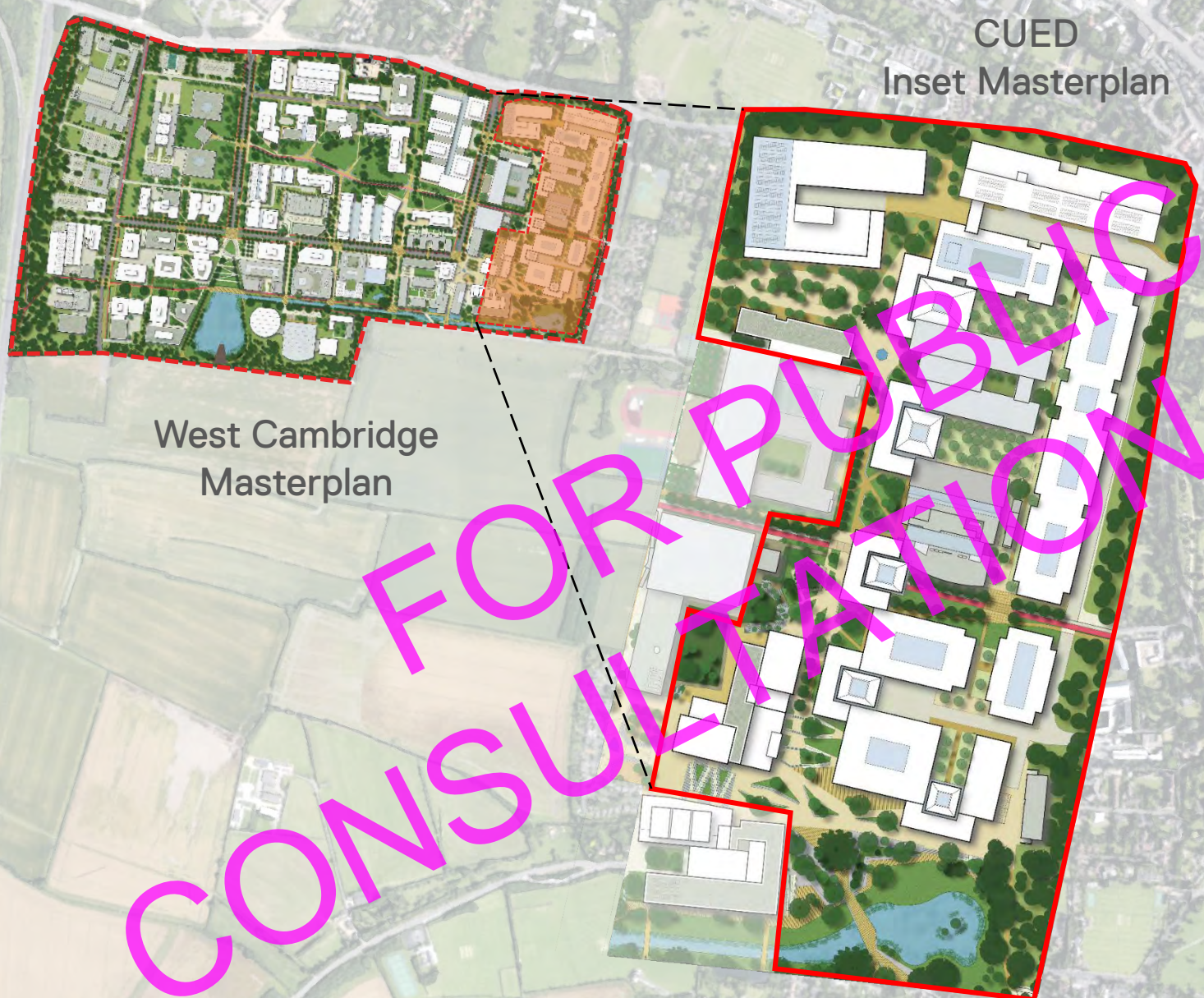
MATERIALITY

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WC-OPA
Masterplan

CUED Inset
Masterplan



CUED
Inset Masterplan

West Cambridge
Masterplan

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Site Area
10.3 Ha

Accommodation
~100,000 m²

Programme
10-20 Yrs

Population [2024]
3,839

Academics
188

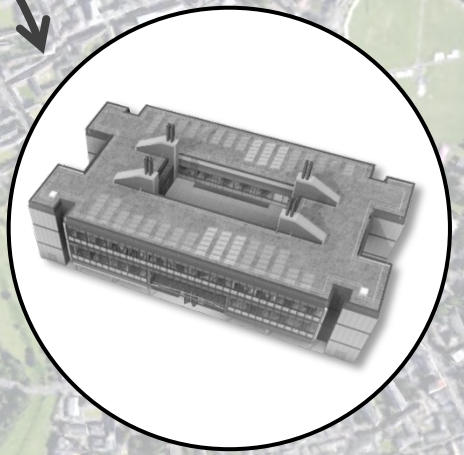
Undergraduates
1,310

Delivery Flexibility
Maximised



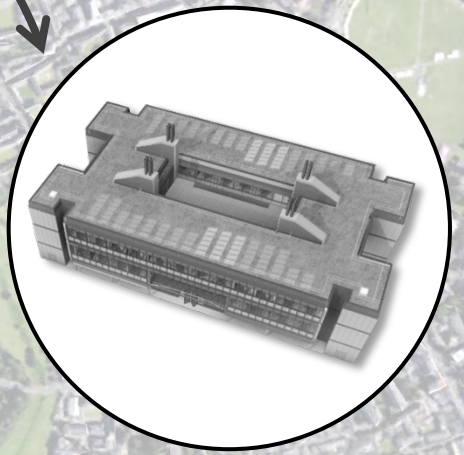
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Phase I
(Civil Engineering)



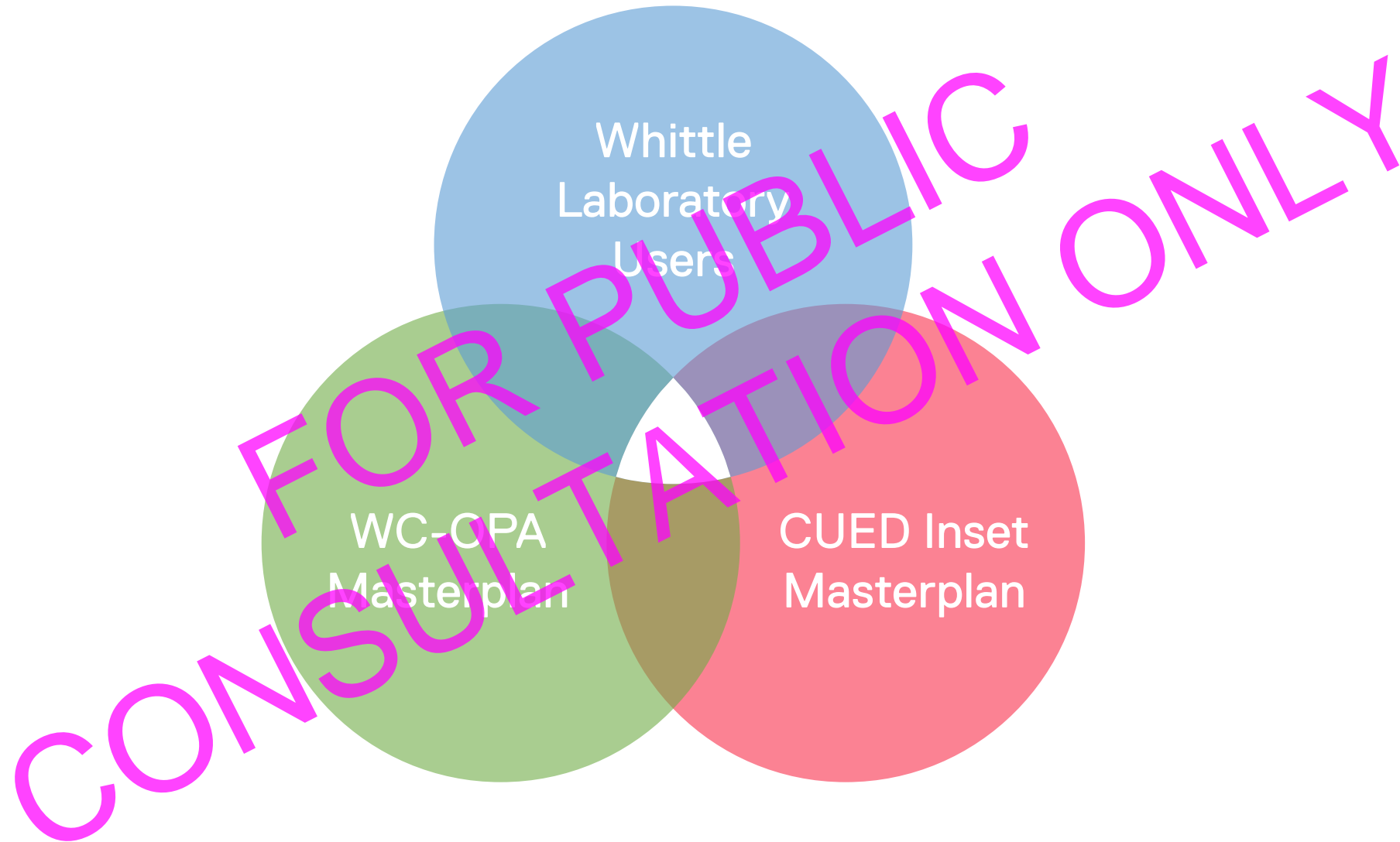


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Phase II
(Whittle Laboratory)

Phase I
(Civil Engineering)



— EXISTING LAB —

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WHITTLE II
DEVELOPMENT
SITE

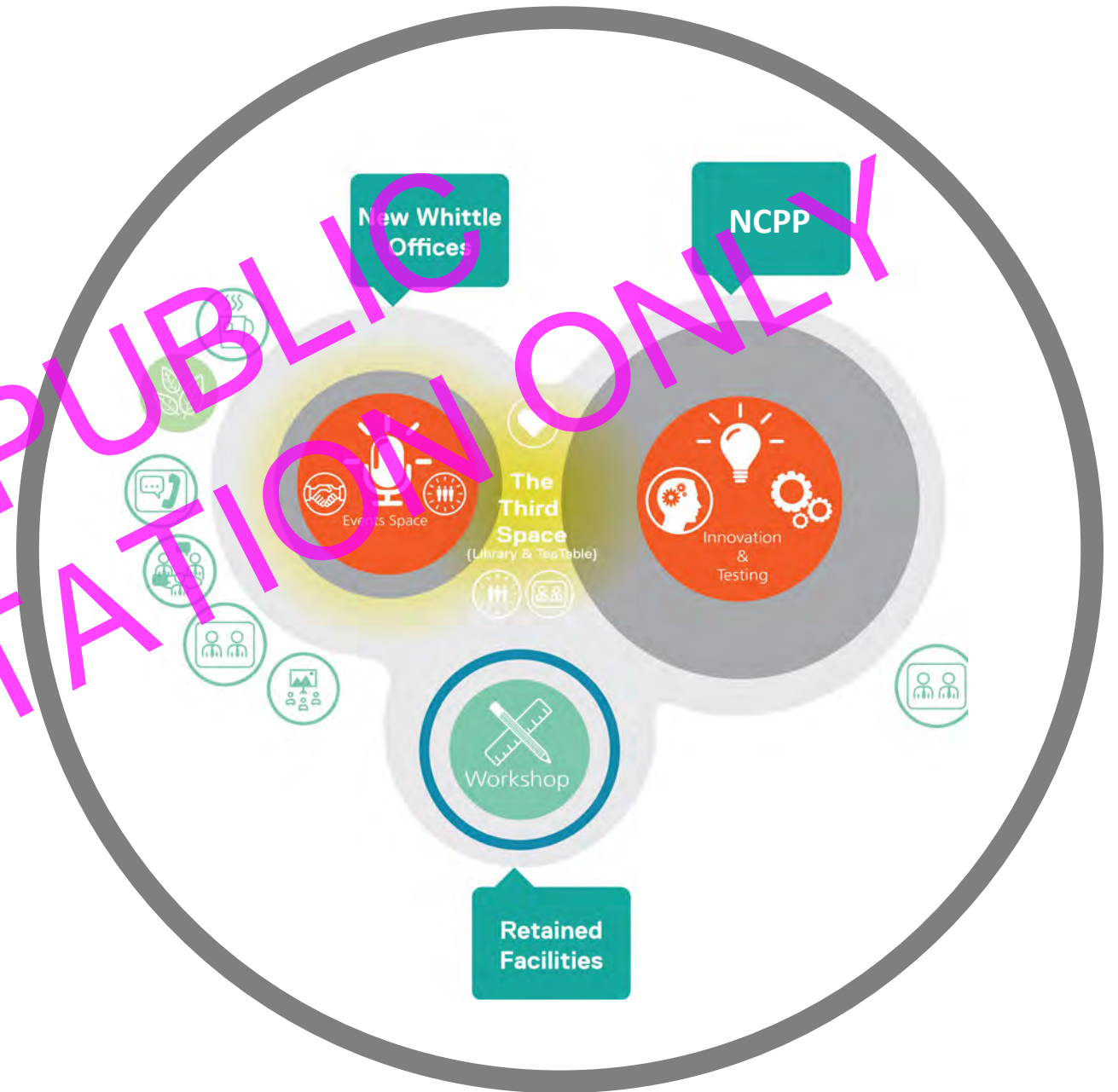
DEMOLISH EXISTING
OFFICES

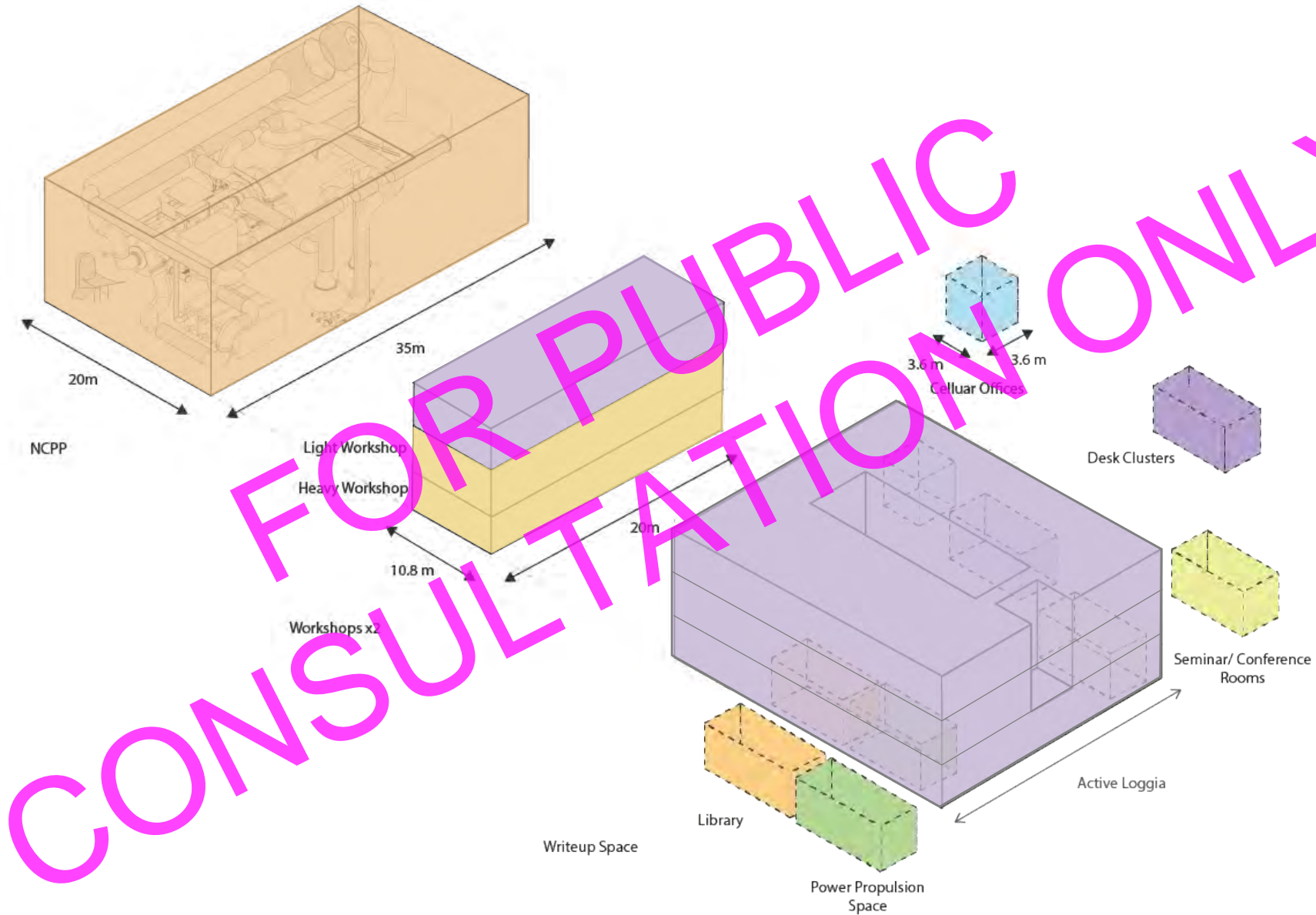
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– ARCHITECTURAL DESIGN –

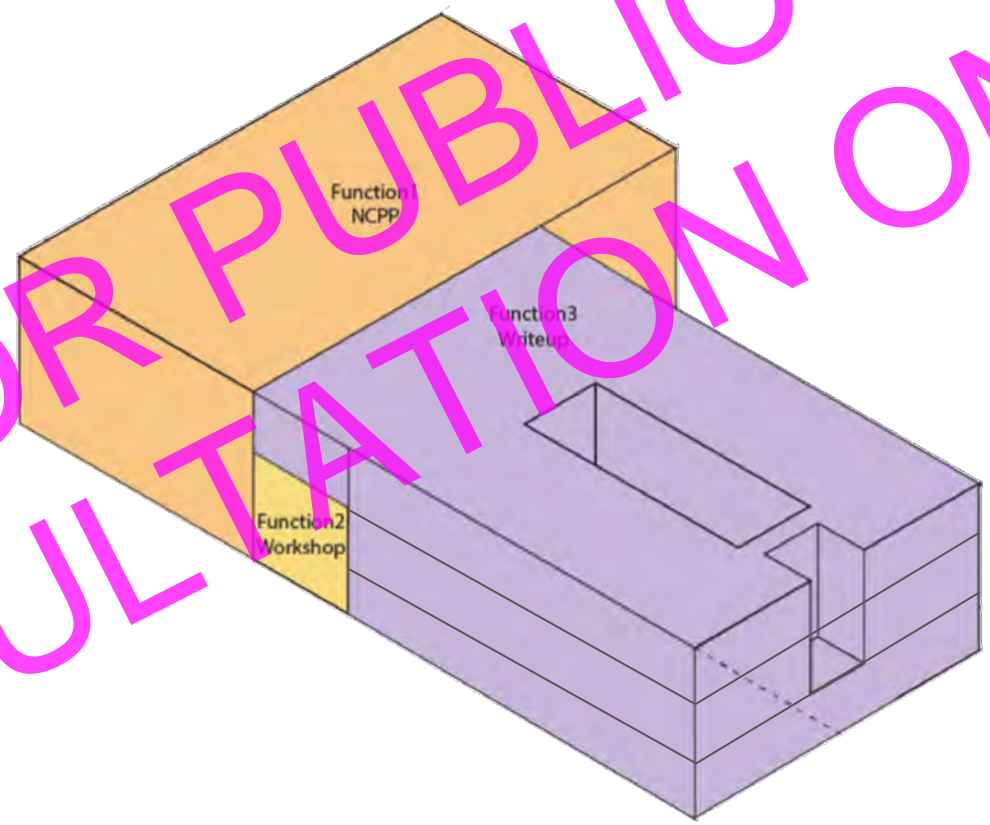
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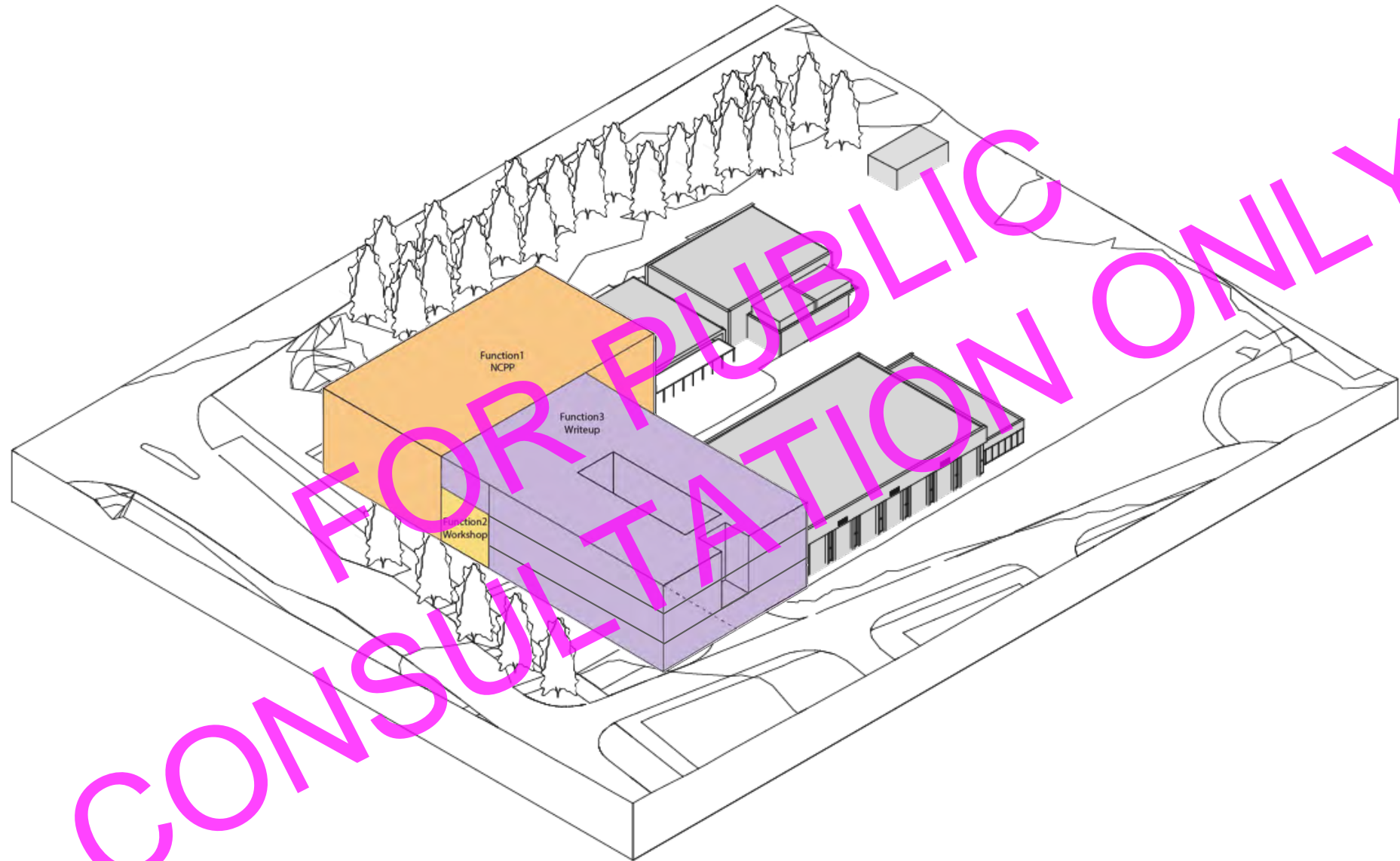
- NCPP laboratory
- Workshops
- Mixture of private, shared & open plan offices
- Embedded industry
- Private industry
- “Tea Table” as a focal point
- Movement Sequence through building
- Wide corridors
- Natural Ventilation & Daylight
- Connection to Nature





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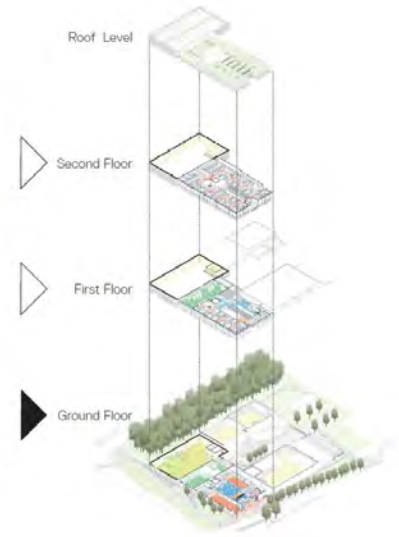




4.2.3 GROUND FLOOR PLAN

- Entrance
- Atrium
- Power Propulsion Room
- Seminar & Meeting Rooms
- Workshops
- NCFP
- Tea Table
- First Floor Terrace Garden
- Office Space
- Breakout Spaces
- BIH / Support Facilities

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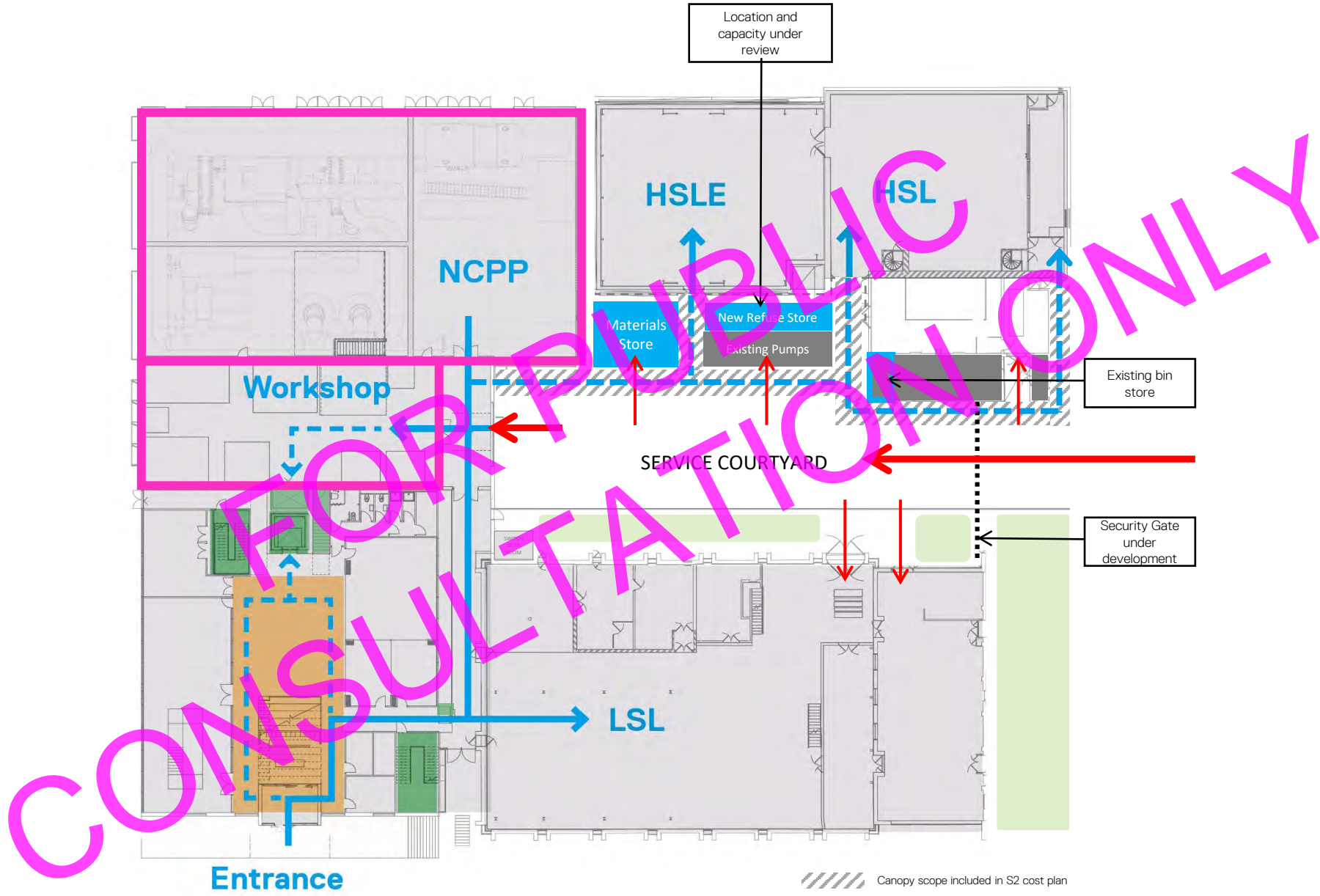








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View 02

-  Anodised Aluminium
-  Equitone
-  Glass



View 01

-  Anodised Aluminium
-  Equitone
-  Glass

"Backpainted Glass"
-same shiny look & feel as clear glass but opaque-

Acoustic Louvers
[Basalt Grey]



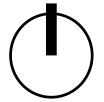


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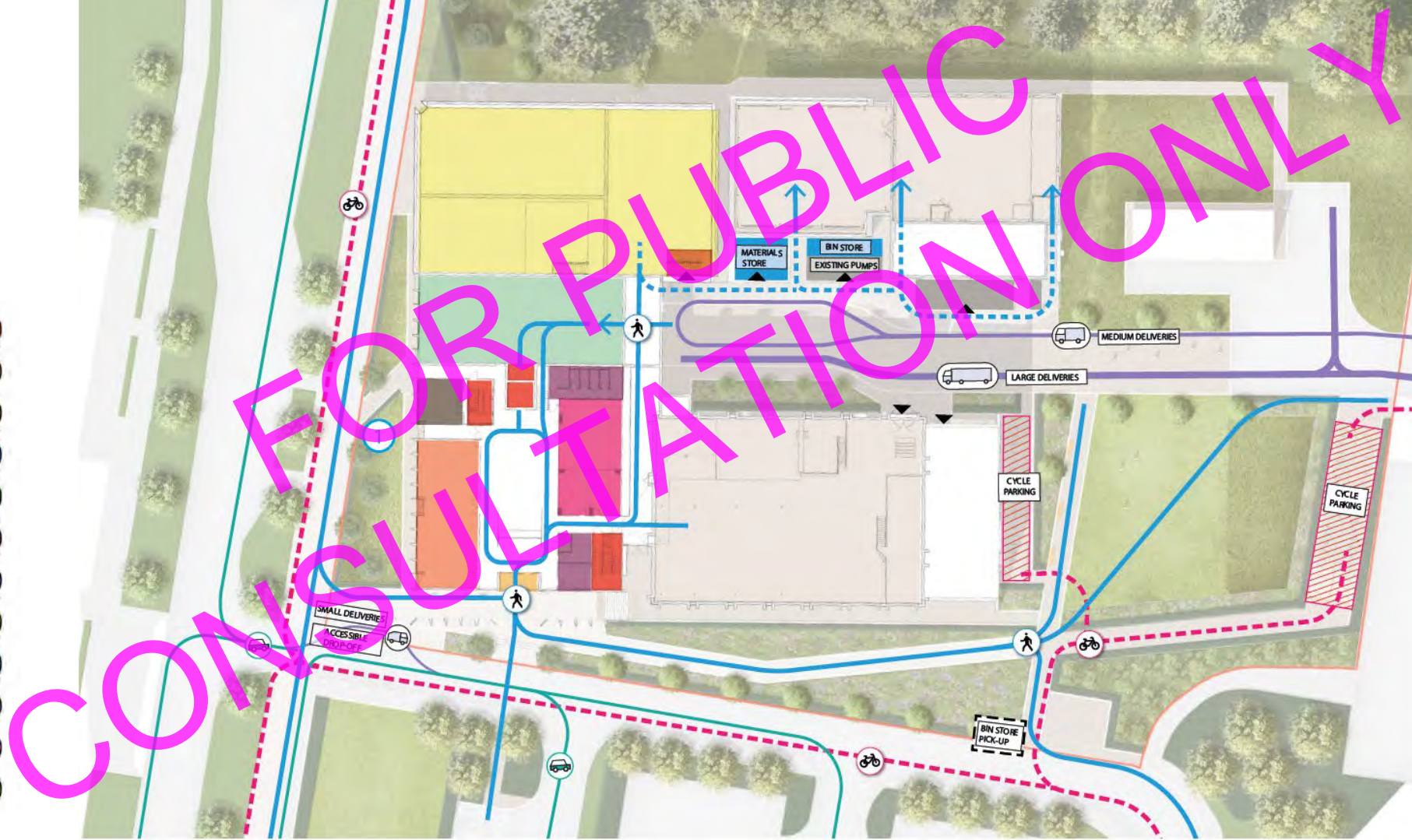


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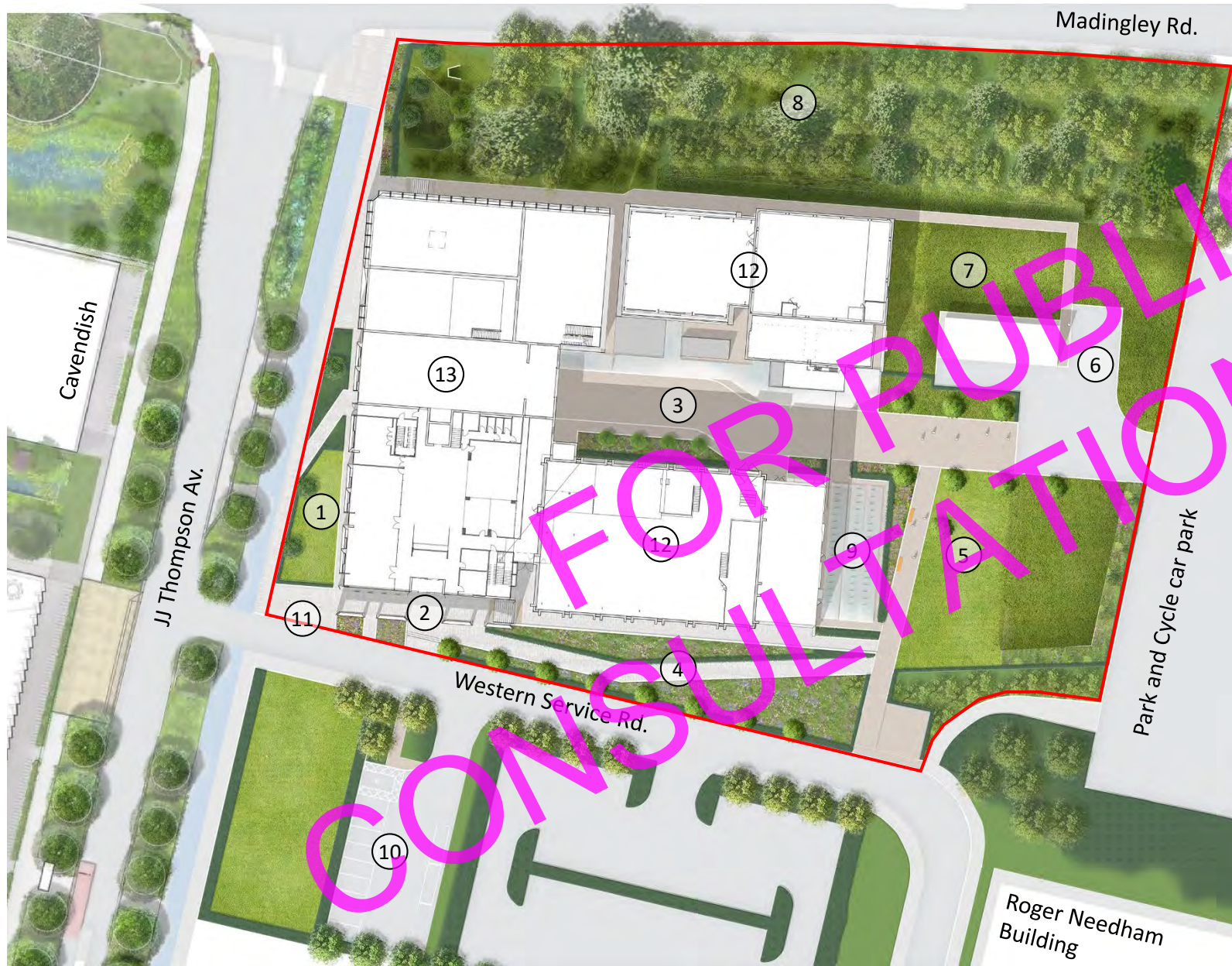


- Entrance
- Library
- Power Propulsion Room
- Seminar & Meeting Rooms
- Workshops
- NCPP
- Tea Table
- First Floor Terrace Garden
- Offices Space
- Breakout Spaces
- BoH / Support Facilities
- Vertical Circulation



— LANDSCAPE DESIGN —

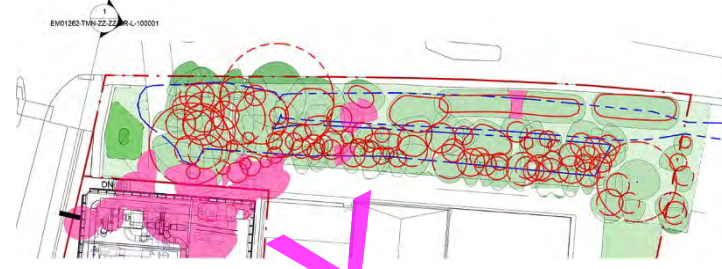
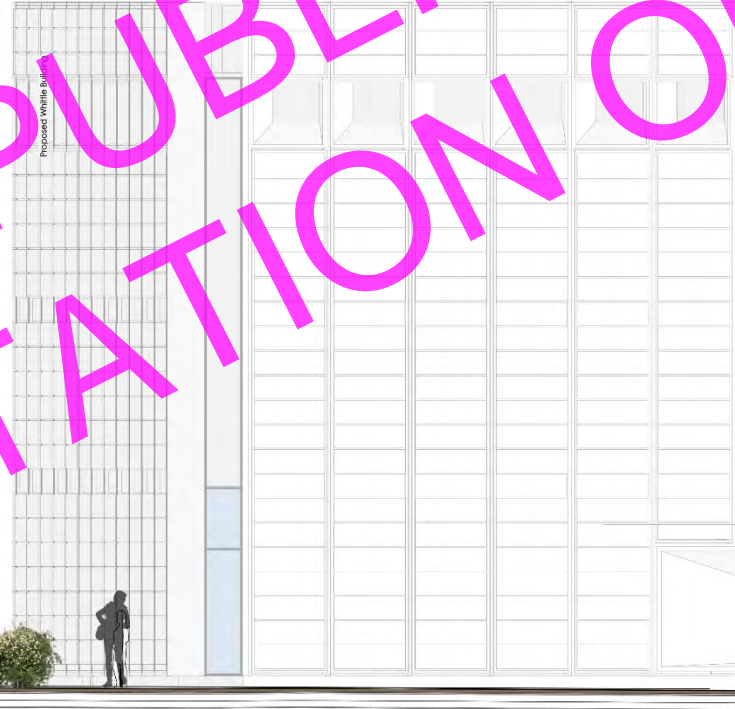
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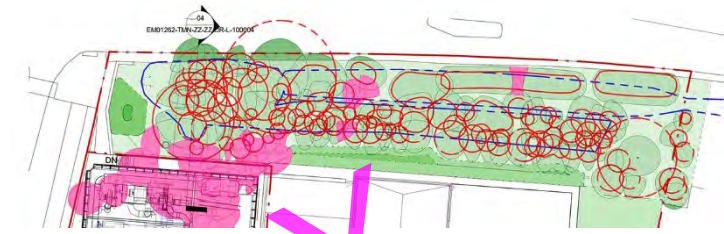
Plan showing interim masterplan

1. JJ Thompson Lawn;
2. Entrance square with opportunities for chance encounters;
3. Whittle courtyard;
4. Southern approach;
5. Whittle square;
6. Vehicle turnaround in Masterplan location;
7. Future Whittle plot. Planted in the interim with meadow planting;
8. Northern boundary retained and enhanced with swale;
9. Cycle Parking;
10. Interim parking;
11. VIP Drop off
12. Existing Whittle Labs
13. Proposed Extension

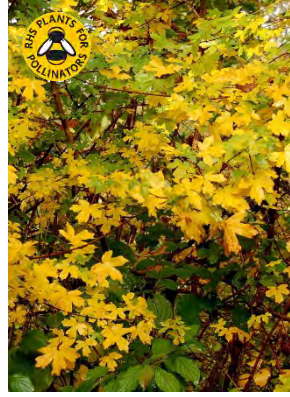




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- Existing tree removed
- RPA
- Mandatory Trees

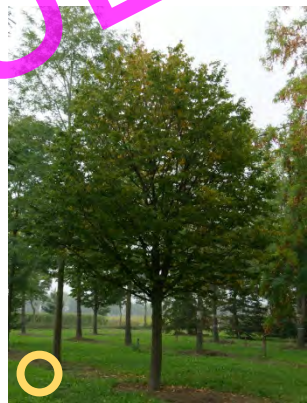


(A)

(B)



(C)



A. 'Native Hedge'

- Hawthorn/ *Crataegus monogyna*
- Blackthorn/ *Prunus spinosa*
- Field Maple/ *Acer campestre*
- Dog Rose/ *Rosa canina*
- Hazel/ *Corylus avellana*
- Crab Apple/ *Malus sylvestris*

B. Shrub planting

- Box-leaved honeysuckle/ *Lonicera pileata*
- Weigela/ *Weigela* 'Mont Blanc'
- Escallonia/ *Escallonia* spp.

C. Trees

- Tulip tree/ *Liriodendron tulipifera* (3no. To front)
- Hornbeam/ *Carpinus betulus* 'Purpurea' (1no.)
- Small-leaved lime/ *Tilia cordata* (1no.)



RHS Perfect for pollinator's list

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WHITTLE II | PRE-PLANNING CONSULTATION 4 | Tree Management with in Northern Bund

Plan showing recommendations from forestry consultant
NB. General coppicing of existing shrubs, i.e. Hazel, is recommended

- Proposed Trees
- Existing Trees
- Thinning/ Removal of existing trees.
- Selective Shrub Planting
- Area 1: Ivy clad trees
- Area 2: 25% of canopy leaving no large gaps
- Area 3: Woodland edge shrubs
- Area 4: Shade tolerant shrubs
- Area 5: Swale (Native seed mix)



Plan showing JJ Thompson Avenue relationship

- 1. Northern Woodland & Entrance corner
- 2. Cycle Lane
- 3. Footpath view to Whittle Lab
- 4. Whittle Entrance/ Colonnade

- 5. VIP/ Taxi Drop off
- 6. Disabled Parking
- 7. Existing Bus stop
- 8. Fire Escape access



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WHITTLE II | CONTRACTOR BRIEFING DAY | FUTURE CUED DROP-OFF SQUARE

Plan showing JJ Thompson Avenue relationship

- 1. Northern Woodland & Entrance corner
- 2. Cycle Lane
- 3. Footpath view to Whittle Lab
- 4. Whittle Entrance/ Colonnade

- 5. VIP/ Taxi Drop off
- 6. Disabled Parking
- 7. Existing Bus stop
- 8. Flexible space for engineering exhibitions/ events





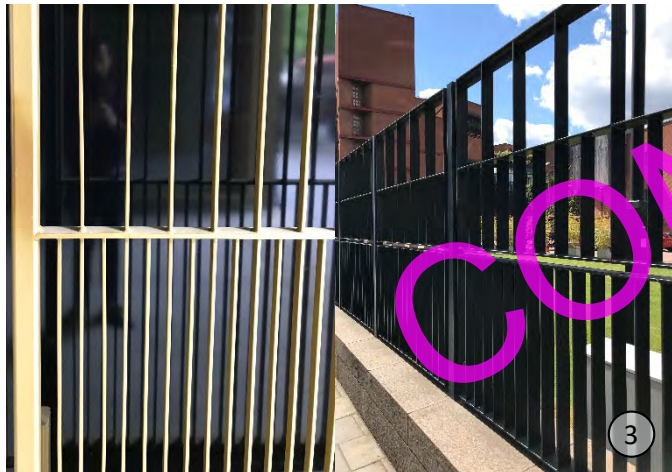
Plan showing Whittle Square (Option 02)

- 1. Whittle courtyard;
- 2. Approach to entrance;
- 3. Whittle Lawn;
- 4. Benches with fragrant planting behind;
- 5. Cycle Storage, surrounded by hedging;
- 6. Bin collection point in interim;
- 7. Existing hedge habitat retained;
- 8. Meadow landscape;
- 9. Vehicle turnaround;
- 10. Substation;
- 11. Park and Cycle.



Plan showing Courtyard

1. Canopy providing external access between buildings;
2. Shade tolerant planting;
3. Secure 1.8m high manually sliding gate;
4. Bin/ Materials Stores;
5. Shared porous surfacing



— QUESTIONS —

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