

12.2126 Main Quad Pop-up Lab

UCL

DESIGN & ACCESS STATEMENT
Rev - DRAFT

15.12.2021

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1.1 Introduction

This Design and Access Statement (DAS) has been prepared by Twelve Architects on behalf of University College London (UCL). It accompanies an application for Planning and Listed Building Consent for changes to a temporary teaching facility within the Main Quad at UCL's Bloomsbury Campus.

This DAS has been prepared to supplement the application drawings by providing a summary of the UCL requirement, locations considered to meet these needs, the design aspirations and historic background leading to the submitted proposals.

1.2 Project Team

CLIENT	University College London (UCL) Estates
ARCHITECT	Twelve Architects
PROJECT MANAGER	Fulkers Bailey Russell
PLANNING CONSULTANT	Gerald Eve LLP
COST CONSULTANT	Aecom
MEP CONSULTANT	BDP
ACOUSTICS	BDP

1.3 Supporting Documentation

This Design and Access Statement should be read in conjunction with a number of documents that are submitted with the planning application, including;

- ° Architectural Drawings
- ° Energy & Sustainability Statement
- ° Acoustic Design Statement
- ° Planning Statement

2 Project Overview

2.1 Current UCL Requirement

As a result of the A Level marking system during the pandemic, a number of universities have seen an unexpected increase in the number of students joining in September 2021 and in the previous academic year. The result is that UCL has 4,000 students more than planned for over the next 4 or 5 years. UCL is one of the university's which has seen a notable increase in the number of students joining the engineering and science faculties, thus creating additional pressure on UCL to accommodate teaching and research space across the campus.

Specifically, UCL has identified a need for specialist laboratory facilities ('Wet' Labs) as a result of the increase in student numbers.

Following an appraisal of how best to provide this additional lab space it was determined that two labs summarised below could be accommodated in temporary facilities:

1. 30-40 person lab for the Institute of Materials Discovery
2. 70-80 person teaching lab for Chemical Engineering

2.2 Initial Summary Brief

The below is the initial summary brief for the Institute of Materials Discovery and Chemical Engineering Laboratories forming the starting point for option studies;

1. 30-40 person Institute for Materials Discovery Laboratory

- 5 Re-circulatory fume hood with 4 to 6 mains plug
- Storage underneath each hood
- Working surfaces along the walls (whenever there is not fume hood)
- 2-3 main plugs each section
- Storage cupboards underneath working surfaces
- 2No. washing basins – one for glassware and one for hand wash
- Internet connection
- Eye wash facility for accident and first aid kit
- Shelves above all worktops for further storage
- Trays for organising materials
- Rubber floor
- 5No. mobile standalone fumehood
- 6No. benches
- 20 No. sockets
- 2No. sinks

2. 70-80 person Chemical Engineering Teaching Laboratory

- Good general ventilation
- Local deionised water supply/generator
- Mains cold water and sink for rinsing glassware
- Mains cold water and local drainage for cooling 2No. benchtop rigs
- Drainage for 3No. rigs
- Eyewash wands
- Equipment storage (2No. 1m wide lockable steel cupboards)
- Lockers for students (can be cleared at the end of session)
- Separate lockable prep room
 - Space for staff to make up solutions
 - 1No. small fridge
 - 1No. small flammables cabinet
 - Sink (1 No.)
 - Ideally DI water
 - Hot and cold mains water
 - 1.5m bench space
 - Minimum 1No. under bench chemicals cupboard
 - Electronic balance
 - 2No. Cupboards for glassware storage
 - Space for 1No. PC and 1No. monitor

2.3 Planning History

Relevant Planning History

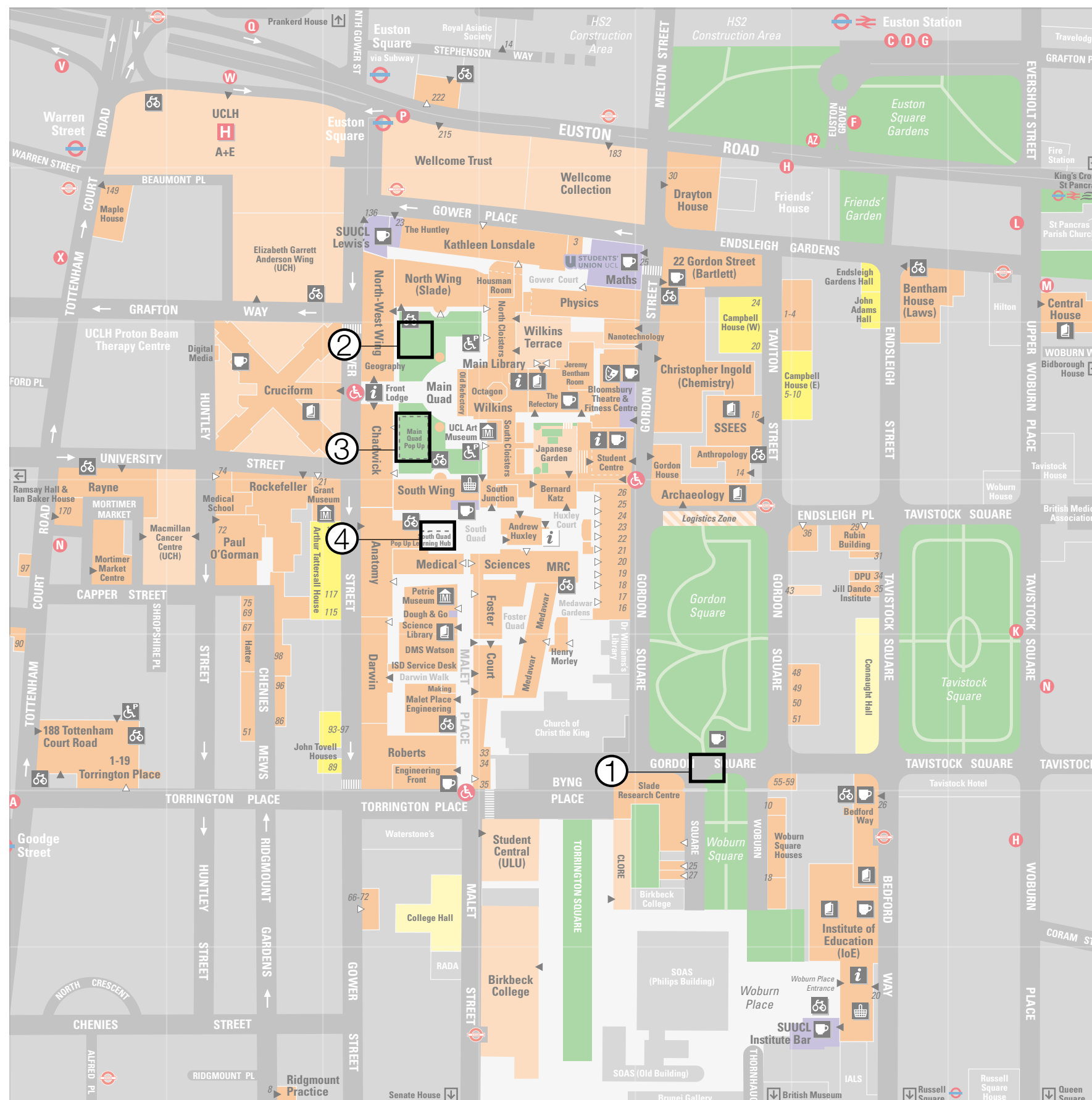
Planning permission (ref: 2017/2934/P) was granted on 19th July 2017 for the “Installation of a two-storey temporary (5 years) building for use as teaching space within the Main Quad of the Wilkin’s Building at UCL’s Bloomsbury Campus.”

This permission is due to expire on 19 July 2022, and this application seeks to extend the temporary use of the teaching space for laboratory use.

2.4 Development Opportunities Considered

As noted above, UCL identified a need for specialist laboratory as a result of the increase in student numbers. Four locations were initially identified within the UCL campus to fulfil this need:

1. Gordon Square - New temporary building
2. Main Quad (North) - New temporary building
3. Main Quad (South) - Re-use of existing ‘Pop-up’
4. South Quad Pop up - Re-use of existing ‘Pop-up’



2 Project Overview

2.4 Development Opportunities Considered (cont.)

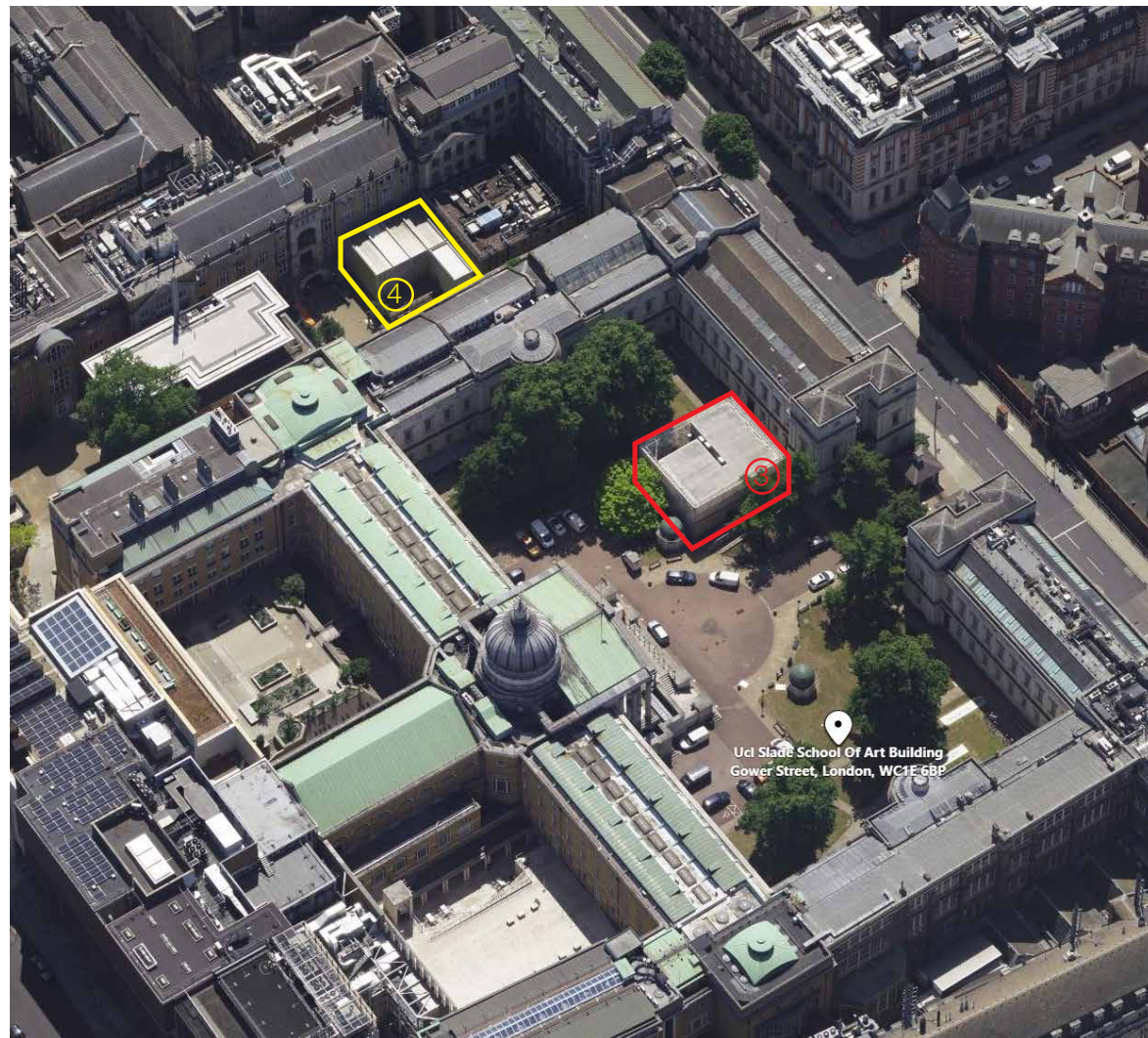
Consultation with relevant stakeholders was undertaken and an appraisal of each of the locations was carried out to determine the suitability of each.

The Pro's and Con's of each appraised location is summarised on the table over.

The new temporary buildings proposed on Gordon Square and the Main Quad (North) were both discounted at this stage for a number of reasons including disruption to the highway, and impact on Heritage Assets.

At this stage it was decided to take forward and explore further the re-use of the following existing 'Pop-Up' facilities:

3. Main Quad (South) - Re-use of existing 'Pop-up'
4. South Quad Pop up - Re-use of existing 'Pop-up'



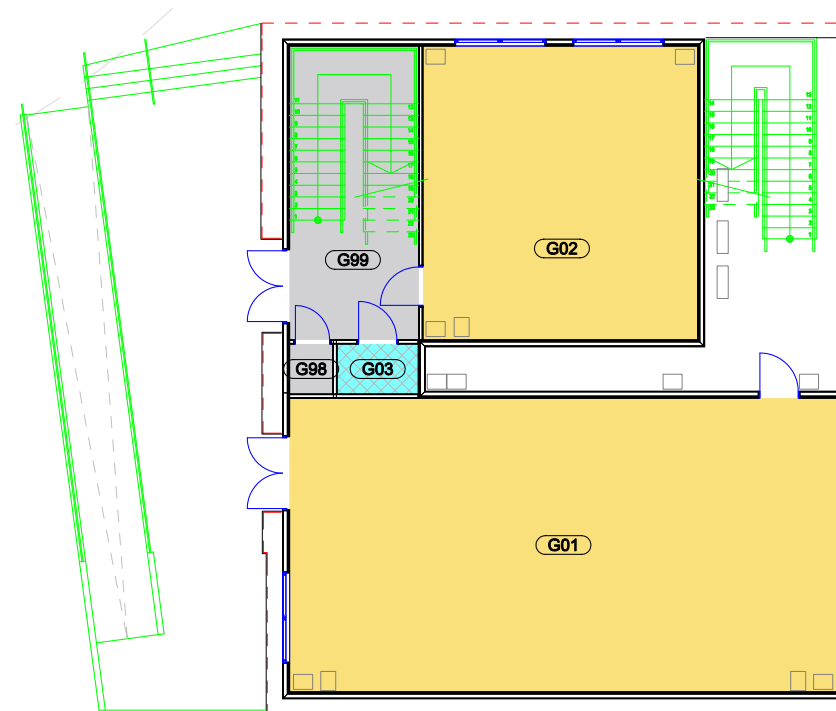
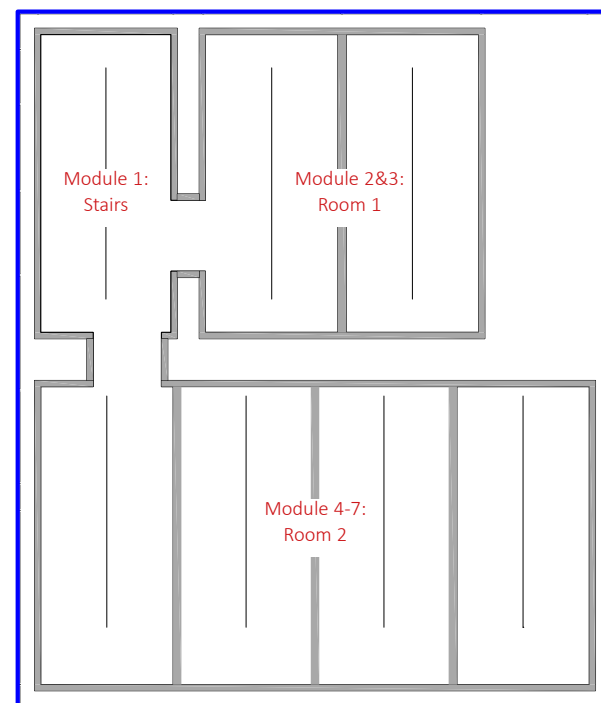
Option	Pros	Cons
1. Gordon Square Public Highway		<ul style="list-style-type: none"> Camden Highways advised it is not possible to temporarily stop up the highway for this purpose. Camden planning have strong reservations about the location in terms of the heritage impact. Third party objections from groups such as the Bloomsbury Conservation Area Advisory Committee would be expected
2. New temporary building in the Main Quad (North)		<ul style="list-style-type: none"> The Wilkins Building is Grade I listed - Listed building application required Harm to the setting of a heritage asset, although temporary Need to demonstrate to planner no other alternative available Tree root protection zones and tree canopies constraints. Arboricultural report required for planning and listed building application.
3. Re-use of pop-up 440 (Main Quad)	<ul style="list-style-type: none"> The temporary permission for the two-storey temporary structure within the Main Quad has a 5 year life time which expires on 19 July 2022. Camden keen for permanent removal. However, extension of the existing permission for a further 3 years for the wet lab use is possible as LPA understand the urgency of the need 	<ul style="list-style-type: none"> Need to demonstrate to LPA no other solution is viable
4. Re-use of pop-up 110 (South Quad)	<ul style="list-style-type: none"> Planning permission not required (temporary permission expires on 31 December 2024) Scope to utilise for wet labs until the end of 2024 Less sensitive in heritage terms than the Main Quad 	<ul style="list-style-type: none"> Camden keen for permanent removal of structure, expiry extension would need justification

2 Project Overview

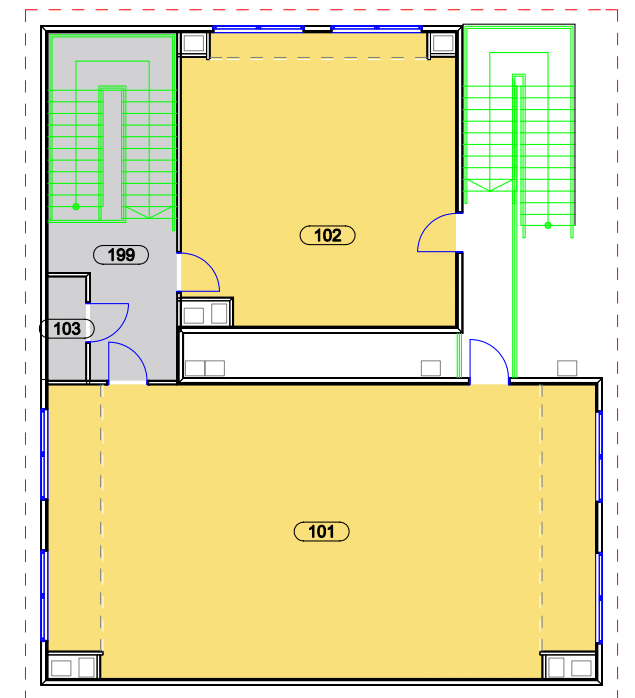
2.5 Existing Main Quad Pop-Up

The original Main Quad temporary teaching facility was erected prior to commencement of the October 2017 academic year. It was provided to meet a critical requirement for quality teaching space arising from growing student numbers, whilst works were undertaken to expand the existing UCL building stock. A requirement for larger 100 person teaching spaces was identified. These offered a greater degree of flexibility and efficiency.

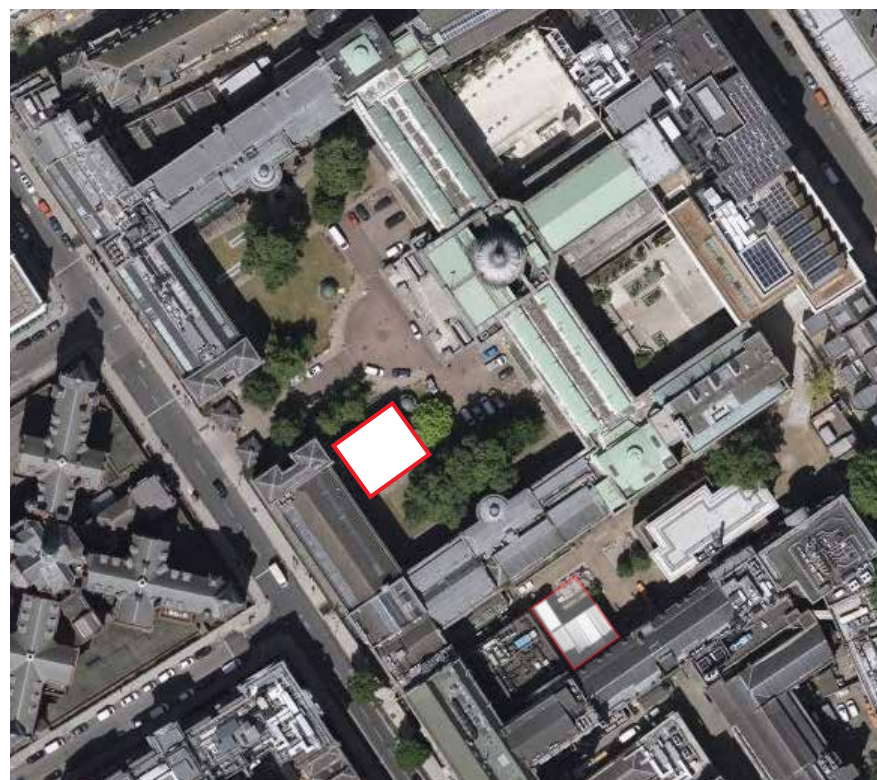
The original Main Quad facility provided 2 no. 100 person and 2 no. 50 person teaching rooms with a total floor space of approximately 300sqm. The temporary facility was a two storey building, subservient in scale to the adjacent buildings, in order to minimise its impact on the UCL Main Quad area.



OCCUPYING DEPARTMENT	
Balance Space	AREA 23
CONFERENCE & ROOM BOOKINGS	140
INFORMATION SERVICES DIVISION	2
TOTAL:	165
GROSS:	238.6



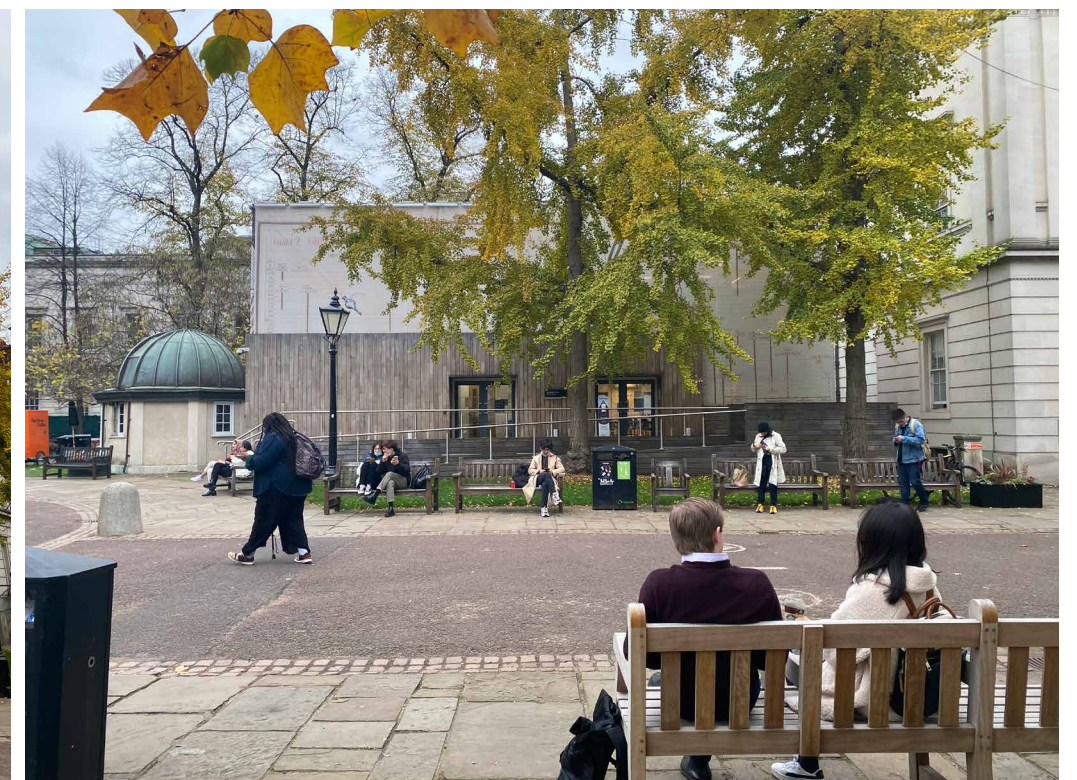
OCCUPYING DEPARTMENT	
Balance Space	AREA 25
CONFERENCE & ROOM BOOKINGS	136
TOTAL:	161
GROSS:	237.2



Aerial of UCL Bloomsbury Quad Building - Main Quad Pop-Up



Photographs of Existing Main Quad Pop-Up Building



2 Project Overview

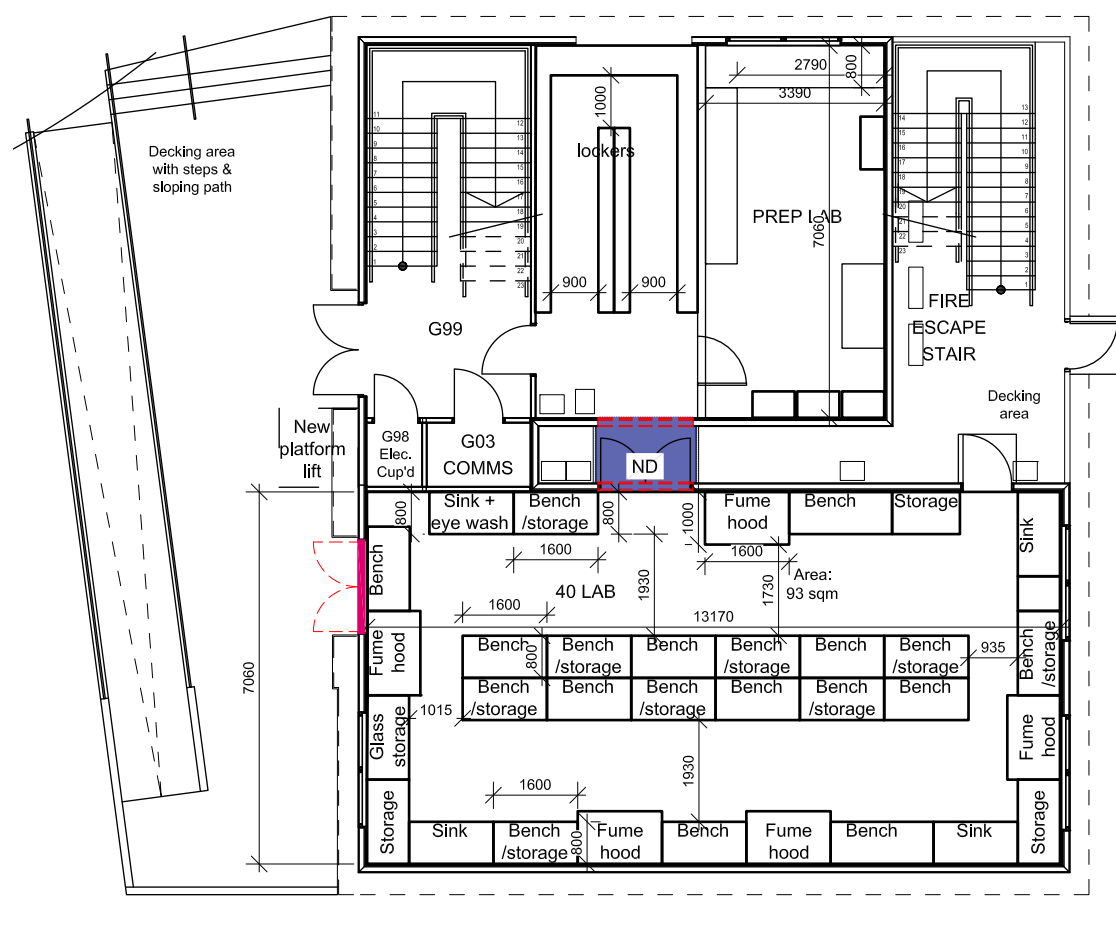
2.5 Existing Main Quad Pop-Up (cont.)

The building comprised modular units linked together and stacked to form a two storey facility. The modular units are concealed in a decorative vinyl screen supported on a freestanding frame. The entrance features timber steps, decking and ramp, and is accented with European Oak cladding along a single storey.

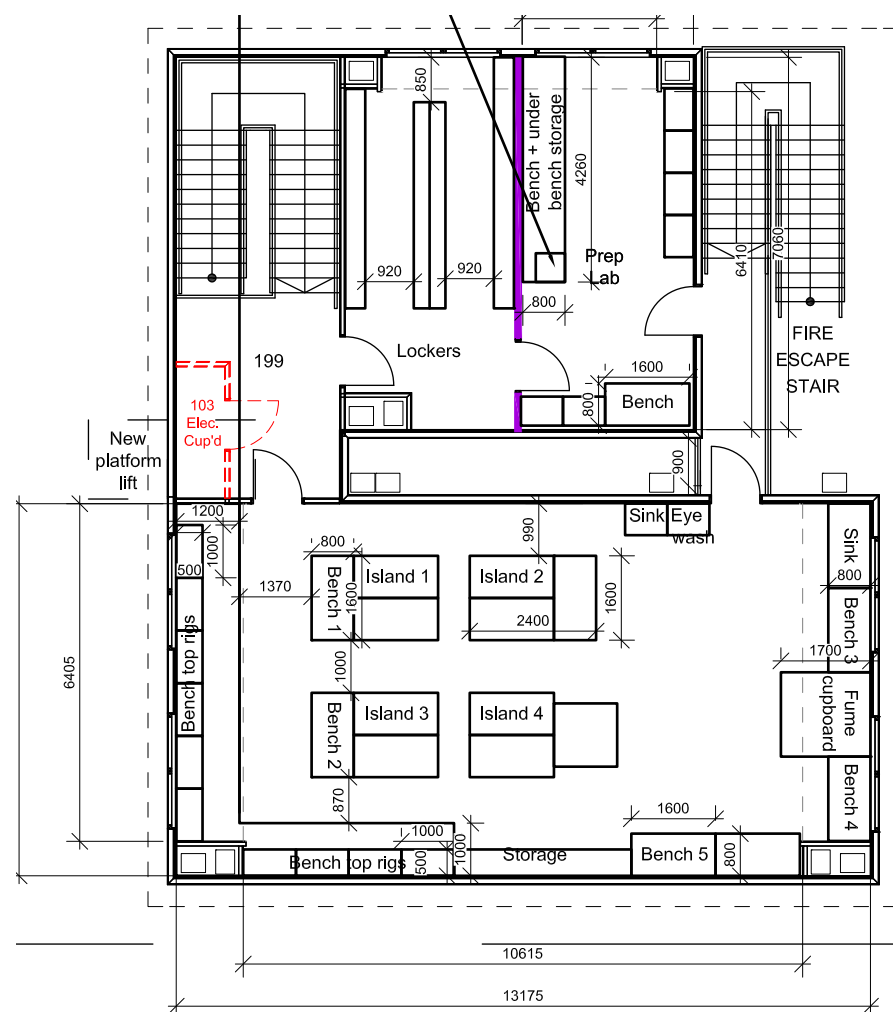
The original building was granted a temporary planning permission lasting 5 years so a new application would be required for any new proposals.

Layout options were sketched to test the suitability of the existing Main Quad Pop-up to accommodate the required lab space. It was found that the IMD and Chemical Engineering Labs could be housed on the ground and first floors respectively. Additionally both could be served by Prep rooms on the same level.

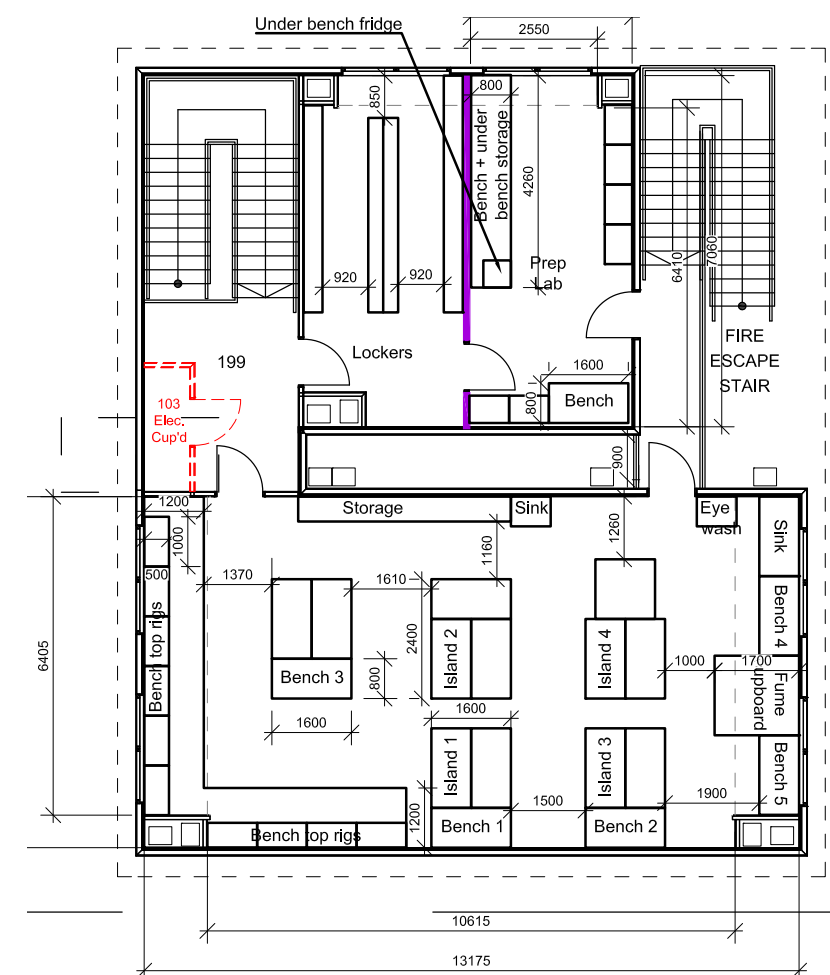
Some of the sketch layout options are shown below.



Sketch Layout Ground Floor - IMD / Prep / Lockers



Sketch Layout First Floor (Opt A) - Chem. Eng / Prep / Lockers



Sketch Layout First Floor (Opt B) - Chem. Eng / Prep / Lockers

2 Project Overview

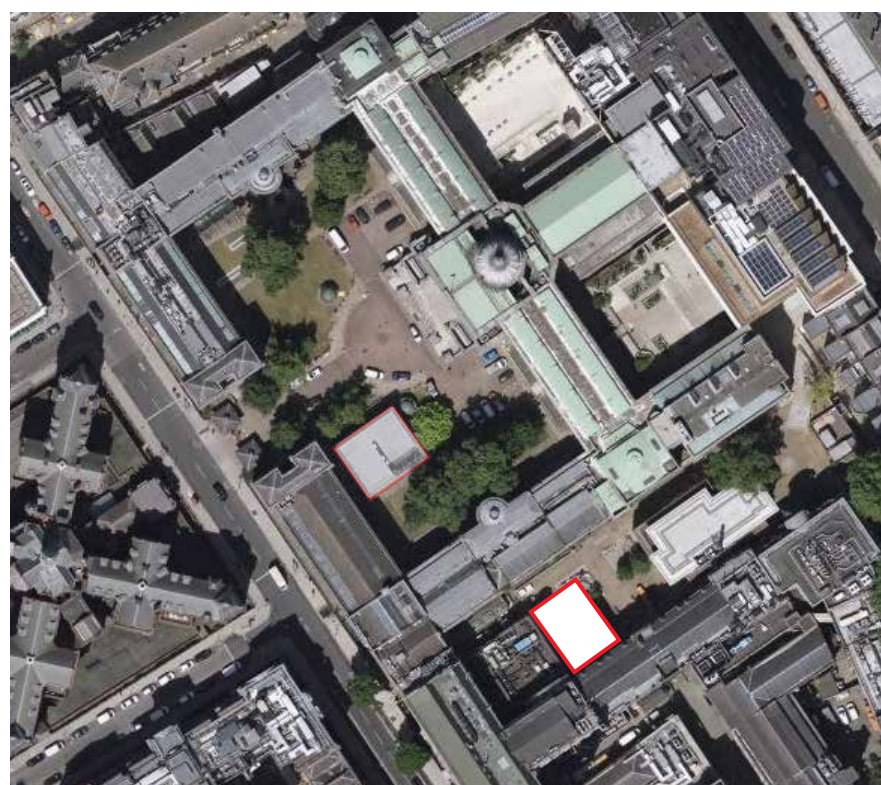
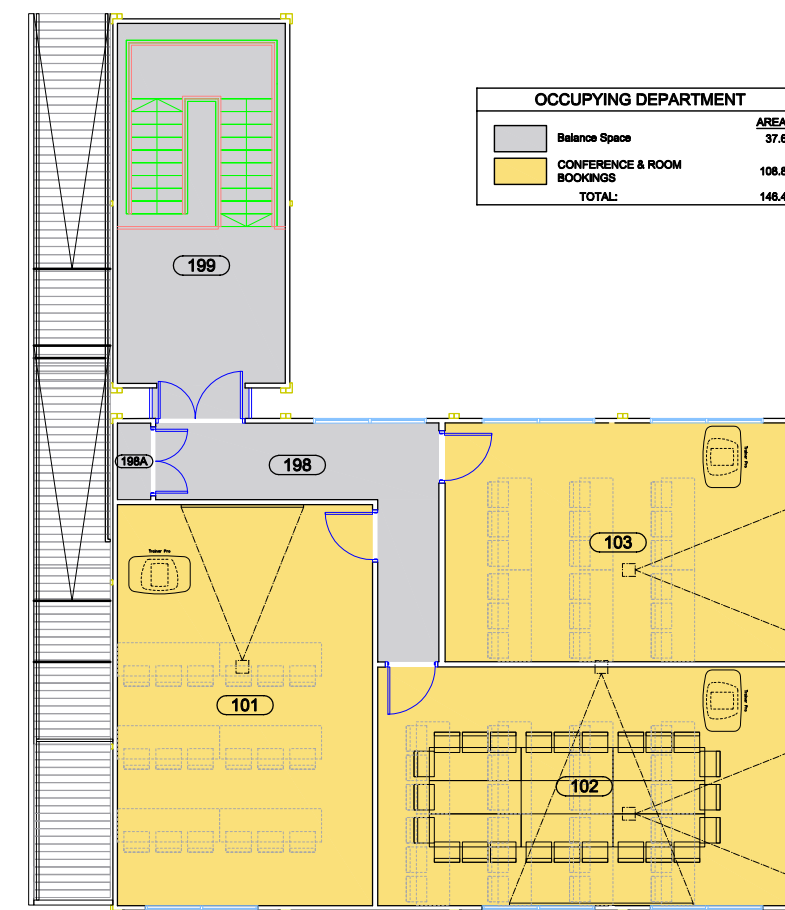
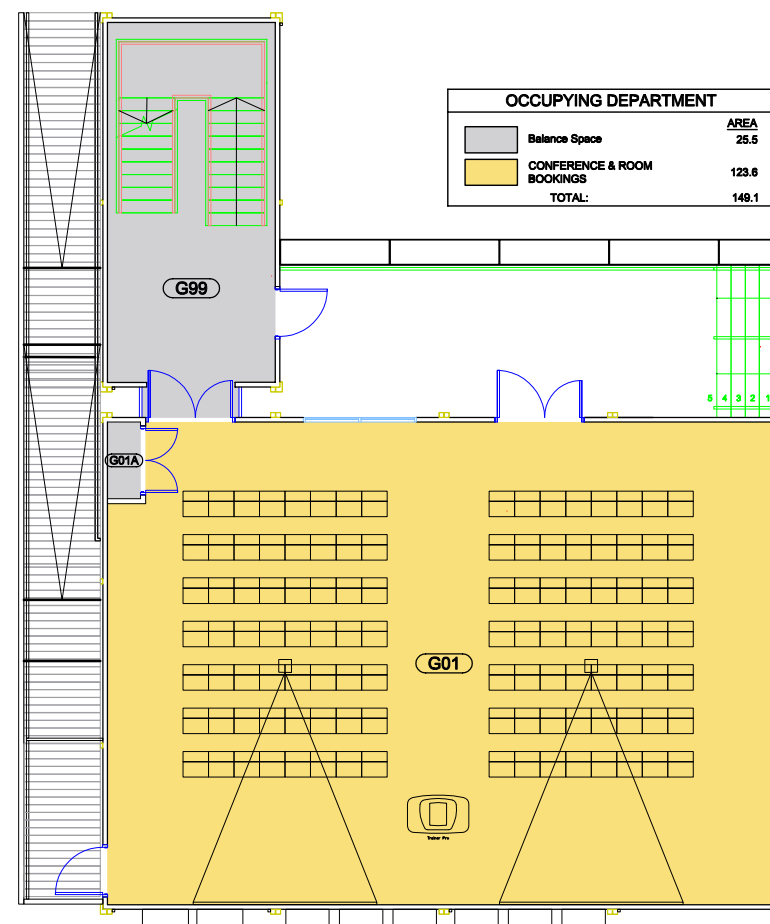
2.6 Existing South Quad Pop-Up

The second potential facility under consideration was a two storey temporary teaching block located in the South Quad between the South Wing, South Junction and the Medical Sciences and Anatomy building.

The South Quad Pop-up has planning permission until the end of 2024. The building comprises modular units linked together and stacked to form a two storey facility. The modular units are finished with an applied artwork design of light grey and yellow. This provides a distinctive appearance to the otherwise utilitarian structures. The entrance features timber steps, decking and ramp, and is accented with European Oak cladding along a single storey.

The South Quad Pop-Up comprises four conference room spaces of differing size, including:

- one 112 person lecture theatre
- two 18 person seminar rooms
- one 24 person seminar rooms



Aerial of UCL Bloomsbury Quad Building - South Quad Pop-Up



Photographs of Existing South Quad Pop-Up Building



2 Project Overview

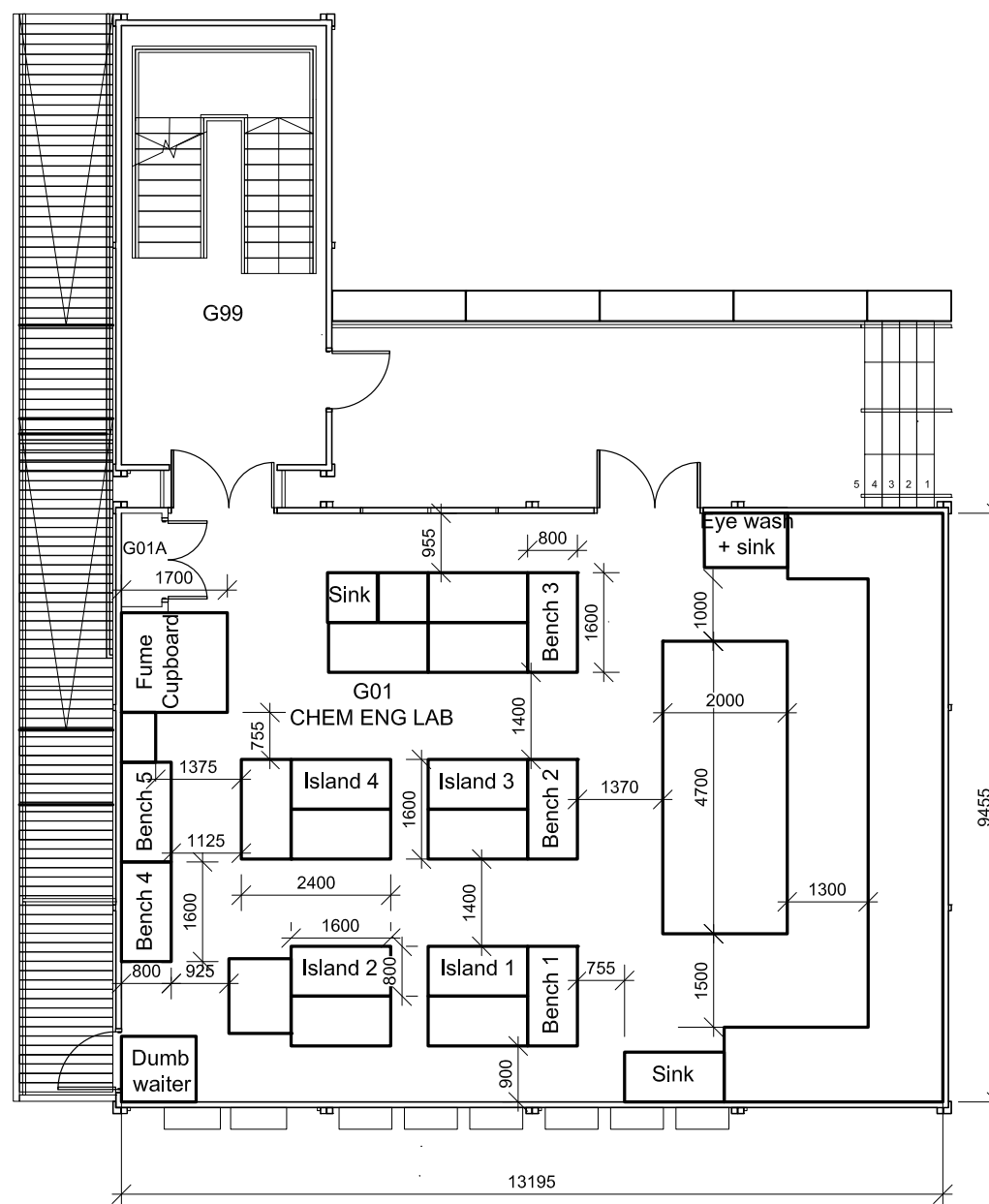
2.6 Existing South Quad Pop-Up (cont.)

Layout options were sketched to test the suitability of the existing South Quad Pop-up to accommodate the required lab space. It was found that the Chemical Engineering Lab and connected Prep room could not be accommodated on the same floor. This arrangement also meant that the IMD Lab would need to be provided separately, leaving only enough space at first floor for two seminar rooms.

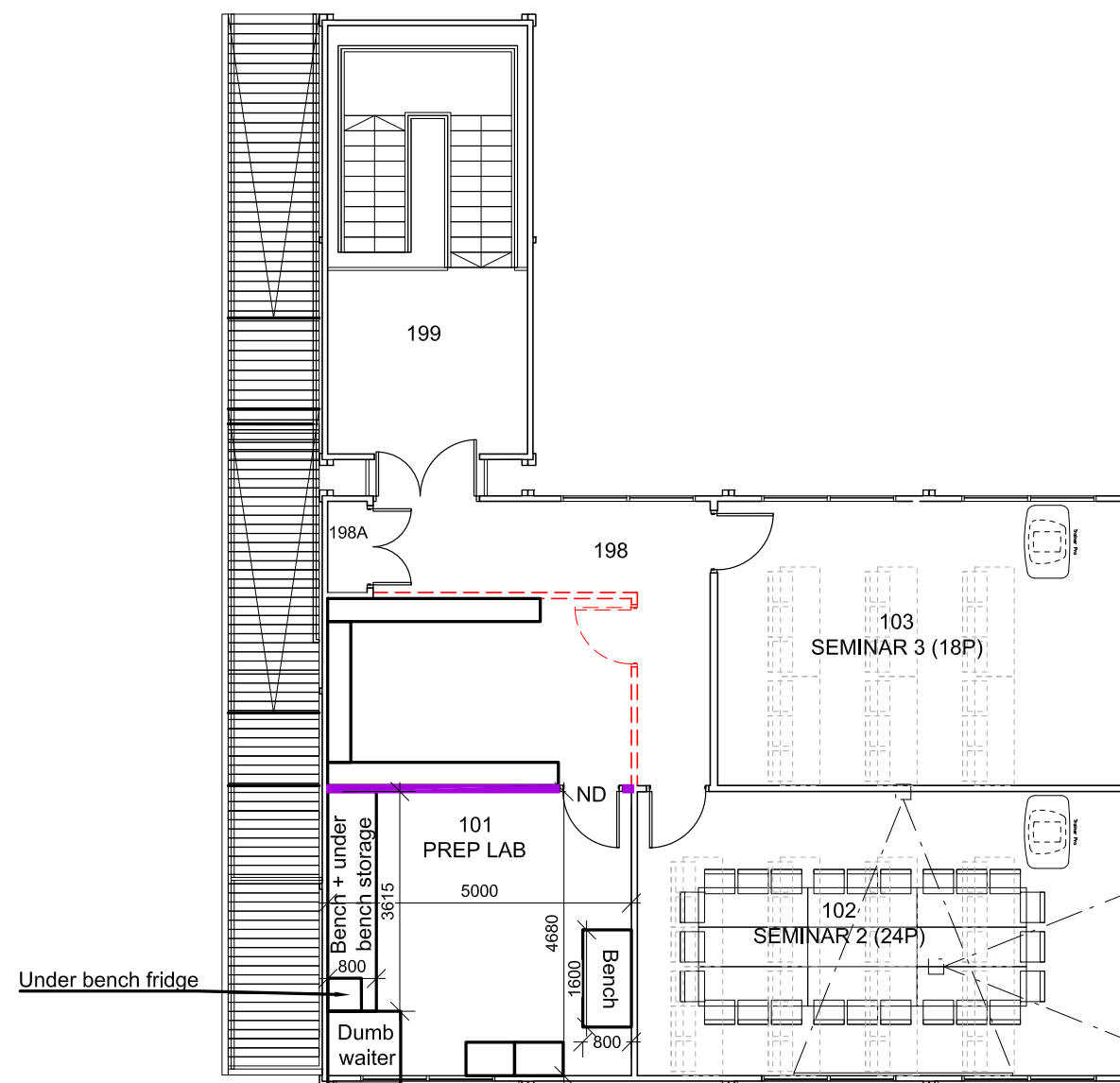
Conclusion

The sketch layout studies and discussions with stakeholders demonstrated that only the Main Quad Pop-Up could accommodate both the IMD and Chem. Eng. labs. Additionally the Main Quad Pop-up had sufficient space to allow Prep Rooms to be located on the same level as their respective Labs.

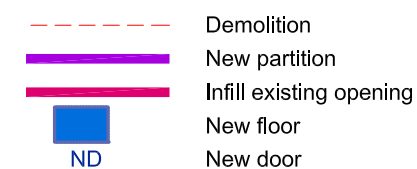
Given the above reasons the Main Quad Pop-up was selected as the most appropriate building to develop final reconfiguration proposals.



Sketch Layout Ground Floor - Chem. Eng.



Sketch First Floor - Prep & Seminar Rooms



3 The Proposals

3.1 Design Approach

The design approach has been driven by the urgent space requirements UCL is currently experiencing. Therefore, an emphasis has been placed on building solutions that could be completed in time for the start of the 2022 academic year. The design approach sought to adapt a suitable existing temporary building to provide the required lab space.

The re-use of existing facilities has many benefits:

- short construction period allowing urgent requirements to be met sooner
- tried and tested facilities can be re-integrated into the campus with minimal risk
- the re-use of existing buildings is the most sustainable building solution in terms of embodied carbon

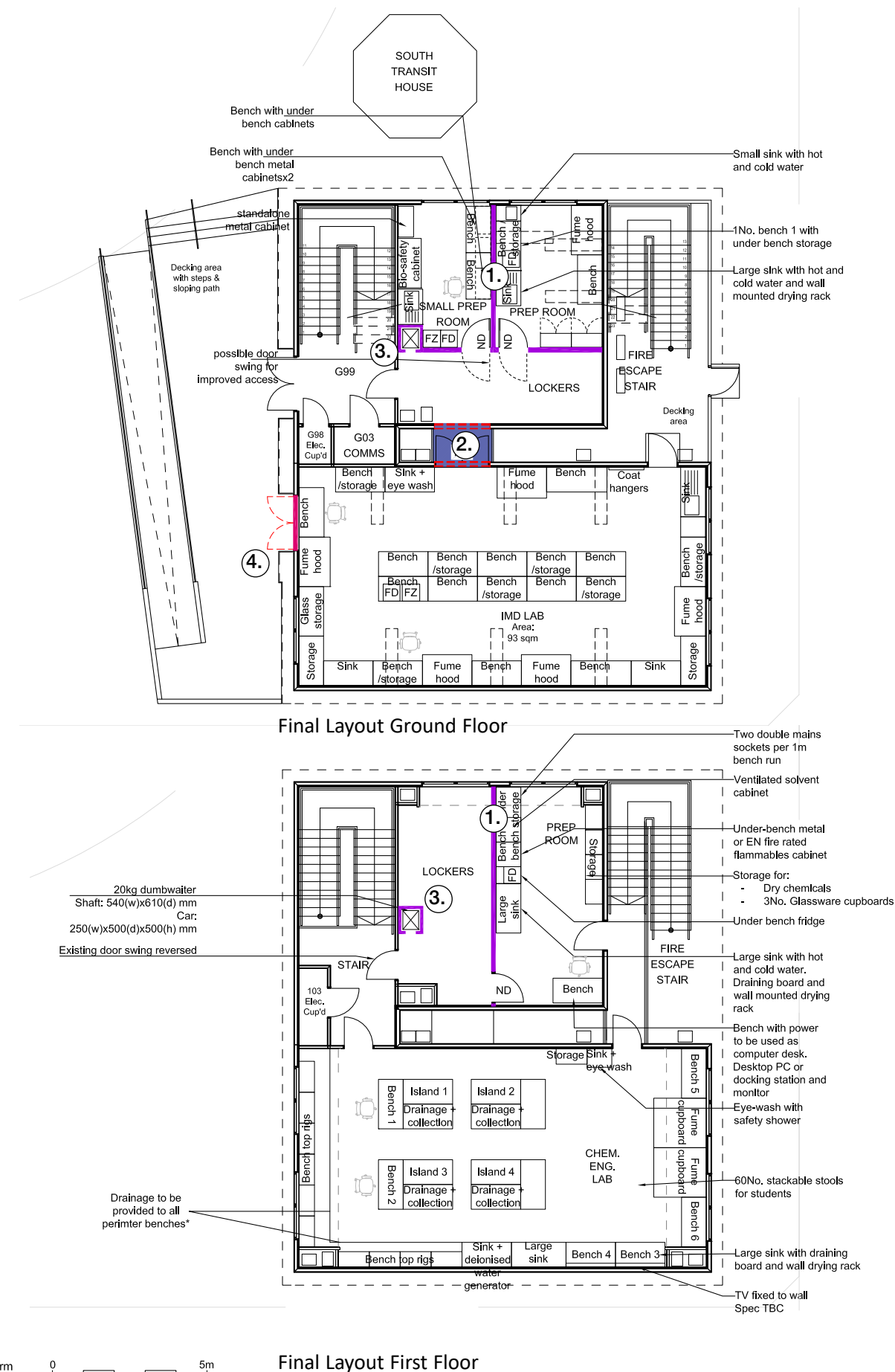
A series of design workshops were held with the relevant stakeholders from UCL, layout options and an accommodation schedule were developed so that a final layout could be signed off by both IMD and Chemical Engineering departments, and also by UCL Estates.

Whilst the internal layouts do not require planning permission the plans opposite and summary below show the internal alterations made to the existing teaching facility.

1. Partitions have been added to form the Prep Rooms and locker areas
2. Openings formed to sides of ground floor modules and linking piece installed to form connection between IMD Lab and Prep Room
3. A dumbwaiter has been installed to allow more convenient movement of equipment between floors
4. External door removed and infill panel installed

The below tables illustrates the small increase in area resulting from the additional link element at ground floor level.

	Existing		Proposed		
	GIA (sqm)	GEA (sqm)	GIA (sqm)	GEA (sqm)	
ground	166.7	178.6	169.2	180.7	
first	166.7	178.6	166.7	178.6	
	333.4	357.2	335.9	359.3	TOTAL
			2.5	2.1	Increase from existing area (sqm)

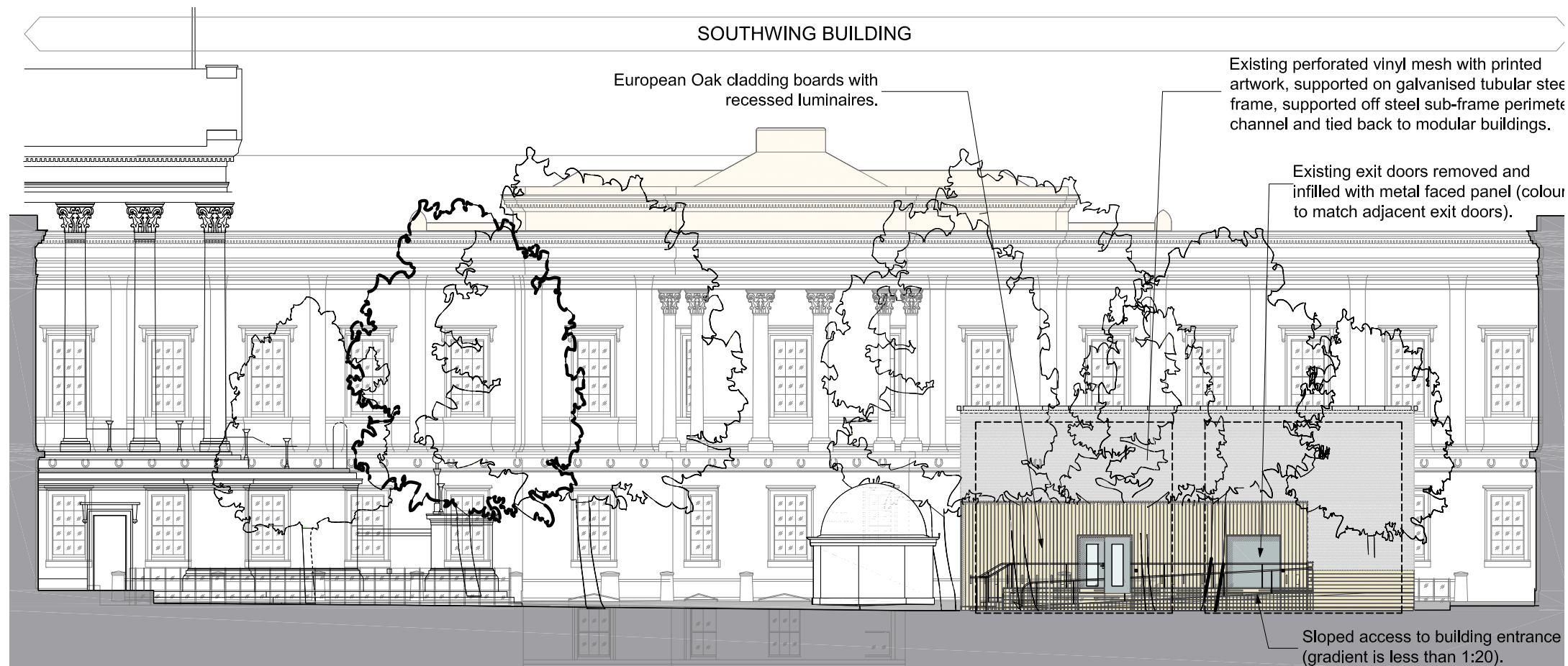


3 The Proposals

3.1 Design Approach (cont.)

Throughout the design development process consideration has been given to the sensitive heritage assets that characterise and enhance the UCL campus.

The Wilkins Building is Grade I listed, and its Classically arranged orthogonal layout lies at the heart of its significance. The Main Quad Temporary Teaching Facility was located in such a way as to have minimal impact on the main axes of the main quad and to cause minimal disturbance to the protected trees therein. is one of the most sensitive heritage locations in the entire UCL campus. The proposed refurbishment of the Temporary Teaching Facility focuses almost entirely upon alterations to the internal layout and creates as little material change to the external appearance as possible. The only change to the external appearance viewed from within the Quad is the infilling of an external double door. All additional plant equipment and linking element will be behind the outer vinyl screen, additional plant equipment at roof level has been avoided.



3 The Proposals

3.2 Access

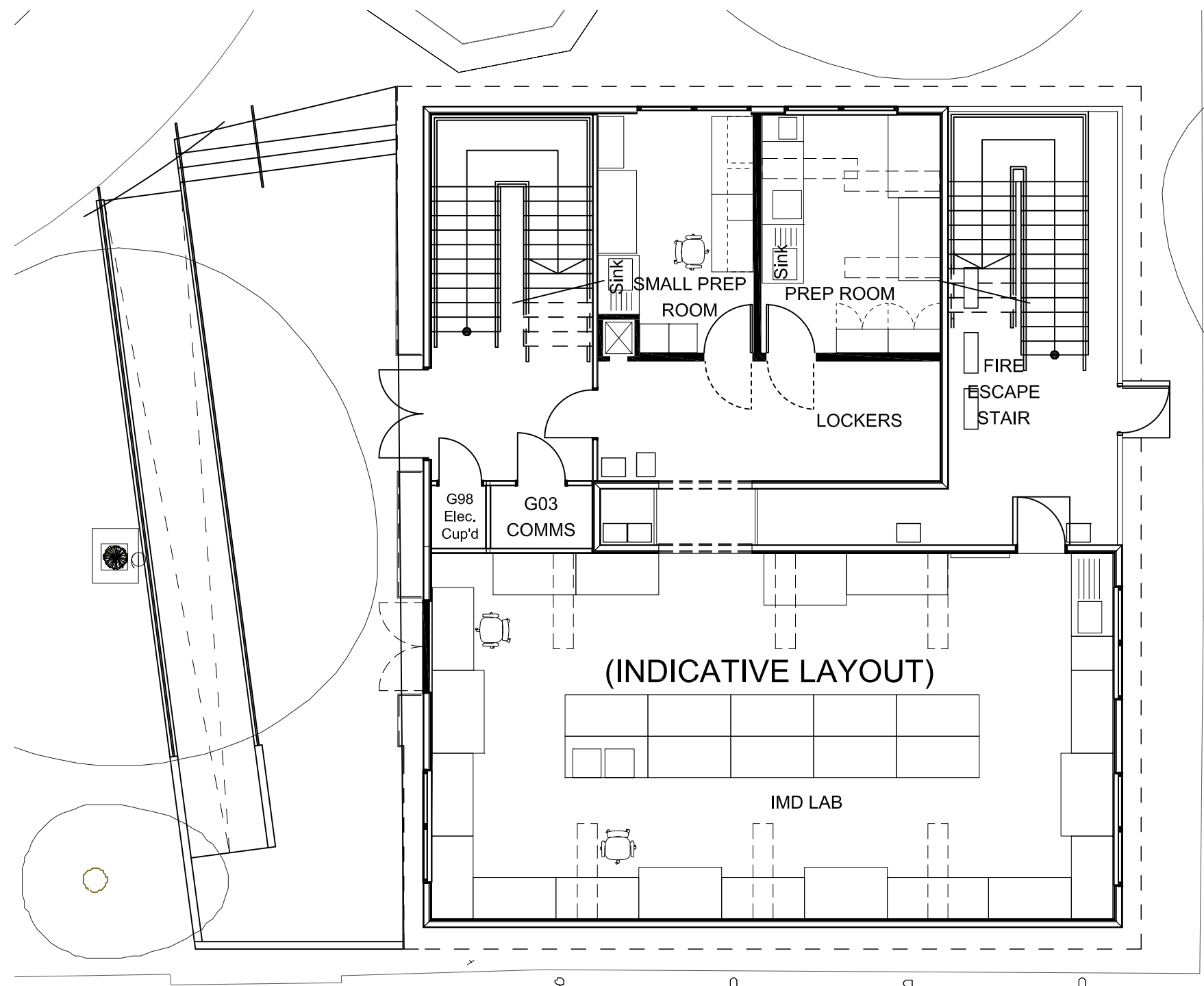
The original temporary teaching space was designed to be accessible at ground floor but to have stepped access to first floor.

A platform lift was considered to be provided as part of the proposed new works, however there were concerns of how this installation might impact on adjacent trees. The locations considered would potentially clash with protected tree canopies, additionally the added weight of the lift installation could potentially have a harmful impact upon the root protection area.

Access to the building will be via stepped access to the front, with a raised landing area outside the main entrances. Shallow sloped access is provided to the raised entrance area for wheelchair users, with a gradient of less than 1 in 20.

Internally the ground floor layout have been designed with consideration given to inclusive access. Corridor widths, space between benches / fixed furniture and door swings are configured to allow for unobstructed passage of wheelchair users.

As the lab is proposed to be a temporary facility, provided on a time limited basis, continuation of existing access strategy is believed to be appropriate.



3 The Proposals

3.3 Building Services Statement

Incoming Services

The new incoming services required for the proposed teaching facility will be water supply and foul drainage connections. Power and Data will use the existing incoming supply. The new water supply will be a branch from the distribution main within Wilkins building, routed in a below ground services duct. The Foul Drainage connection will connect into an existing manhole within the quad and adjacent to the pop up facility. The route for the below ground ducts will be installed to ensure that no damage is caused to any of the tree root protection areas.

Heating, Ventilation and Air Conditioning

The existing mechanical ventilation and air conditioning units will be retained to mechanically ventilate the temporary teaching Lab facility. The air handling units (required to provide fresh air) will be located internally within the ground floor ceiling zone, which will also minimises external plant noise.

As the new facility will be used as teaching labs, the water supply will require a small cat 5 booster tank and pumps set, this will be located in the plant area/riser at ground floor that links the two modules. Compressed air bottles to serve the lab spaced will also be located here. This will be fully concealed by the building's artwork facade. The 3 no external condensers located in the small plant area adjacent to the external fire escape staircase will be retained to provide heating and cooling). The external condensers are located behind the vinyl mesh structure, providing an element of noise and visual protection. The Laboratory requires use of nitrogen and argon, the bottles will need to stored in an external cage at ground level at the back of the building adjacent to the small prep room.

Above Ground Drainage

Existing external rainwater pipes will be retained and are concealed behind the building's artwork facade. They run beneath the modular building and discharge rainwater through perforated holes within the pipework beneath the building onto the ground.

3.4 Acoustic Strategy

Refer to Acoustic Report prepared by BDP, submitted as part of this planning application.

3.5 Sustainability Strategy

Given the temporary nature of the building, the method of assessment is currently being discussed with UCL's Environmental Sustainability Team. It is likely that the method will be a Mini Ska Labs Assessment

4 Heritage Context

4.1 Heritage Overview

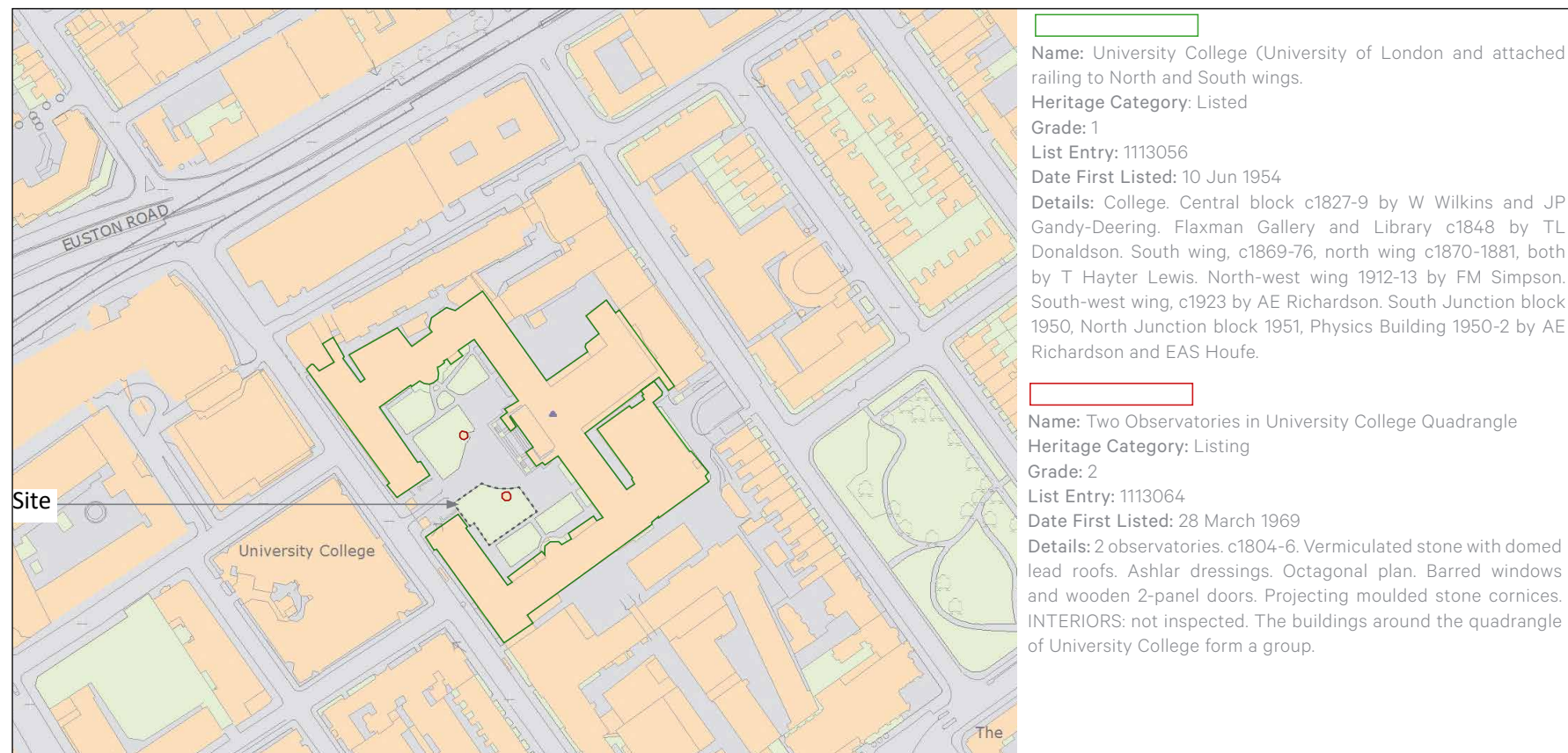
Introduction

The Design & Access Statement for the original Temporary Teaching Facility prepared by Burwell Deakins (Rev P6 dated 11th May 2017) included a Heritage Context section. This outlined the Site and its Designations, identifying and describing the Heritage assets within the local surroundings. A statement of significance was produced and finally the Impact on Listed Buildings and the Conservation Area was established. Extracts from the ‘Heritage Context’ section of this May 2017 DAS are included opposite and over.

The Site and Its Designations

The site of the selected temporary building is in the UCL Main Quad, which is surrounded by the Grade I Listed Wilkins Building, South Wing, Chadwick Building, Pearson Building and the Slade School of Fine Art; a group of stone buildings in Neo-Grecian style enclosing a quadrangle, The Flaxman Gallery and library extending from the rear of the Portico. The decastyle Corinthian pedimented portico, approached by imperial steps sits in front of an enriched copper dome, and is flanked by twenty-two bays with rusticated ground floor pilasters rising from the first floor, carrying entablature.

Alongside the Grade 1 listed buildings, there are two Grade 2 Listed observatories, one of which sits directly adjacent to the proposed development.



Conservation Area Plan from DAS prepared by Burwell Deakins (Rev P6 dated 11th May 2017)

Introduction

This Heritage Context has been prepared in support of planning and listed building consent application submitted to the London Borough of Camden. The applications relate to the installation of a temporary teaching facility within the Main Quad.

The Site and Its Designations

The proposed site for the temporary building is the Main Quad, which is surrounded by the Grade I Listed Wilkins Building, South Wing, Chadwick Building, Pearson Building, and the Slade School of Fine Art; a group of stone buildings in Neo-Grecian style enclosing a quadrangle, the Flaxman Gallery and library extending from the rear of the Portico. The decastyle Corinthian pedimented portico, approached by Imperial steps sits in front of an enriched copper dome, and is flanked by twenty-two bays with rusticated ground floor and pilasters rising from the first floor, carrying an entablature.

Alongside the Grade 1 Listed buildings, there are two Grade 2 Listed observatories, one of which sits directly adjacent to the proposed development.

Statement of Significance

As an institution, UCL occupies a position of central importance in the history of higher education. As the first college to admit students irrespective of their religion or gender, and as the capital's first university, its foundation broke entirely new ground. The subsequent history, whether it be of financial uncertainty, political opposition or of continual expansion of subjects taught and student numbers, is documented in the College's buildings today.

UCL's buildings are both the tools which enable it to fulfil its mission and a masonry record of its past achievements and historical importance. This latter role has been recognised in the various levels of statutory protection which cover the site. These statutory designations define a basic hierarchy of significance across the site, with the Wilkins Building as the Grade-I listed centrepiece.

University College London came into formal existence in 1826 and the plans and elevations submitted for it by William Wilkins were grandiose. The Greek Revival style epitomised the college's secular approach: Pugin described it as 'pagan' and 'in character with the intentions and principles of the institutions'. In other respects the new college was more traditional, being based around a quadrangle. The main feature was the 12 column portico (the first of that size built in the UK), raised upon a rusticated plinth and approached by flights of stairs.

‘Heritage Context’ Section from DAS prepared by Burwell Deakins (Rev P6 dated 11th May 2017)

4 Heritage Context

4.1 Heritage Overview (cont.)

Impact on the Listed Building

Careful consideration was taken with the original Temporary Teaching Facility to minimise the impact on the designated heritage asset of the Wilkins and adjoining buildings, including;

- temporary / modular structure enclosed in a historically sympathetic vinyl mesh with printed graphics that are both educational and compatible with setting
- Principle arboricultural features have been considered.
- the temporary structure allows integrity of root environment and existing soft ground to be re-instated following disassembly.
- the ramped approach and cantilevered structure for mesh wrap are both designed so as not to impact on trees or adjacent Grade II listed observatory.

Impact on the Conservation Area

The Temporary Teaching Facility is located entirely within UCL's Main Quad and as such are not visible in any views within the Bloomsbury Conservation Area and create no change.

Refer the extracts from the 'Heritage Context' Section from DAS prepared by Burwell Deakins (Rev P6 dated 11th May 2017) opposite and over.

Conclusion

Given the proposals constitute no material alteration to the exterior envelope of the Temporary Teaching facility (apart from infilling a set of double doors) it is concluded that the conversion of the teaching facility to lab facility will continue to have minimal impact on the adjacent heritage assets and conservation area.

Alan Baxter and Associates produced a Conservation Strategy in 2004, where they classified the Portico section of the Wilkins Building as 'highly significant'; stating that "the main Wilkins façade (together with the dome behind) is clearly of the highest importance for its architectural interest, its historic interest in the founding of UCL and its group value within the Neo-Grecian style stone buildings enclosing a quadrangle". Other original Wilkins' elements include the stone cantilevered staircases that flank the Flaxman Gallery, as accessed from the Library corridors.

The Wilkins Building and Main Quadrangle represent almost the final flowering of the Greek Revival, before Gothic swept it away. The significance of the other elements included in the listing lies principally in the way in which (over 159 years) UCL continued Wilkins' original concept and classical style, if not his intended architectural detail, in the facades of the main quadrangle and Gower Street. Individually, these buildings would not merit a Grade I listing (or even listing at all).

As an institution, UCL is therefore of high significance. Its buildings – the physical representation of its mission and public identity – possess varying degrees of historic and architectural interest.

The archaeological interest of the site is, by comparison, of less immediately apparent significance than the architectural and historic interest. The site does not lie within an Archaeological Priority Area and none of the recent building projects have revealed any traces of notable archaeology predating the erection of the original College building. The below-ground archaeological potential of the site is therefore considered to be low.

The entire UCL Bloomsbury Campus site also lies within the original Bloomsbury Conservation Area, first designated in 1968 but subsequently extended. It makes a significant contribution to the townscape, particularly with the landmark feature of the Wilkins Building dome. There are views into the main quadrangle from the street but these focus on the Wilkins Portico, with the remaining areas concealed from view from Gower Street.

Impact on the Listed Buildings

The consideration of any potential impact to the significance of the designated heritage asset of the Wilkins and adjoining buildings, within the setting of the Main Quadrangle, has been given the utmost importance. Despite the temporary nature of the proposal, the design has been subjected to many levels of input from various consultants to ensure the proposed building is of the highest quality.

Careful consideration has been given to minimising the impact of the temporary teaching facility through both design and construction methodology:

- The proposal is temporary and formed of a modular structure enclosed by a historically sympathetic vinyl mesh wrap that is both educational and

aesthetically compatible with the historic setting of the Wilkins Building. It is proposed that the design will show details of the surrounding architecture and explain the proportioning and nomenclature of the various architectural elements within the Grade I setting of the site.

- The principal arboricultural features have been considered throughout the design process with regard given to guidance and recommendations within BS 5873, and the proposal retains all existing trees.
- Whilst the structure is temporary, the existing soft ground and integrity of the root environment is retained and can therefore be re-instated following expiry of the temporary teaching facility.
- The ramped access to the west of the modular structure, located within the RPA, is constructed using a 'no-dig' construction method, and the final flooring treatment will be open decking. The temporary installation would therefore maintain the soft ground within the RPA, permeability for moisture and gaseous exchange to the root system whilst minimising compaction through load distribution.
- The printed mesh wrap will be supported by the suspended framework that cantilevers the building and a tubular steel frame and would not impact on any trees or the adjacent Grade II listed observatory.

The proposed building sits independently within the Main Quad, and does not connect with, touch, or adjoin any of the surrounding Grade I listed buildings. The proposals do not include any modifications to or loss of any historic fabric from any of the surrounding listed buildings, and while it will affect the setting of the listed buildings, the design has been sensitively approached to reduce any potential impact on the setting.

Impact on the Conservation Area

The proposed building is located entirely within UCL's Main Quad. The proposals are not visible in any views within the Bloomsbury Conservation Area from outside the Main Quad and create no change to its character.

'Heritage Context' Section from DAS prepared by Burwell Deakins
(Rev P6 dated 11th May 2017)

5 Arboricultural Considerations

5.1 Impact on Trees

An Arboricultural Development Report was undertaken by *tree:fabrik* as part of the previous planning submission for the Main Quad temporary teaching block.

A total of 13 individual trees were assessed including 5 category 'A' trees, 5 category 'C' trees and 3 category 'C' trees. The trees are protected as the site lies within a Conservation Area.

The key design considerations in response to the previous Main Quad temporary teaching block are summarised below:

- All trees were retained
- The proposed structure was located outside the existing tree crown extents.
- The installation sought to minimise the impact on the trees' root environment. The foundation design has therefore been carefully considered to minimise disturbance within the Root Protection Area whilst maintaining moisture and gaseous exchange to the existing soil. Additionally, the modular building elements helped to simplify the building process allowing the structure to be suspended above ground level on a sub-frame supported by pad foundations.
- 'No dig' construction methodology was used in construction of areas within the Root Protection Area, such as the ramped access west and steps to the east of the building.

(See Tree Reference Plan over and 'Impact on Trees' section from DAS by Burwell Deakins opposite)

Proposed Works

As the proposed works do not materially impact upon the structure of the existing temporary building there is not believed to be any additional impact to the adjacent trees



Illustrative 'Arbor Raft' System

4.1 Impact on Trees

An Arboricultural Report has been commissioned by UCL Estates in support of this application.

The report presents an analysis of the potential impact of the proposals on existing trees, based on British Standards 5837 (2012) 'Trees in relation to design, demolition and construction', and precautionary and protection measures to be adopted in order to minimise the impact of development.

The impact assessment is informed by a Tree Survey dated August 2015 undertaken by *treefabrik* in accordance with BS 5837 (2012). The tree survey provided an informed approach to tree protection and foundation design as part of the feasibility and design process.

The purpose of the report is to enable LBC to review the proposals within the context of other material considerations submitted in support of the planning and listed building consent application.

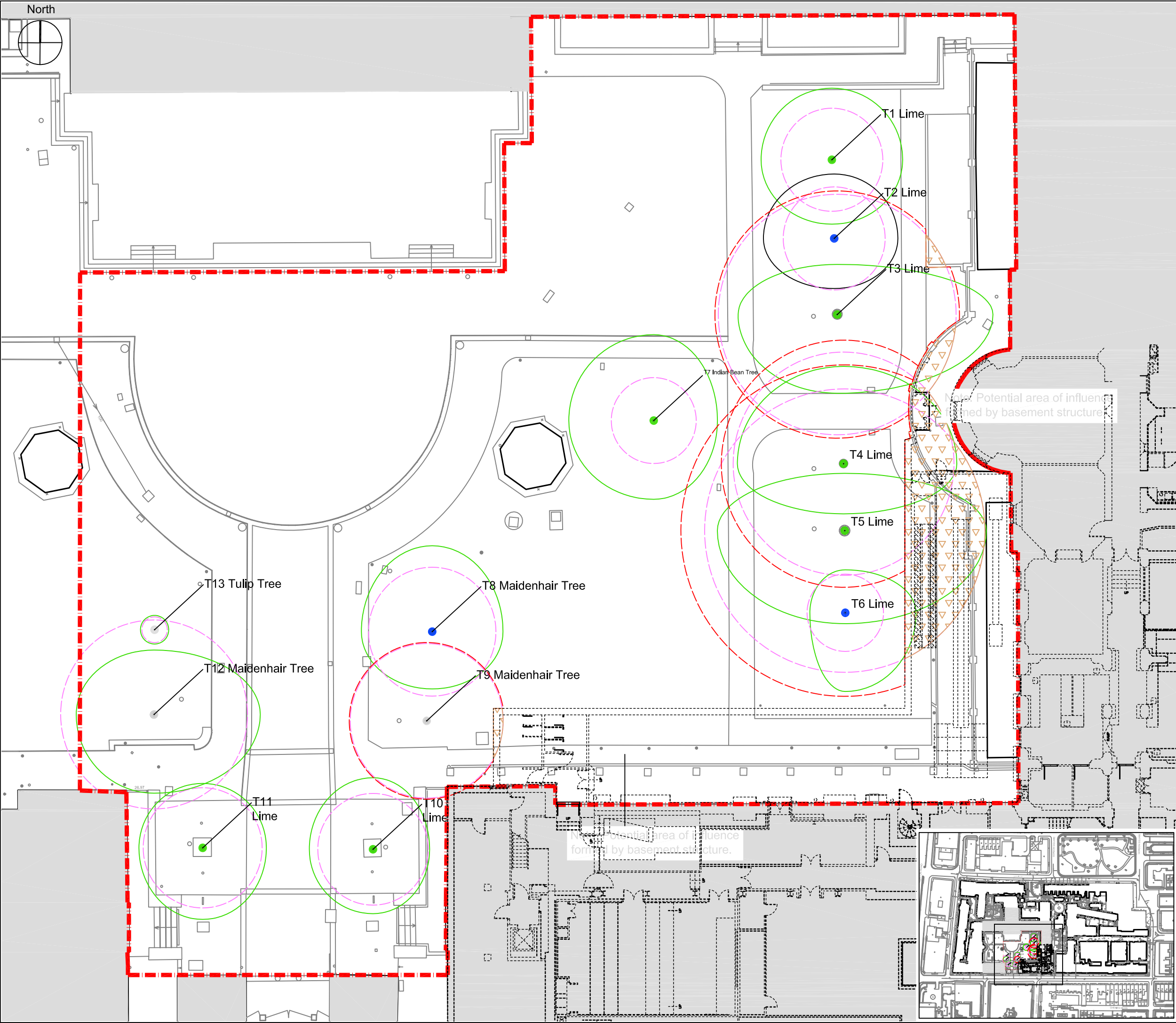
Trees Officer

Following on-site discussions between Nick Bell (trees officer) and Alan Richardson (arboriculturalist) on 02.03.17, the proposal was deemed to have fully considered all possible implications to the existing trees.

The following comments were raised, and responses are given in red:

- To increase the height of the boxed tree protection during construction around the two Ginkgo to take account of the decking.
- **Action: an updated specification is included within the arboricultural report.**
- A preference for the tree works to be included within the application rather than submitted as a separate tree works application was stated.
- **Action: full details and specification included within the updated arboricultural report.**
- Clarification on the extent of crown reduction was asked to be provided.
- **Action: a photo illustrating the approximate reduction points is included within tree works plan within the arboricultural report.**
- A preference to see that rainwater is distributed under the structure was specified.
- **Rainwater downpipes to run under the building and discharge through perforated pipes to ensure even distribution.**

'Impact on Trees' Section from DAS prepared by Burwell Deakins
(Rev P6 dated 11th May 2017)



NOTES
This drawing is the property of tree: fabrik Ltd. It must not be copied or reproduced without written consent. This is a basic data collection exercise for the sole use of identifying site constraints in context of the planning process and a record of the trees condition at the time of surveying. This is not a vegetation assessment for NHBC guidance or a higher level inspection (full hazard or risk assessment) and no guarantee, either expressed or implied can therefore be given with regards to identification, safety, stability or internal condition.

General
This illustrative plan is intended to inform preliminary site layout & design and should be read in conjunction with the Tree Survey Schedule. Detailed assessment and site measurement may be required prior to final design. The assessment was carried out in accordance with the guidance and recommendations of British Standards 5837: (2012) 'Trees in relation to design, demolition and construction' and good arboricultural practice. Trees identified within this assessment were visually inspected from ground level by a person qualified and experienced in arboriculture. The tree's common name and its dimensions are recorded within the tree survey schedule together with their age, physiological, structural condition and a category code. All observations are confined to that which was visible from the site and areas of public access.

Boundary
 Indicative site boundary

Tree Survey

Tree No.	Common name
1	Ash

Statutory Designations (trees)
It is understood from enquiries with Camden Council that the site lies within the Bloomsbury Conservation Area. The status of trees may change and it is recommended that the Council be contacted prior to carrying out any works and the current statutory designation confirmed.

Quality & value of existing tree stock
The quality and value of each tree or group of trees assessed has been categorised in accordance with British Standards 5837 (2012) 'Trees in relation to construction'. This categorisation method allows informed decisions to be made concerning which trees should be removed or retained should development occur.

- | | |
|--|--|
| U Category tree
Trees in such a condition that they cannot realistically be retained as living trees in context of the current land use for longer than 10 years. | B Category tree
Trees of moderate quality and value |
| A Category tree
Trees of high quality and value | C Category tree
Trees of low quality and value |

Above and Below Ground Constraints
In addition to the tree's quality and condition, consideration needs to be given to the above ground constraints (crown spread) and the below ground constraints (root protection area) the trees pose by virtue of their size and position.

- | | |
|--|--|
| Crown spread
(extent of current crown) | Preliminary root protection area
Illustrated as an area equivalent to a circle. The root protection area (RPA) is a design tool indicating the area surrounding a tree that contains sufficient roots and rooting volume to maintain the trees viability, and where the protection of the tree roots and soil structure is treated as a priority. |
| Preliminary root protection area (restricted root growth)
Area within preliminary RPA where root morphology is likely to have been influenced by existing site features thereby forming an area of restrictive root growth. | Root protection area (adjusted)
Preliminary RPA adjusted to reflect potential influence of restrictive root growth resulting in an asymmetrical rooting pattern and maintaining an RPA of equivalent area (m ²) in accordance with recommendations and guidance within BS5837 (2012) |

tree: fabrik

Lenten House
16 Lenten Street
Alton, Hampshire
GU34 1HG
T : 01420 593250
F : 01420 544243
E : alan@treefabrik.com

Project
UCL SOUTH QUAD TEACHING FACILITY
LONDON

Drawing
TREE SURVEY REFERENCE PLAN

Scale	Date	Drawn
1:250	DEC '16	AR
Drawing No.	Revision	
tf 1052/TS/100	A	

<input type="checkbox"/> Preliminary	<input checked="" type="checkbox"/> Issued for Design/Information
<input type="checkbox"/> Issued for Planning Approval	<input type="checkbox"/> Issued for Tender
<input type="checkbox"/> Issued for Construction	<input type="checkbox"/> As Built

Drawing sheet size - A3

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