2.3 Neigbouring Landmark Buildings

Outside the Site's boundary and within the identified setting of the Site are numerous heritage assets of varying importance. It is considered that although a number of heritage assets are located within the vicinity of the Site, these have been assessed as being sufficiently well concealed in term of visual, traffic, emissions and noise impacts to ensure that they are unlikely to experience any significant effects as a result of the development of the Site. Accordingly they will not be discussed in the remainder of this report.
These include:

1 - Numbers 55 - 59 and attached railings, Gordon Square (Grade II listed);

2 - The Cloisters, Nos. 1-5 Gordon Square and attached stone wall (Grade II listed). 33 & 35 Torrington Place (Grade II listed);

3 - Church of Christ the King to the centre and the Quaker International Centre to the left (Grade II listed);

4 - Philips Building, School of Oriental and African Studies, Thornhaugh Street, Camden (Grade II* listed);

5 - 33 & 35 Torrington Place (Grade II listed);

6 - Numbers 47 - 53 Tavistock Square and attached railings to areas and wall to number 45 Tavistock Square and 47 - 53 Gordon Square and screen wall linking number 53 Gordon Square to 45 Gordon Square (Grade II listed); and

7 - Numbers 10-18 and attached railings and lampholder, Woburn Square (Grade II listed);

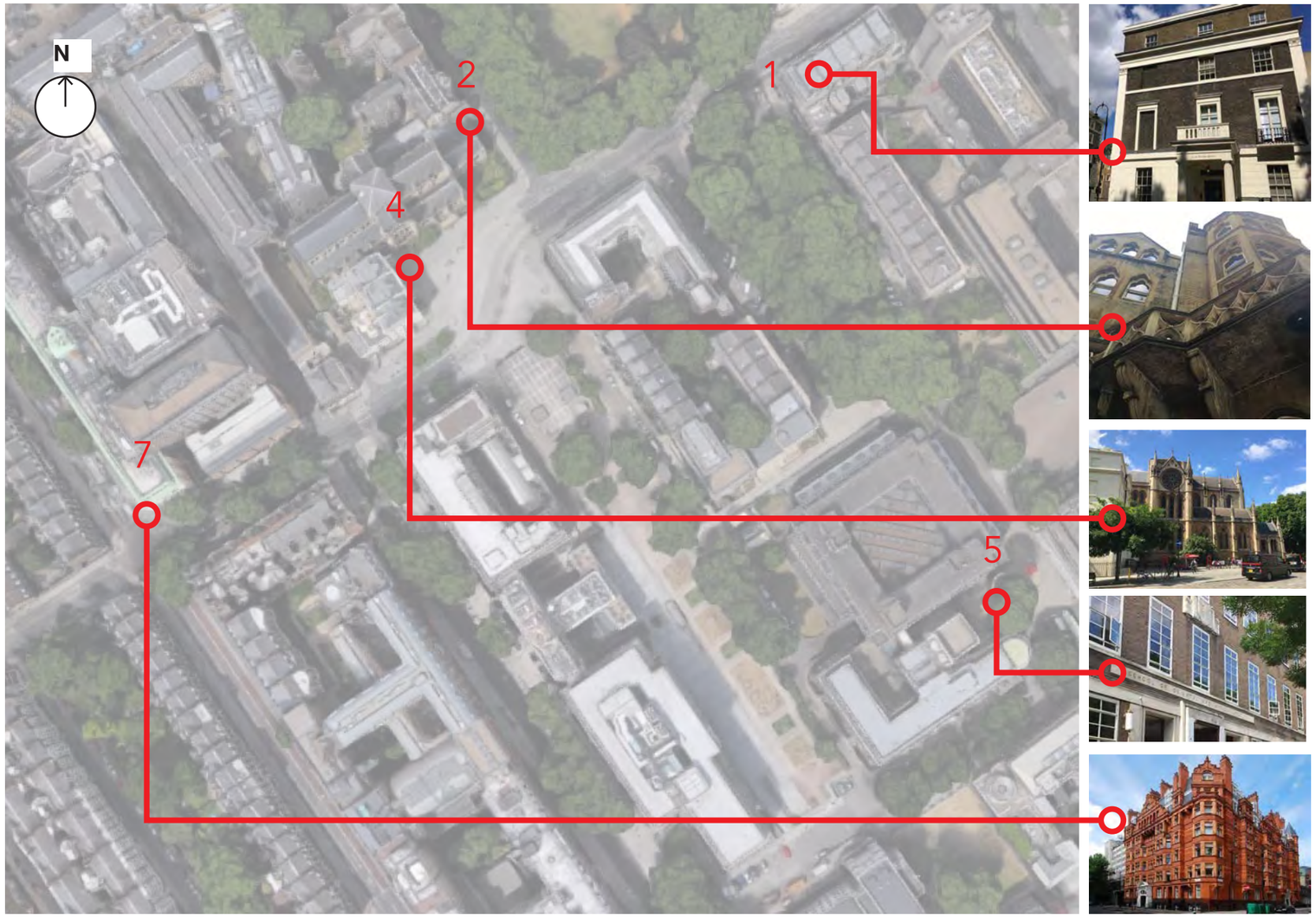


Figure 2.36. Arial View (image from google)

2.4 Land Uses

The site comprises and is adjacent to Grade II Listed Torrington Square terrace houses. 32 Torrington Square has a Class D1 (Education/Research) use.

The buildings within the surrounding area comprise a mixture of commercial and educational uses.

N

Figure 2.37. Birkbeck Malet Street entrance

Figure 2.38. University College London Engineering Faculty

Figure 2.39. Book shop and coffe place on Torrington Place

Figure 2.40. School of Oriental and African Studies

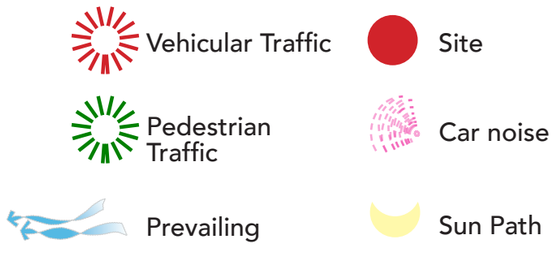
2.5 Constraints and Opportunitie

Site Constraints

- Existing Grade II Listed building;
- Existing services infrastructure (i.e. Water pipes, electric services);
- Existing pedestrian access to be retained;
- Existing fire escape routes to be retained;
- Neighbour building foundations;
- Underpinning of existing foundations at 32 Torrington Square;
- Conservation area;
- Required enabling works.

Site Opportunities

- Connectivity with 32 Torrington Square and general site permeability;
- Refurbishment to existing fabric;
- Character reinstatement;
- Enhancement of street scape and public realm;
- Improve services access;
- Improve fire escape strategy.



2.41. Arial View (image from google)

3.0 ANALYSIS OF EXISTING BUILDINGS

3.0 ANALYSIS OF EXISTING BUILDING

3.1 No. 32 Torrington Square and Vacant Site

The site is in Torrington Square, Bloomsbury, London and is owned by the University of London. Originally part of a run of terrace houses, 32 Torrington Square is now the last building in a row of terraced houses, since no.s 33 and 34 Torrington Square were demolished to allow the construction of the Warburg Institute. 32 Torrington Square was listed Grade II in 1969 within the Bloomsbury Conservation Area, which was first designated in 1968 by the London Borough of Camden with the aim of preserving elements of the Georgian townscape.

The listed buildings are of architectural interest as a terraced group of six London stock brick built townhouses, which were developed for the middle classes in the early 19th century in the expanding residential area of Bloomsbury. As part of the wider contemporary townscape of streets and squares, these former houses illustrate the large scale and formal approach in this period to the planning and design of a residential scheme.

The buildings are also of interest as an example of the then popular Neo-Classical architectural style, as displayed in the design and proportions of its principal street elevations and decorative features, applied to this building type.

As found today, the listed building at 32 Torrington Square in no longer in the use for which it was originally built. It is now vacant, but previously accommodated administrative and research space for the University. The townhouse has been little altered externally but has been altered internally over time.

The building was occupied until early 2015 by the Toddler Lab as offices and research. Due to several structural issues (mainly damp and the failure of the front facade) the building was vacated, scaffolding was put up (July 2015) and a planning application was submitted proposing repair works to the front facade of the building at 32 Torrington Square, comprising partial rebuild of the upper parts of the existing facade, where the outer brickwork has delaminated from the structure inside the building. "The current condition presents an unacceptable risk of the front facade collapsing should the existing defect be allowed to propagate further".

No. 32 is two bays in width and arranged over lower ground to third floors. It is built from buff London stock brick in Flemish bond and stucco rendered and painted (white) at lower and upper ground floor level and cast iron fence and balcony balustrade.The side elevation contains full height stepped brick buttresses dated from 1953-58 providing lateral support to the former party wall between No. 33 (since demolished) and No. 32 Torrington Square. These buttresses were erected following demolition of Nos. 33-34 Torrington Square to allow for the construction of the Warburg Institute.

The main rear elevation of the terrace is marginally more modest in its design and use of materials relative to the principal street frontage. This reflects the traditional hierarchy between the public frontages and the less important rear elevations of such townhouses at the time of its construction. There is a general rhythm to the rear elevation's fenestration pattern, however again various later alterations and additions, such as the modern replacement of windows, adaptation of openings and the closet wing at first floor level have undermined the former uniformity

Figure 3.1. No.32 and adjacent terraces front facade

Internally there is evidence of various and successive later alterations, including the intervention of modern partitions, openings, services and redecoration throughout the building. However, as found today, the historic plan form of the building remains largely legible on all levels. A moderate-high number of elements of the original or historic fabric also remain in many of the rooms and spaces on each of the floor levels which are discussed in detail within the Heritage Statement.

*Extracted from Turley's "Heritage Statement - December 2016"

There is a recognized need to refurbish and upgrade the existing building, with improved access and better facilities.

Figure 3.2. No.32 and adjacent terraces back facade

Figure 3.3. Existing ramp access

3.2 The Warburg Institute

The neighbouring Warburg Institute was built in 1957. In front of the building is a disused Heating Chamber, to which there is an access gate from the lightwell in front of 32 Torrington Square.

Archive drawings suggest that neighbouring properties at 33 and 34 Torrington Square were demolished in the early 1950s to accommodate the Warburg Institute building. Archive drawings can be found in the Heritage Statement by Turley Associates.

3.3 University Buildings

The site sits within the 12 hectares University of London Campus.

The ten largest colleges of the University are UCL, King's College London, Queen Mary, City, Birkbeck, the London School of Economics and Political Science, Royal Holloway, Goldsmiths, SOAS, and St George's.

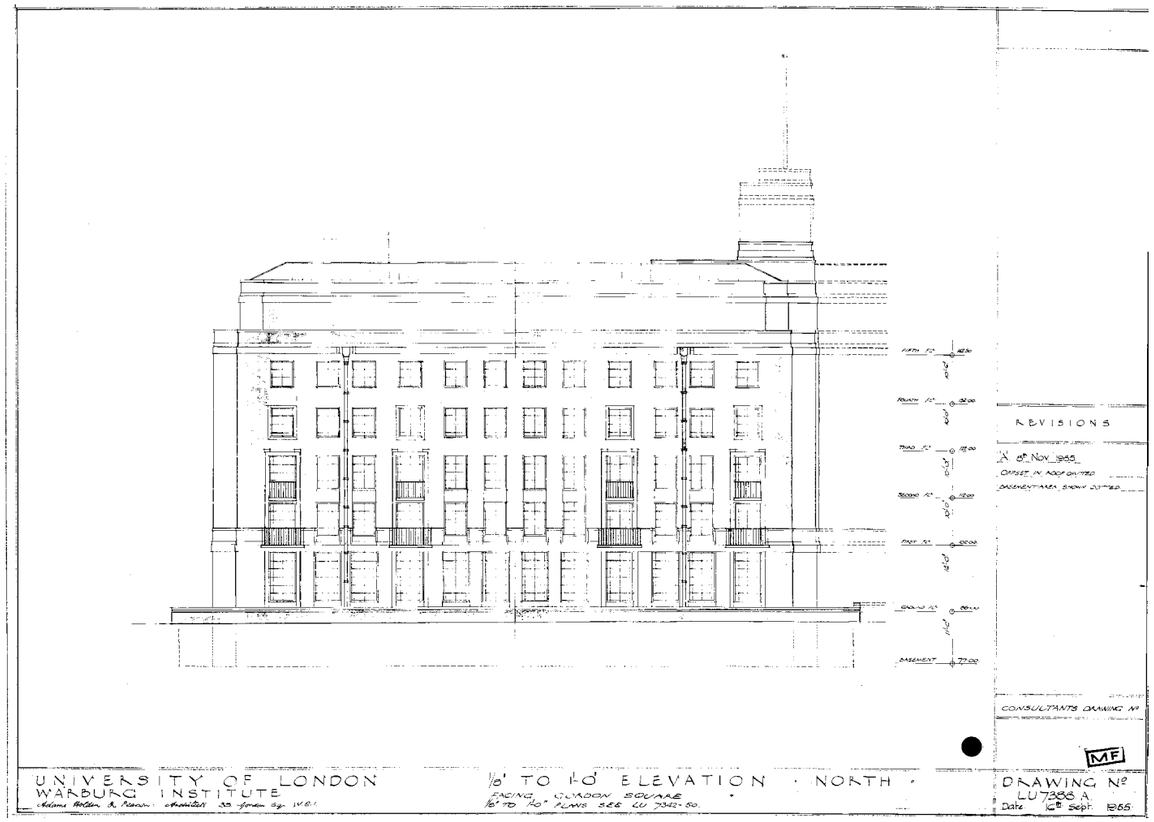


Figure 3.7. The Warbur Institute Elevation Drawing 1955

Figure 3.4. The Warbur Institute

Figure 3.5. Birkbeck Malet Street entrance

Figure 3.6. Henry Wellcome Building and School of Oriental and African Studies

4.0 PROPOSAL

4.0 PROPOSAL

4.1 General Description

The ToddlerLab will undertake ground-breaking research in diagnosis of autism in children at an age much younger than previously possible.

It is a project of two halves:

Firstly, it is proposed to build a new annex building in the empty site between the Warburg Institute and the currently vacant 32 Torrington Square. This will contain the specialist highly bespoke laboratory and testing accommodation and will be the main entrance and visitor reception, with level access from the street. We propose high quality contemporary architecture, which will be in keeping with the tone and proportion of the Georgian terrace as well as the wider campus context.

Secondly, it is proposed that the currently vacant 32 Torrington Square be restored and refurbished to be used primarily for academic staff. This is an exercise in sensitive restoration as well as minimal adaptation for its new use. We wish to de-clutter the interior and restore the original room configuration. The structure requires upgrading, with floor strengthening and essential facade restoration works. Combining both the new architectural infill and the restoration of the existing Georgian townhouse will create a new research facility which will be of huge benefit to countless children and families throughout the world, whilst also creating a positive addition to the urban fabric of Torrington Square.

4.2 Design Principles

The ambition has been to create a dynamic new facility which is founded on good design principles, inviting, operationally efficient effective and environmentally friendly. Potential future expansion of the facility has been an important consideration in the development.

There was also a desire to create a more physically independent new annex to ensure that the buildings can be separated in the future if required.

The overall aim has been to develop a design with certain key priorities:

- Modern and contemporary architectural treatment of the annex;
- Design which is contextual and complementary to the Georgian terrace;
- Use of high quality materials;
- Maintains the legibility of the Grade II listed 32 Torrington Square;
- Single clear visitor entrance to the building;
- Provides clear identity for the main entrance and other constituent parts to assist way-finding;
- Easy to navigate inside;
- Connectivity between the existing and proposed new annex;
- Create an inspirational and inviting environment;
- Internally, clear operational zones;
- Maximises the potential for accommodation over the different storeys;
- Flexible spaces;
- Natural daylight;
- Accessibility;
- Provide inclusive access and toilets facilities;
- Sustainable building; and
- Easy maintenance.

4.3 Project Development

The proposed development has been the subject of detailed design consideration in conjunction with the London Borough of Camden, the consultant team and the end users of the development.

A preliminary study were carried out in the support of the initial agreement and identifies site of no.32 Torrington Square and the vacant land adjacent to it as the preferred location for the proposed ToddlerLab. The option appraisals where recorded in reports and statements shared with the client and the planning Authorities.

The strategy for the development of the project layout and Preferred Elevation Option was agreed during a client design meeting and the design progressed on that basis. Subsequent meetings helped to refine the proposals that were then submitted to Camden Council in order to obtain pre-application advise.

Since, the spatial distribution, massing and visual appearance of the building and elevation treatment has evolved as a consequence of multiple technical challenges and to respond to comments from Planners, Conservation Officer and Consultants.

On the 14th of March 2017 the 1st Pre-application meeting took place on site. The proposed scheme was explained to Heritage and Planning Officers and the faced option discussed. Further to this meeting and on the light of the received feedback the proposed scheme was revised.

List of Changes further to 1st Pre-application meeting held on the 14th March 2017:

- Location of main stair to annex changed to allow internal circulation to be rationalised;
- Glass infill between existing building and annex omitted;
- Basement infill to no.32 back garden omitted;
- Fourth floor omitted. Recessed planting area on annex roof area;
- Front facade changed from glass system to brick façade;
- Defined use separation between no.32 and annex keeping research on new annex only and offices on no.32;
- Annex back elevation changed from curtain walling system and brick to brick and windows;
- Cycle storage capacity increased.

A revised proposal was presented and discussed on the 2nd Pre-application meeting held in Camden Council offices on the 17th of May 2017.

The design was developed on principles of stakeholder engagement and consultation in tandem with the specialist technical advice provided by the various consultants.

4.4 Proposed Scheme

4.4.1 Works to the Existing Building

32 Torrington is a Grade II listed building, and will be refurbished and restored.

The existing building has inadequate floor joists, insufficient horizontal ties and inadequate acoustic separation and insulation to comply with current building regulations. Therefore, structural reinforcement and acoustic insulation will be added whilst retaining the historic fabric.

A low impact approach to the repairs and conservation of the existing building has been taken and all repairs are to match the existing.

Further information on the existing building can be found in the Heritage Statement, which provides historic context and impact assessment and the Stage 1 Civil and Structural Engineering Report by Webb Yates.

Strip-out works are to be carried out carefully to minimize any detrimental effect on the historic fabric. The majority of the strip-out works are associated with the removal of the existing redundant building services. All of these are later additions to the original building.

Existing floor finishes such as carpets, vinyl and hardboard overlays are to be stripped out, back to original floors.

Structural reinforcement to the existing structure will take place.

The produced Heritage Statement has informed the design evolution and specifies those areas of significance to the building.

All cornices, skirtings, stair metal balustrades and treads, architraves, window shutters and sash windows should be retained and made good.

All **floor joists** will be retained and, as further explained within the Structural Engineer's report, reinforcement to existing floors will be added in between the existing structural elements. All ceiling cornices are to remain in situ and remain exposed to view. All historic skirting boards are to remain. Basement metal balustrade to internal staircase and stairs (treads and risers) to remain - modern cladding to sides can be removed. Architraves to doors and windows to remain. All shutter and shutterboxes to remain. All sash windows to remain. External staircase will be removed as being modern and of poor architectural value which lacks historic relevance.

- **Brickwork** repairs requiring replacement bricks will be like-for-like reclaimed buff London stock bricks. Lime mortar pointing to be used. Where structural problems exist discussion with our Heritage Consultant are to take place to establish the best soluton as there may be ways of retaining the bricks in situ and correcting the structural deficiencies behind.
- All existing **historic doors** to be retained. Where an historic doorway is to be lost and where this doorway includes an historic door, the door can be reused elsewhere within the listed building.
- Where **original walls** are to be reinstated we should use timber lathes and lime plaster will be used. Breathable paints will be used. Where modern walls are proposed these will be either be stud partitions or demountable glass partitions (not full height to ceiling ideally) as relevant.

A full set of Demolition and Proposed drawings are submitted along with this DAS which provide more information of the extent of works to 32 Torrington Square.

Figure 4.1. Balustrade to basement stair to be infilled with glass

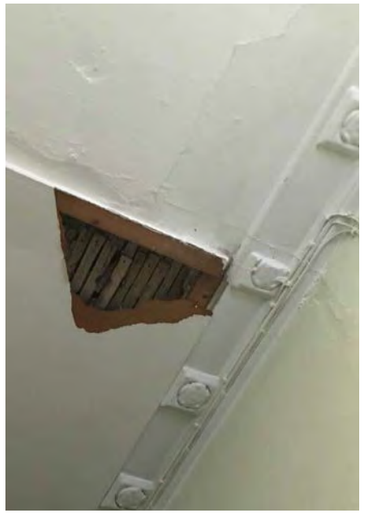


Figure 4.2. Ceiling plaster and moldings to be made good as necessary as per Heritage consultant recommendations

4.4.2 Annex

Both the existing townhouse and the annex are to be linked at all levels through the gable wall. This will allow levelled access to the existing building and improve the fire escape situation.

The infill development is proposed over 5 floors (Basement to Third). The gap between 32 Torrington Square and The Warburg Institute is quite narrow and therefore space is at a premium. The external appearance of the building to the front will be a well considered brick facade that takes its proportions from the Georgian terrace buildings adjacent keeping the mass and height of 32 Torrington Square.

The rear will use matching brick to the terrace houses and glass. The annex is extended to the same line as two-storey closet wing. The third floor of the annex is set back to avoid the reducing the amount of daylight to a first floor window of the Warburg Institute on the opposite side of the rear courtyard.

All walls, floors and ceilings will be highly acoustically rated, including the windows and doors accommodated within them to control external noise into the research areas.

The screen to the plant at roof level is recessed from both front and back elevations and is approximately the same height as the apex of the existing roof terrace.

The building will need to maintain a ramped access to the rear courtyard of The Warburg Institute.

4.4.3 Massing and Design Layout

Massing

The massing of the building evolved naturally out of a careful analysis of the functional requirements against opportunities and constraints of the site and to the context of the urban grain.

The design generally responds to the form, scale and proportion of the Georgian terrace.

Layout

Over the following pages we set out the design layout for each floor.

Basement

32 Torrington Square:

At this level at the existing no.32 the back garden area is retained and landscaped.

The existing structure will be underpinned in this area; the new annex will support the existing building.

The Annex:

The stair and lift have been positioned in such a manner to allow for a more rational distribution of the research and ancillary facilities.

Access to the lift in the new annex will be done through the existing lateral wall.

Electrically and magnetic shielded facilities (i.e. Nap research room, CAVE and EEG rooms) are located in the basement given their specific no-light requirements.

Ground Floor

32 Torrington Square:

The entrance to 32 Torrington Square will be used by academics only and provides access to shared office spaces. Toilet facilities and cleaners room will be located in the existing closet wing.

From the closet wing, stairs will allow access to the existing external space.

The Annex:

Access to the lift within the new annex will be via one of the offices through the existing lateral wall.

The annex entrance is to be used by the visitors and provides access to all levels via a new stair and lift.

At this level, the end of terrace brick will be exposed creating a warm and welcoming feeling to the reception area with clear open views to the feature stair.

KEY

- Major Pedestrian Entrance Point
- Academics Entrance Point
- Pedestrian Entrance Point
- Building Servicing
- New Built Area
- Major routes
- Staff Cycle Store

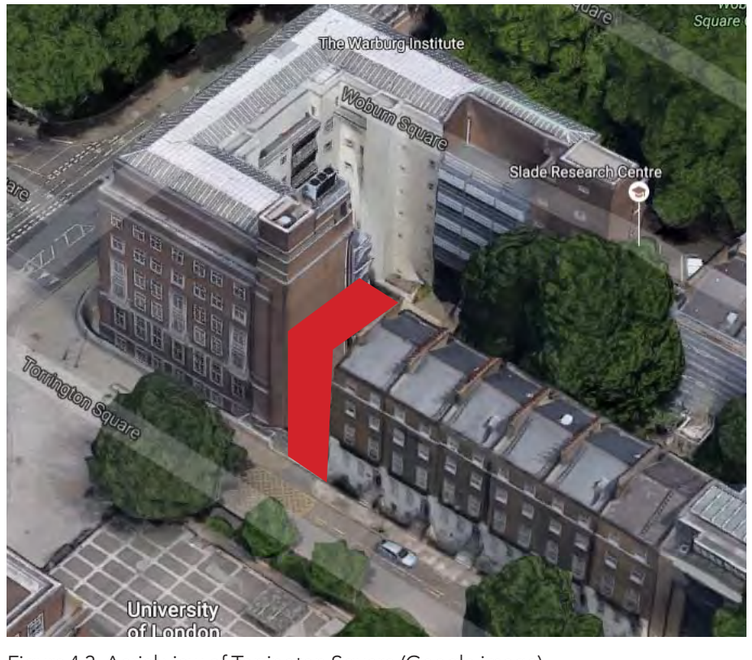


Figure 4.3. Aerial view of Torrington Square (Google image)

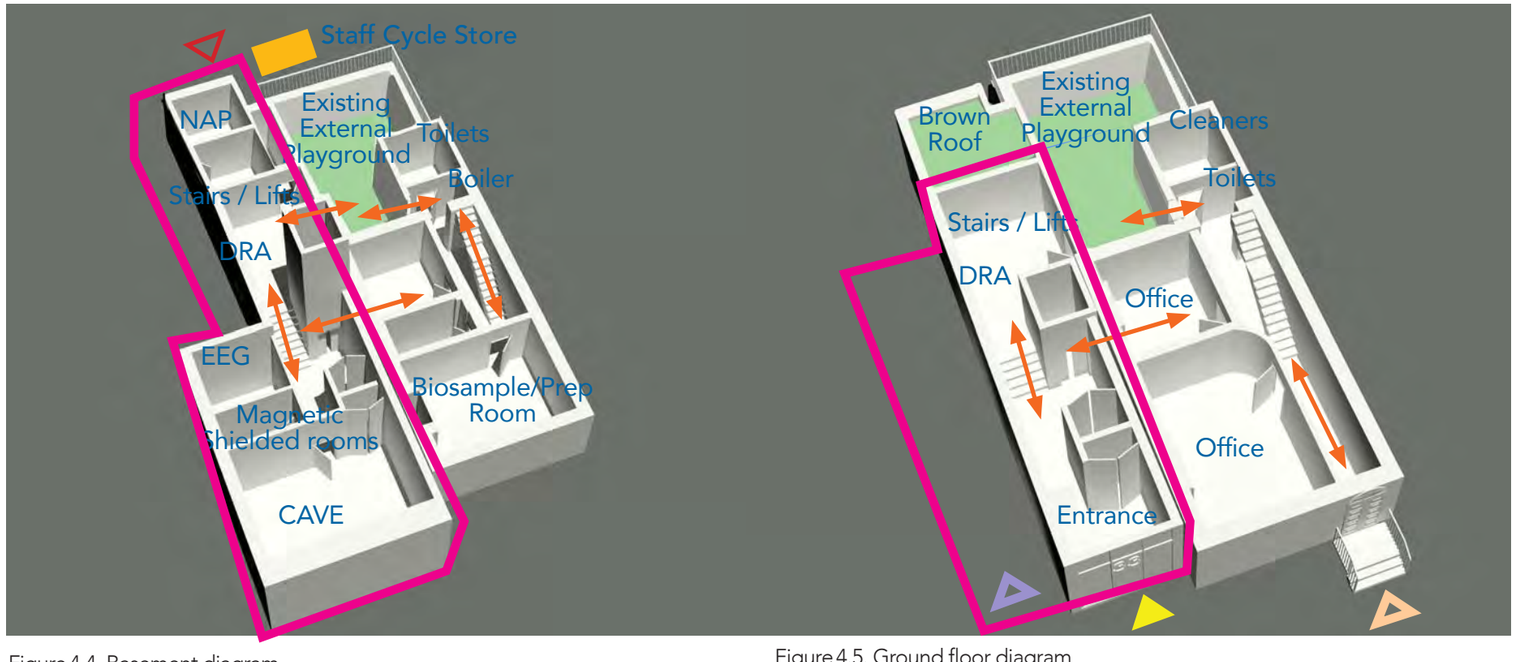


Figure 4.4. Basement diagram.

Figure 4.5. Ground floor diagram

1st Floor

32 Torrington Square:

A Seminar room is to be provided at this level on the existing front room where the historical features will be reinstated to create a meeting space.

Adjacent corridor needs to be maintained as part of the fire strategy. The staff kitchenette will be connecting to the corridor and seminar room.

As per the ground floor, toilet facilities and small storage will be located in the existing closet wing.

The Annex:

Home Environment research room control room and waiting room are located at this level on the new built annex.

Part M compliant toilet facility with shower is housed on this floor.

2nd Floor

32 Torrington Square:

Two academics shared office and one individual office space is provided at this level on the existing building.

Annex:

Early Intervention research room and EEG room with associated storage, control room and waiting room.

3rd Floor

32 Torrington Square:

Two academic shared offices and two individual office spaces are provided.

The Annex:

A Pre-School research room and associated storage, control room, toilet facility and waiting room are located at this level.

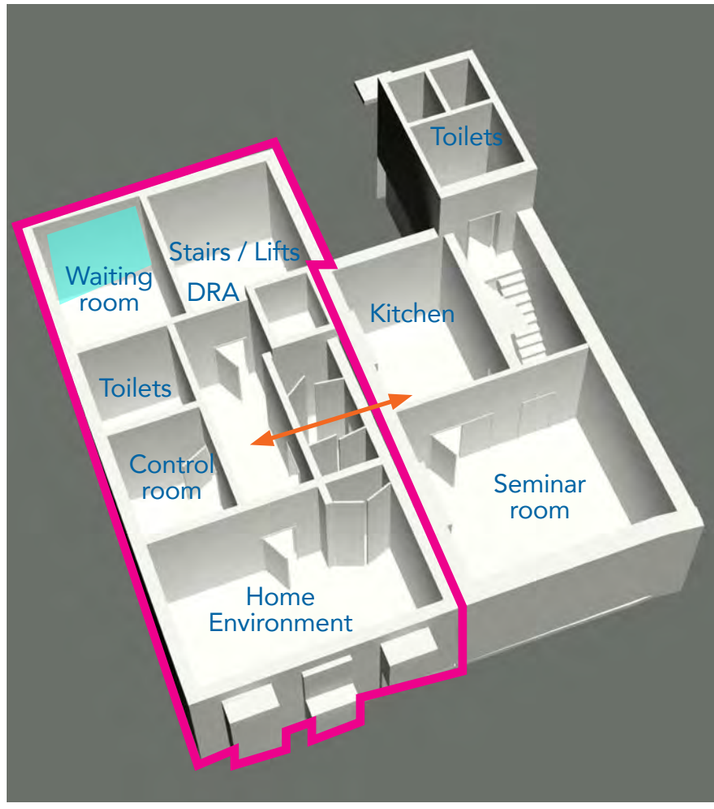


Figure 4.5. First floor diagram

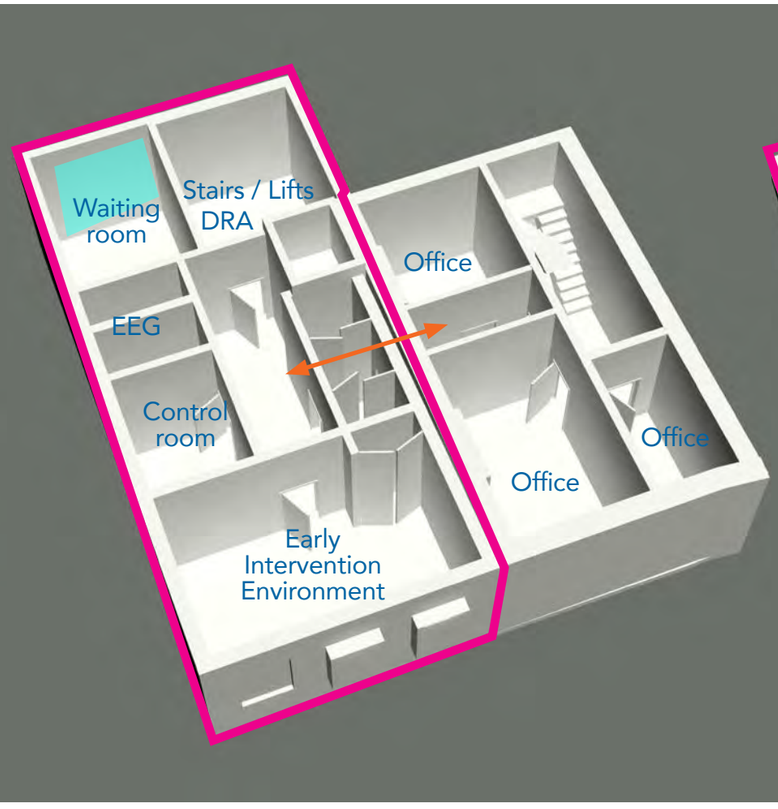


Figure 4.6. Second floor diagram

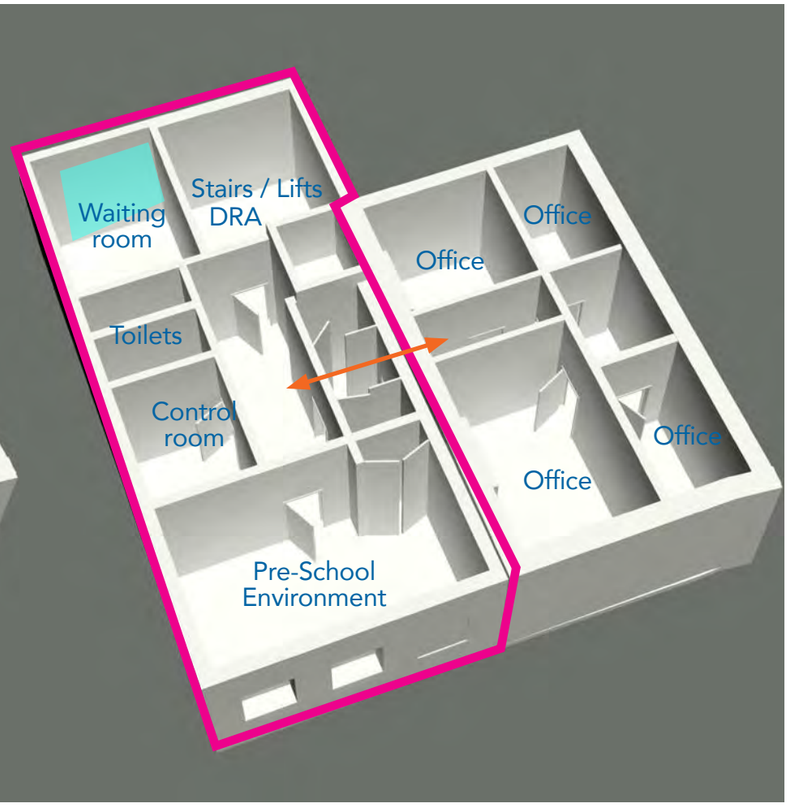


Figure 4.7. Third floor diagram

4.4.4 Materials

The materiality of the building's facades is a key part of the design, and its successful integration with the listed terrace.

The design generally responds to the materiality of the adjoining terrace, with contemporary detailing, but the whole length of the terrace, as it has evolved, informs the annex facade design.

The intention is for an architectural expression which marries the Georgian terrace with the twentieth century design of the Warburg Institute, rather than a bold statement to distinguish the new annex.

The design references the Warburg Institute building by recessing the bricks in the facade between the 1st & 2nd floors and with the vertical runs of individual recessed bricks in between the 1st floor windows.

The design also references the Clore Building at the South end of the terrace with the same flush mortar / stretcher bond brick and the dark window frames & metal panels.

The **new annex** will be faced with yellow London stock bricks with windows, railings and coping in steel, powder coated in Iron Grey RAL 7011. Recessed brick detailing at first floor level and a glazed double brick course with text at second storey provide detail and interest.

The ground floor façade and entrance provide a contrast and contemporary style, with a metal façade system, metal planters to match and steel shopfront window system. The ToddlerLab name is laser cut vertically into the façade with opaque glass backing.

The design will be developed to be robust and practical, with the material selection and detailing strategy specifying a sustainable range of materials that are easy to clean and are hard wearing and durable so they will maintain the buildings appearance over the long term. It achieves this by proposing a restrained palette of materials in keeping with the local heritage context.

Life-cycle costs are also considered in the selection of the most suitable materials to meet the Birkbeck building brief. All the new brickwork will be sourced from a local sustainable supplier. In order to source the right materials it will be necessary in the next stages to research the possibilities in the area local to the development. It is also important to communicate clearly with any contractors in order to ensure that they use locally sustainable materials.

A shadow gap of one brick depth and width between 32 Torrington Square and the new annex will identify the new build as a complement to the existing.

Once samples of brick, window frames and metal elements are acquired these will be presented to the planners for approval.

Figure 4.8. Proposed Front facade

1

Figure 4.9. Tarditional London yellow brick

2

Figure 4.10. Glazed double course red brick feature band

4

Figure 4.11. RAL 7011 metal frames and flashings

3

Figure 4.12. Metal Facade system.

5

Figure 4.13. Iron grey powder coated steel finish frame

6

Figure 4.14. Brick detail to front facade

7

Figure 4.15. Velux Twin vertical / pitched roof window system to back elevation

Figure 4.16. Proposed Back facade

4.4.5 Appearance and Visual Impact

We appreciate the need to be contextual responding to the terrace, in materiality and in proportion. We believe it needs to be contextual but should be contemporary in design and should not be a pastiche of the Georgian terrace.

The annex site is wider than the adjacent terraced houses. It is also an infill, linking the terrace with the Warburg Institute. It must resolve how the Warburg Institute is set back in plan from the terrace, primarily at ground floor level.

We believe it is critical that the Annex is a piece of architecture with its own integrity. It is a new public face of Birkbeck for all the families visiting the Toddler Lab and it is where the main functions of the Toddler Lab are undertaken.

The proposed development represents a major investment by Birkbeck and their charitable donors. It will become a physical statement of the world class pioneering research carried out at the Toddler Lab.

We have developed an architectural solution which we believe responds to the above challenges.

The front façade aligns with the existing terrace house making the new annex in keeping with the existing terraces street articulation.

Given the approach / access and the tree coverage in front of the terrace, the building will mostly be viewed at an oblique angle, whereby the general rhythm and materiality of the building will be in keeping with the terrace.

We like the balance of subtlety and confidence in this solution.

Front Elevation

Figure 4.17. Front Elevation from Torrington Square frontal view

Front Elevation

Figure 4.18. Front Elevation from Torrington Square north view

Front Elevation

Figure 4.19. Front Elevation from Torrington Square east view

4.4.6 Site Access

Access to the site during construction will require a detailed construction management plan. The roads directly around Torrington Square are not ideally suited for HGV use so adequate planning will be necessary to avoid conflicts.

An outline Construction Management Plan was produced and will be further developed once a Contractor is appointed.

The new annex is designed to create a new sense of legibility with a new entrance, and level access provided from the street. A new core is provided to the rear of the Annex entrance, linking with no.32 Torrington Square via the openings on the gable wall.

In terms of future use, the site is in an area which has the highest accessibility level by public transport (PTAL of 6b), with very high number of bus services, London Underground and National Rail services. The site is served by minimum of 120 buses per hour per direction, seven LULs, Overground Lanes and numerous train lanes.

The area surrounding the site has a high quality highway network, that includes: TROs, resident permit holder spaces, disabled spaces, loading bays, pay & display parking spaces and car club spaces. On-street parking spaces have provision of disabled spaces and pay & display spaces, that can also be used by disabled users free of charge.

Figure 4.20. Site Existing Entrance

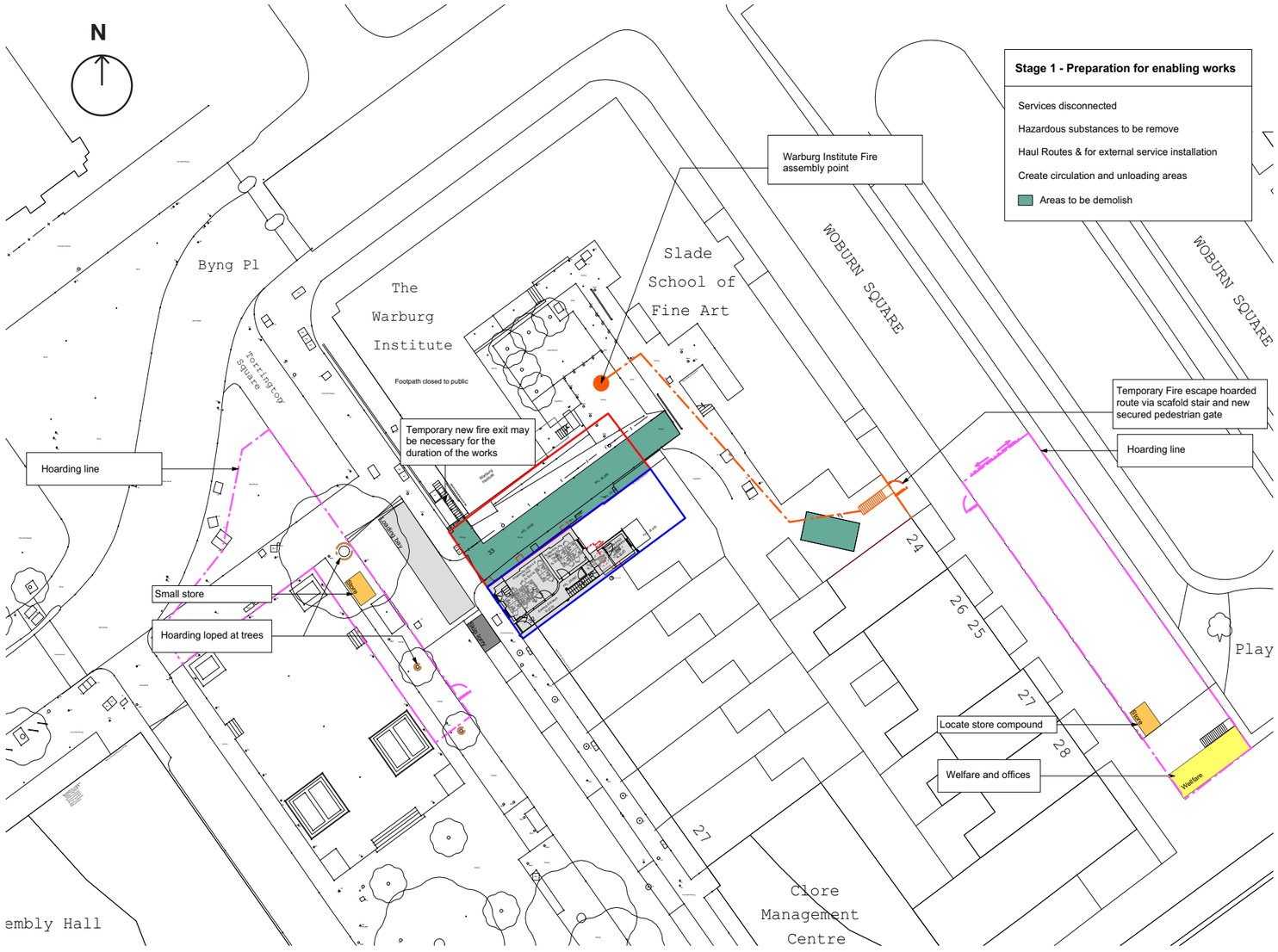


Figure 4.21. Construction compound plan

4.4.7 Servicing Strategy and Contractors Access

Servicing

Almost all deliveries go to Birkbeck's Malet street post room and are then distributed using a hand trolley. Twice a year approximately a large item of equipment might get delivered via Torrington Square, near the pavement to the site entrance.

The Transport Statement and Travel Plan for the development recommends that the following measures should be implemented to limit the impact of servicing activity on the local highway network:

i. The development will comply with the Birkbeck, University-wide strategy to minimise and consolidate deliveries and servicing as far as possible;

ii. Management of supply chain with choice of suppliers based on their participation in the Freight Operators Recognition Scheme (FORS);

iii. Choice of suppliers based on use of green fleets complying with the standards set by London Emissions Zones;

iv. Issue of information regarding the servicing strategy for the development to all supplies; and

v. Schedule times and management of loading and unloading activities during the occasional deliveries by large vehicles.

Contractors Works and Access

Given that the existing vehicular ramp will be removed, access to the site will be limited and the location of site office and material storage must to be carefully considered by the contractor.

Construction Management Plan to be produced by the contractor should provide options that will have to be negotiated with the relevant authorities.

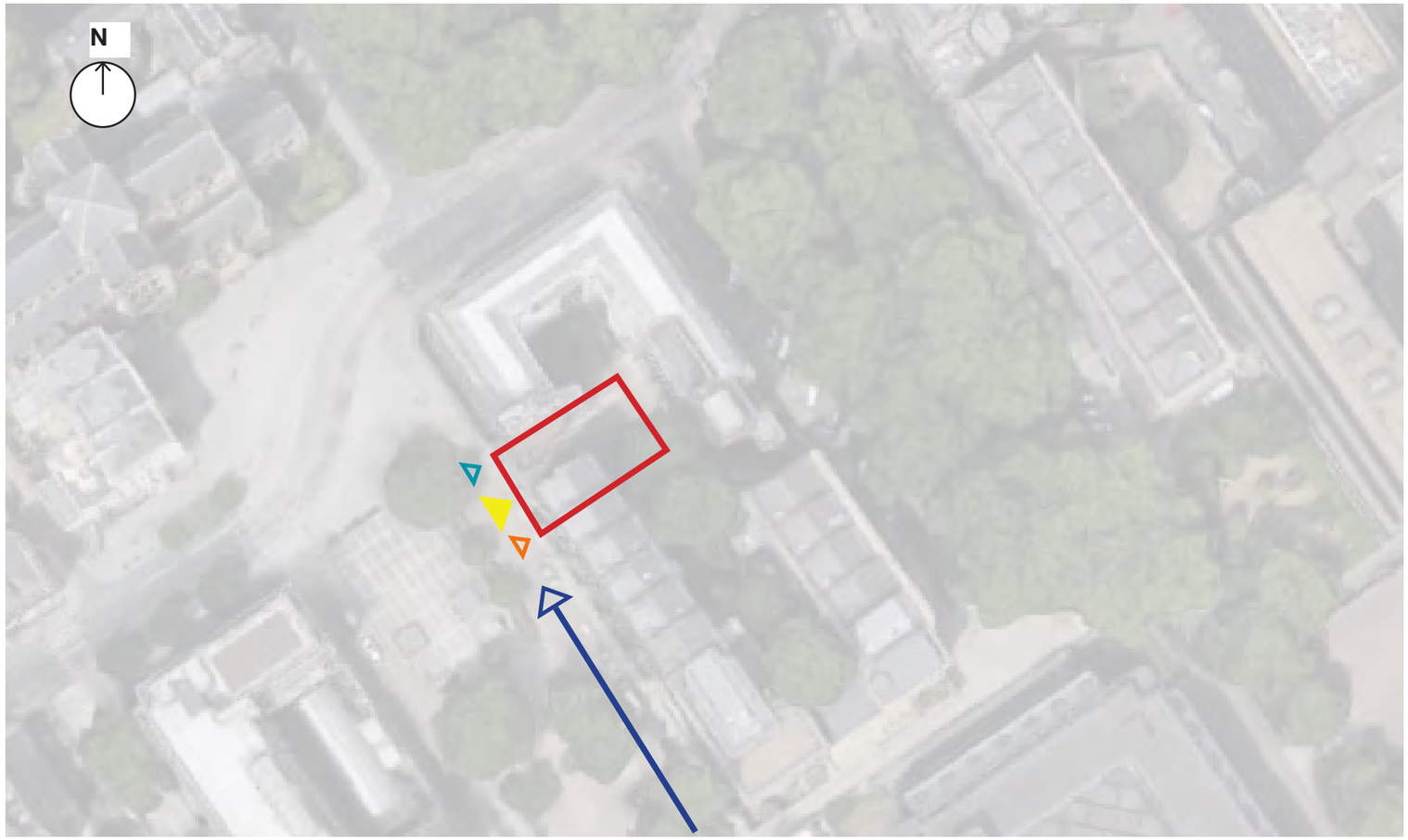


Figure 4.22. Arial View (image from google)

Figure 4.23. Torrington Square gated service access

Figure 4.24. SUEZ vehicle on Torrington Square

4.4.8 Refuse Strategy and Cleaning

Waste

32-33 Torrington Waste Management Plans and Operations from March 2017 provides guidance limited to waste produced from the 32-33 Torrington site – relating to all waste streams arising from all business activities on this site.

This will include how the waste is segregated, stored and collected by the waste disposal contractor.

Waste and recycling bins are available and accessible to occupants on every floor of the buildings. The bins will be emptied every morning.

Waste bin bags will be then collected and taken to the waste compound (approximately 50m from the site) that serves all of Birkbeck University.

Six 1100ltr euro bins (two general waste and four recycling) are then emptied six days a week ensuring waste storage capacity at all times.

Cleaning

Further to cleaner room layout specification received from Birkbeck, it was confirmed that the majority of finishes to the space will be from the standard Birkbeck specification and will therefore meet the requirements of the cleaning team.

The floor finishes were discussed and in general we have proposed carpet tile to the main areas, with vinyl to the tea points and biosample room, non-slip safety vinyl to toilets and shower and anti static vinyl to the comms rooms.

Biosample room is to have coved skirting and fixed furniture should be health line level.

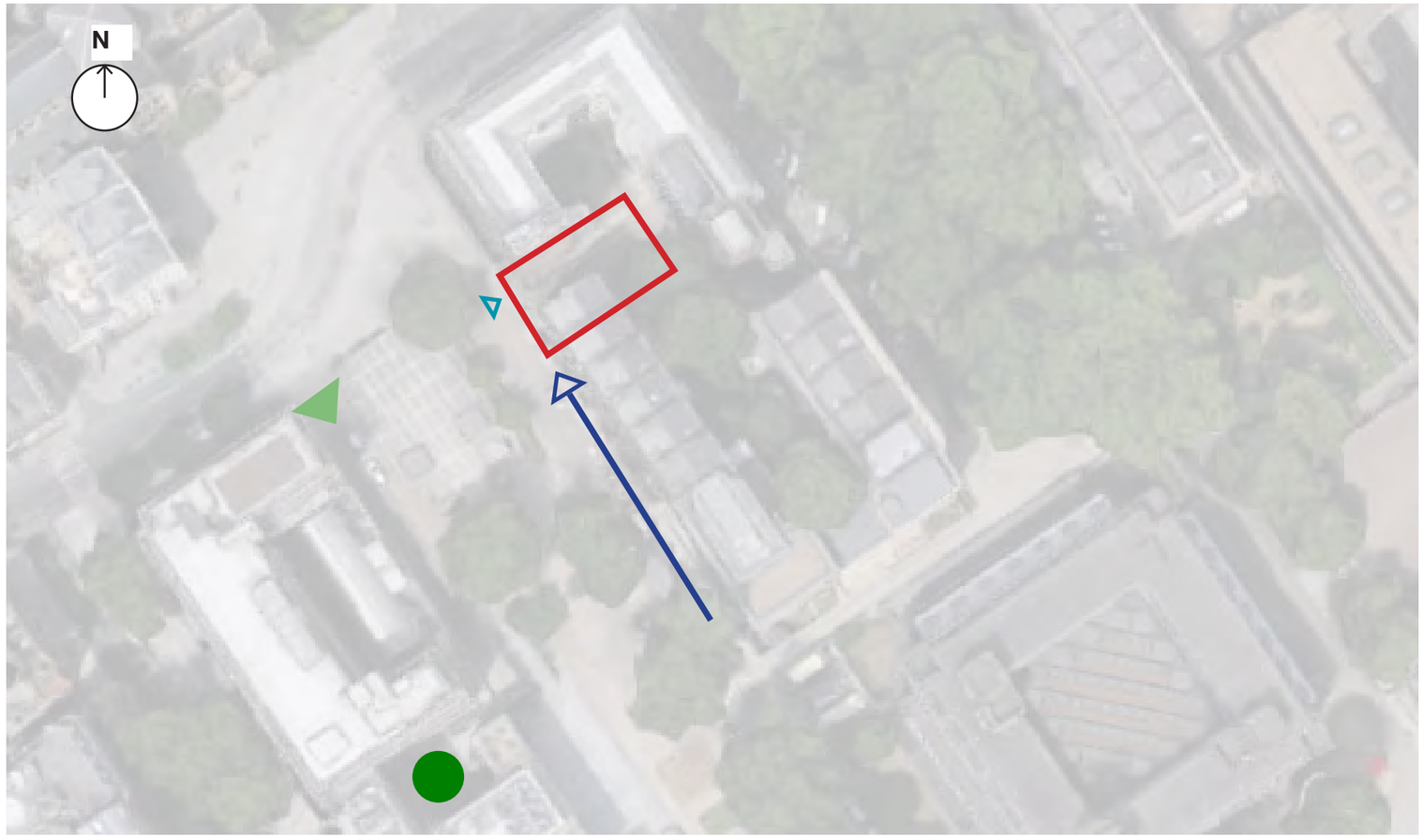


Figure 4. 25. Arial View (image from google)

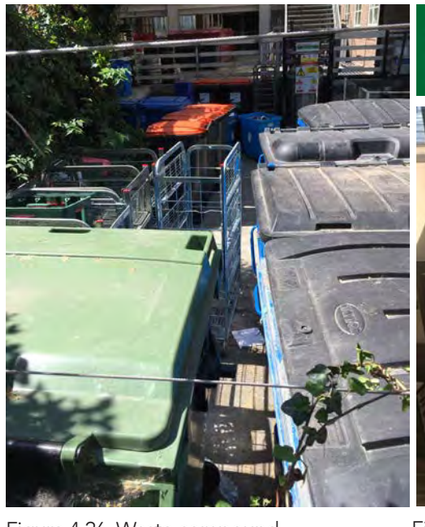


Figure 4.26. Waste compound

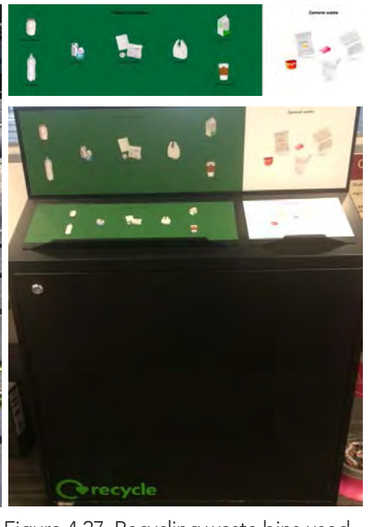


Figure 4.27. Recycling waste bins used across Birkbeck

4.4.9 Bicycle Storage

The proposed development provides 12 secure and covered bicycle spaces for the staff on the courtyard plus staff facilities such as 9 lockers and 1 shower at Basement level.

Cyclists will access the cycle store via a fob activated entrance on Torrington Square and gain access to the staff facilities through the ramp that leads to the courtyard.

From the Basement, vertical circulation (lift and stair) can be used to access all the floors of the buildings.

Visitor cycle parking will be accommodated through existing on-street cycle racks in the vicinity.

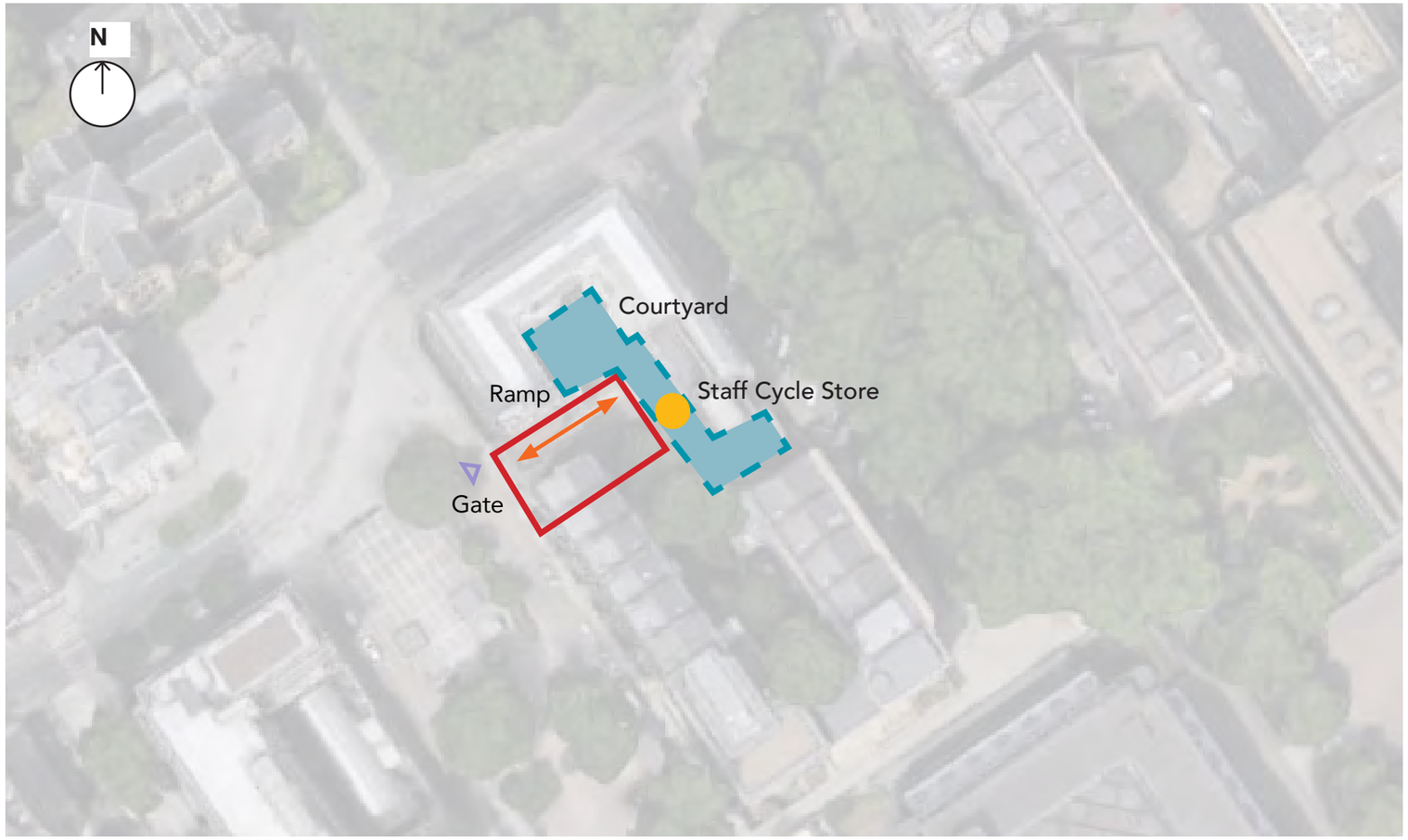


Figure 4.28. Arial View (image from google)

KEY

Site

Major Pedestrian Entrance Point

Staff Cycle Store

Figure 4.29. Sheffield Cycle Shelter with 6 racks within secure gated courtyard

4.4.10 Landscaping

The **garden** of the ToddlerLab will act as an extension of the study programme, enabling observation of children with a secure external space. The garden will offer parents, children and staff space to interact in a safe and stimulating environment. We have considered the use of colour, texture and sound to provide stimulus within the small space. We have provided stimulation through the opportunity to clamber on a low and safe rounded seating stone (hollow concrete to reduce weight) that also doubles as a seat. The drilled rock water feature provides stimulation through sound and touch without creating any water that children can fall into.

We have created a variety of surfaces with materials that provide different textures and sounds when walked on, from the timber decks and the textures of the resin bound gravel and artificial turf. The garden has been designed to be low maintenance with the plating designed to provide year round colour, texture and scent.

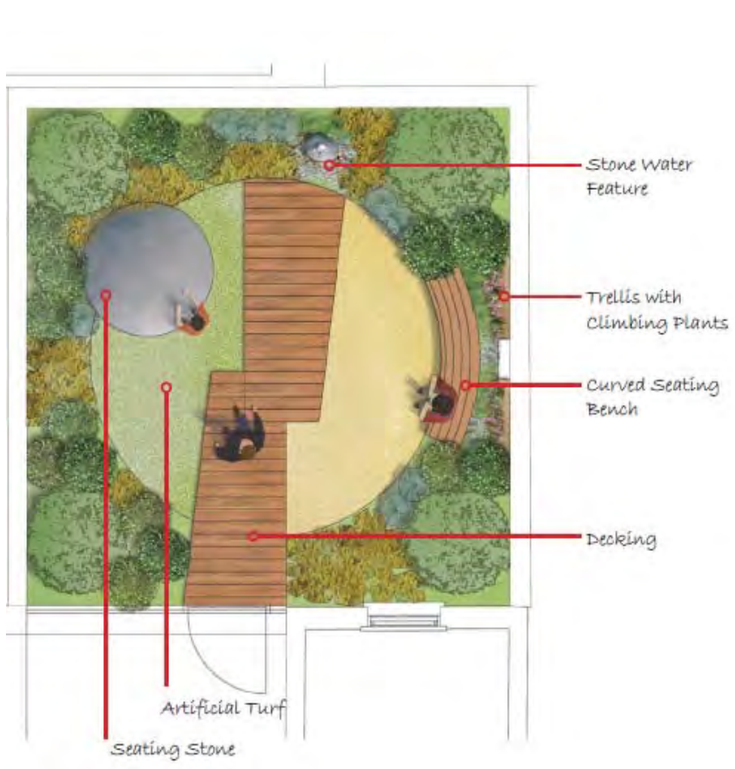
The **green roof** system at roof level would provide biodiversity as well as protection of roof membranes and some attenuation of surface water.

Green roofs are fairly low maintenance, requiring inspection every 12-24 months, which is as often as the waterproofing membranes would require inspection on a normal flat roof. They do not require irrigation but can be designed to provide a range of habitats that attract birds and insects.

The **planting** provides a simple palette with a mix of both evergreen and native plants that improve the ecology credit under BREEAM. The combination ensures that the garden is never empty but provides seasonal change with spring and summer flowers and autumn colours. We have also included a number of scented plants, particularly around the seating stone.

The planting palette provides an indication of species and the colours and textures that would be provided. All of the plants selected have a low toxicity and are not harmful if ingested.

Wilder Associates Landscape Statement provides further information on plant species and proposed materials.




Stone Water Feature


Seating Stone


ing Floor and Planting

Figure 4.30. Images from Wilder Associates Landscape Design

4.4.11 Ocupancy

The total estimate of occupancy for the site is:

- **35 academics; and**
- **10 visitors**

The floor space available is adequate for the number of users.

For fire escape, air quality, overheating and other BREEAM calculations, a maximum occupancy number based of the area capacity was used to ensure that the site will perform effectively in worst case scenarios.*

*Note: this is detailed in the supporting reports.

4.4.12 Area Schedules

Gross Internal Areas (GIA)

Information Title	
Birkbeck CBCD ToddlerLab	
Project No.	Originator
BB029	BA
Date	
12.07.17	

BISSET ADAMS

No. 32 GIA (square meters)	
Levels	**Existing**
Basement	68.5
Ground Floor	64.5
First Floor	65.9
Second Floor	56.9
Third Floor	56.9
TOTAL	**312.7**

Annex GIA (square meters)	
Levels	**Proposed**
Basement	112
Ground Floor	61.73
First Floor	95.7
Second Floor	95.7
Third Floor	95.7
TOTAL	**460.83**

Gross External Areas (GEA)

Information Title	
Birkbeck CBCD ToddlerLab	
Project No.	Originator
BB029	BA
Date	
17.07.17	

BISSET ADAMS

No. 32 GEA (square meters)		
Levels	**Existing**	**Demolished**
Basement	86.4	1.57
Ground Floor	84.12	1.57
First Floor	84.26	1.3
Second Floor	71.69	1.3
Third Floor	71.69	1.3
TOTAL	**398.16**	**7.04**

Annex GEA (square meters)	
Levels	**Proposed**
Basement	135.6
Ground Floor	72.2
First Floor	108.3
Second Floor	108.3
Third Floor	108.3
TOTAL	**532.7**

SITE AREA	No. 32	Annex
sq.mt.	**155.96**	**187.04**

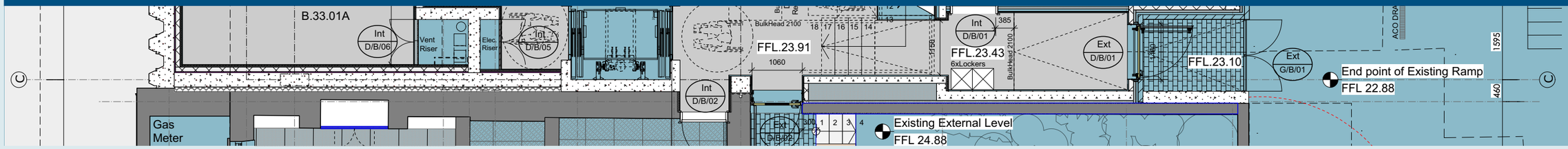
Internal Areas Schedule

Information Title		
Birkbeck CBCD ToddlerLab		
Project No.		Originator
BB029		BA
Date		
17.07.17		

Internal room Areas (square meters)			
Levels	**Room Reference**	**Description**	**Area**
Basement	B.32.01	Corridor	5.98
	B.32.01A	Technicians Office	22.41
	B.32.02	Changing	5.45
	B.32.02A	Toilet Facility	3
	B.32.03	Comms/server room	5
	B.32.04	Office	11.78
	B.32.05	Storage	1
	B.32.	Boiler	1.84
	B.32.	External storage space	1.68
	B.33.01	Corridor	27.47
	B.33.01A	Control Room	14
	B.33.01B	CAVE	15
	B.33.02	Control Room	7
	B.33.02A	EEG	8
	B.33.03	Control Room	4.6
	B.33.03A	Nap reasearch room	7.5
Sub Total			**141.71**
Ground Floor	00.32.01	Corridor	12.48
	00.32.01A	Office	24.66
	00.32.01B	Office	12.2
	00.32.02	Toilet lobby	2.7
	00.32.02A	Cleaner room	4
	00.32.02B	Toilet Facilities	2.3
	00.33.01	Reception/Visitors Entrance	42.74
Sub Total			**101.08**
First Floor	01.32.01	Staircase	4.7
	01.32.01A	Seminar room	28.8
	01.32.02	Corridor	4.7
	01.32.02A	Kitchenette	10.6
	01.32.03	Toilet lobby	3.6
	01.32.03A	Toilet Facilities	3
	01.33.01	Staircase	8.65
	01.32.01A	Waiting room	12
	01.32.02	Corridor	7.88
	01.32.02A	Home Environment research room	28.5
	01.32.03	Control room	8.5
	01.32.04	DDA WC with shower	7
Sub Total			**127.93**
Second Floor	02.32.01	Staircase	3
	02.32.01A	Office	7.5
	02.32.01B	Office	18.48
	02.32.02	Corridor	4.43
	02.32.02A	Office	10.81
	02.32.03	Storage	1.55
	B.33.01	Staircase	8.65
	02.32.01A	Waiting room/Biosample collection	12
	02.32.02	Corridor	7.88
	02.32.02A	Early Intervention Environment research room	29
	02.32.03	Control room	6
	02.32.03A	EEG	7.4
Sub Total			**116.7**
Third Floor	03.32.01	Staircase	2.84
	03.32.01A	Office	7.95
	03.32.01B	Office	18.91
	03.32.01C	Office	6.6
	03.32.02	Corridor	4.69
	03.32.02A	Office	10.6
	03.33.01	Staircase	10
	03.32.01A	Waiting room	12
	03.32.02	Corridor	7.88
	03.32.02A	Pre-School Environment research room	29
	03.32.03	Control room	6.25
	03.32.04	Toilet Facilities with hairwash basin	8.66
Sub Total			**125.38**

TOTAL			**612.8**

5.0 TECHNICAL DESIGN



5.0 TECHNICAL DESIGN

5.1 Investigation

A number of investigations were carried out to establish the condition of the existing building (i.e. WY Structural survey of Existing building).

Prior to the submission of the Planning Application a number of intrusive investigations of the site and existing building were conducted.

Proposed opening up works to assist the scheme designs for the proposed Toddler Lab where issued to Camden Council on the 11th of April 2017 and on the 12th of April confirmation that the works could proceed was received.

Opening up works are now being undertaken in consultation and with supervision from Camden Planning and Conservation Departments.

Results from findings will be collated and submitted to Camden Planning and Conservation Departments.

Intrusive excavation

This involves the drilling of three boreholes to establish ground conditions at depth and several hand dug trial pits to expose existing foundations. These points are at various internal and external locations as specified by Webb Yates. Typically surface disturbance is limited to around 0.3m by 0.4m at each point.

Underground CCTV Drainage Survey

A CCTV drainage Survey has been carried out on the existing drainage runs to establish the likelihood of future collapse so that repairs can be conducted if necessary.

Anthrax Analysis of Plaster Samples

The Health and Safety Laboratory (HSL) received six plaster samples on 17/03/17 for microbiological analysis of Bacillus anthracis, the causative agent of anthrax.

No evidence of Bacillus anthracis was found in the samples sent for analysis, either by real time PCR assay or supportive culture based analysis.

Lead Paint and Dust Report

A report was drafted with instructions to carry out indicative sampling/ analysis of paintwork and lead dust contamination.

Substantial areas of painted/papered plaster had already been removed from 1st Floor areas. Those areas left untouched were required to be kept intact so were not subjected to the destructive sampling methodology employed elsewhere.

Asbestos Survey

There is an existing Asbestos register for the building and all known incidents of Asbestos in the building are clearly labeled. A full refurbishment & demolition survey of the complete building will be undertaken by a specialist Asbestos Removal contractor in due course before any works are done to the building. Any necessary removal works will be carried out as appropriate.

UXO Desk Study & Risk Assessment

No records have been found indicating that the Site was bombed and no other significant sources of UXO hazard have been identified on the Site. Given this, it is considered that the Site has a low UXO hazard level.

Phase 1 Geo-Environmental Desk Study

A Geotechnical Survey was held to help inform the structural and drainage strategy for the proposed scheme.

The site is shown to be underlain by superficial deposits comprising the Lynch Hill Gravels.

The shallowest bedrock unit is shown to be London Clay Formation.

The only potential contamination source identified relates to the presence of Made Ground which could be present in the north western half of the site, arising from the demolition of the former property on 33 Torrington Square and construction of the access ramp.

However, this does not give rise to any significant contamination risks as future site users will not be exposed to any of the soils as the proposed building covers the entirety of the site.

In addition, the construction of the lower ground floor and raft foundation will remove any potential Made Ground regardless.

Therefore it is not considered that there are any significant contamination risks at the site in the context of the proposed development.

The closest surface water feature to the site is an extended culvert shown approximately 400m to the east of the site, presumed to be a section of the River Fleet, which is a tributary to the River Thames. The River Thames itself is 1.6km to the south of the site.

Flood Risk Assessment

A Flood Risk Assessment was prepared. The geo-environmental desk study shows that the site is located in a Low Risk Flood Zone. There is some potential for Groundwater Flooding and the drainage strategy will take this into consideration.

The strategy developed is in full accordance with best practice and national planning policy. The Site is presented as sustainable in terms of flood risk and is compliant with criteria set out by the NPPF.

The soil underlying the site at depth may have a volume change potential i.e. the soils swells and shrinks with changing moisture content. This property will have an influence on foundation type and depths for the proposed development particularly near existing or proposed trees.

There is the potential that any groundwater in the underlying gravels may present construction difficulties and complicate the design of the basement.

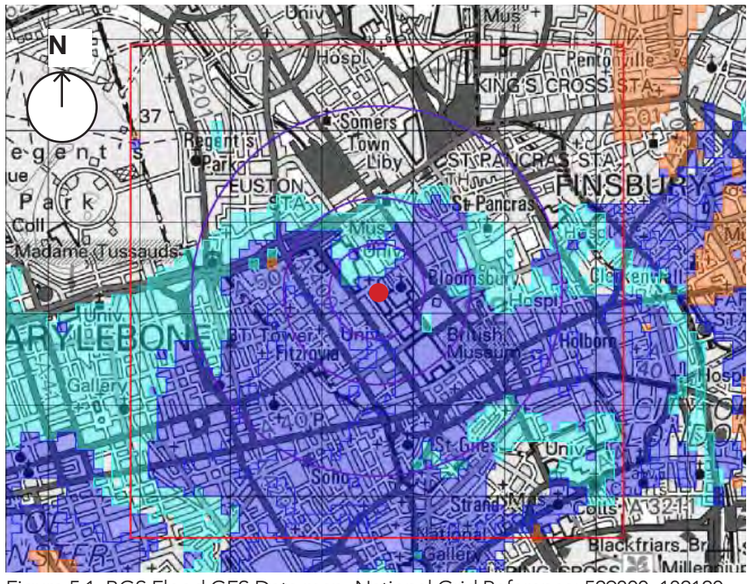


Figure 5.1. BGS Flood GFS Data map. National Grid Reference: 529800, 182120

Historic Environment Desk-based Assessment

Pre-Construct Archaeology Ltd was commissioned by Birkbeck, University of London to undertake a Historic Environment Desk-Based Assessment with the aim of this report is to identify the potential for archaeologically significant deposits being present at land to the north of 32 Torrington Square to support the application to develop the site.

Survival of prehistoric, Roman and early medieval archaeology being present at the subject site is considered low to moderate.

Presence of post medieval and modern activity archaeology being present at the subject site is considered moderate to high.

Given the findings of the Desk-Based Assessment, it is possible that further archaeological work will be requested as a means of mitigating the potential archaeological resource. Such work is likely to be an archaeological watching brief or possibly archaeological evaluation. However, any work must be undertaken by an approved archaeological contractor, following the compilation of a 'Written Scheme of Investigation' which has been approved in advance by the London Borough of Camden.

Air Quality Survey

The main likely effects on local air quality during construction relates to nuisance dust. A range of mitigation measures to minimise or prevent dust emissions would be implemented through the construction works, this would ensure that the effects would be insignificant at all receptor locations.

Given the Development would be 'car free' and emissions generated from the proposed boiler meet relevant emission levels, the Development is not expected to give rise to air quality impacts. As such the likely effect on local air quality would be insignificant and the operational phase of the Development has not been considered further.

Based on a review of local monitoring data it is considered that the short term AQS objectives are likely to be met at the Site. As such the introduction of the ToddlerLab academic facility users to the Site is considered insignificant.

5.2 Cleaning and Maintenance

Consideration has been given to the access strategy for cleaning and maintaining the external envelope of the building. A management plan will be put in place to ensure public and operative safety during any necessary window cleaning or maintenance activities.

Access to the external elevations is aimed primarily to clean and maintain the glazed areas and associated supporting frames. The non-glazed areas i.e. Composite Panels and Brickwork have been selected as they will not require frequent cleaning or maintenance.

Several access options have been explored during early design stages which included:

- Traditional Roof Mounted BMU on twin tracks;
- Roof mounted BMUs with mid-sized jibs;
- Rope Access.

All the above options have been discounted due to stakeholders and design team's preferences, visual requirements and hierarchy stipulated within the industry codes and regulations.

Windows to the front of the building can be accessed from a cherry picker should they require cleaning or maintenance. The windows to the back facade can be easily cleaned from the courtyard below them. All other areas will not require regular access as the materials used are low maintenance.

The side rear glazed curtain walling at the back of the annex can be cleaned by an extendable telescopic pole.

Green and brown roofs can be accessed from the flat roof areas via a hatch. A metal balustrade will be installed to the pitched roof on the existing building to enable inspections and maintenance to be carried out as necessary.

The lower ground floor level boiler room has good external access and is directly adjacent to the service area. The large vertical service risers are incorporated into the central corridor providing an even distribution to each of the wings. Horizontal distribution of services is via the corridor ceiling voids on the new annex and within the floor void o the existing listed building.

5.3 Sustainability and Environment

Sustainability

The proposed development is a part new build – part refurbishment and the design has been developed with services engineers to agree the most advantageous and sustainable solutions.

The new building façade materials and concrete slab performance were specified to ensure thermal balancing and to be, as much as possible, environmentally sustainable.

The **new build annex element** on the former 33 Torrington Square, the land between the Warburg Institute and 32 Torrington Square will contain all the research environments.

The **refurbished element**, the existing 32 Torrington Square, will house the academic offices. The listed nature of the building limits the upgrades and changes that can be made to the building.

It is the client's intention to certify the works under BREEAM with a target rating of **Excellent** for the new build part and **Very Good** for the refurbished part.

As part of the energy and sustainability strategy, a series of standalone studies have been developed. These focus on assessing overheating and thermal comfort, energy performance and carbon reduction, and options for utilising low and zero carbon technologies and passive design solutions. Please refer to the accompanying reports for more details.

5.0 TECHNICAL DESIGN

Environment

32 Torrington Square was subject of an assessment survey by a charted ecologist which concluded the site is of low ecological value:

- The site is not within 2km Special Area of Conservation (SAC), Special Protection Area (SPA) or Ramsar site.
- The Site is not within 500m of a Site of Special Scientific Interest (SSSI).
- There is no broad-leaved woodland, water courses wetlands, flower-rich meadows or grasslands or heathland on or within 100m of the construction zone.

The site was also assessed fully through historic records and site inspection and no features or ecological interests were found or recorded on site or adjacent a mature London plane tree close the rear boundary wall.

There are no notable species or habitats on site or found to be using the site therefore no ecological legislation is directly in force.

The vacant site is fully paved.

The site construction areas have very low wildlife content and there are therefore no opportunities to reduce wildlife disturbance further through modification of the works.

There are no foreseen detrimental impacts from the works but an ecological clerk of works will be on call should any unforeseen impacts occur.

Tree along the eastern boundary to be retained in accordance with BS5837.

One of the two key recommendations is to provide an area of green roofing, mat or substrate based, on the flat roof of the new structure, in accordance with the London Plan Policy. The London Plan seeks to encourage the use of living roofs in small developments and extensions where the opportunity arises.

The new green roof area would be of local ecological value.

5.4 Adaptability and Flexibility

On this project we've approached adaptability as a set of strategies to provide a comprehensive resolution for describing the different types of changes which may be required of a building over time.

Adaptability has been driven by the aspiration to 'future-proof' the building through a range of considerations (i.e. accessibility, movable partitions, drop ceilings).

The building has been designed to meet the requirements of the current brief, within the constraints of Building regulations. However the concept and the distribution of stair cores, the potential for future expansion is as follows:

Architecture

Potential to change desk layout;

Floor and wall finishes are easily replaced catering for a change of tenant scenario;

The lift has been sized for an occupancy above the required, allowing for potential increased occupancy.

Structure

Both the superstructure and substructure of the proposed development within the annex have been developed to ensure future changes of use can be accommodated e.g. a framed structure with column free spaces where possible, with internal partitions being non-loadbearing, utilising structural materials and forms which can be adapted to accommodate new services provision etc. Research, office and meeting room spaces are of a scale that can be easily re-planned and/or subdivide to suit alternative future uses. The building has been designed to allow future conversion to office/research space should the client have need to expand the building.

The existing structure of the existing Grade II listed building located at 32 Torrington Square is largely being retained with the loadbearing walls retained in their current location.

Services

Mechanical and electrical services will be designed to meet the current occupancy and loadings for the current proposals, but the incoming services will be sized to meet future increased loads both electrically and mechanically. An allowance will be made within all risers and service routes to potentially allow additional services or larger services to be distributed around the building. The strategy for the proposed building is for all areas to be utilised by one tenant / user, but the potential for the building to be split on a floor by floor basis or by dividing floor plates can be accommodated by additional submetering where required.

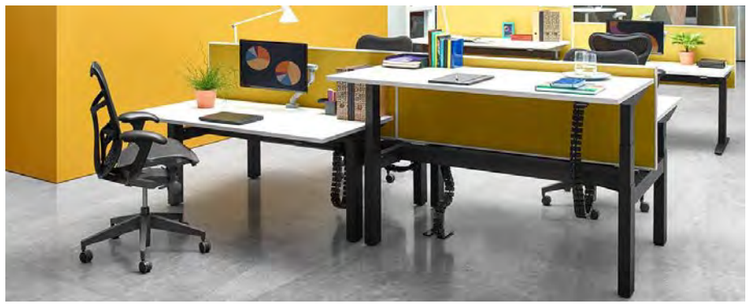


Figure 5.2. Adjustable height funiture

Typical Roof Mounted Air Handling Unit

Typical Supply / Extract Grille

Typical Toilet Extract Valve

Figure 5.3. M&E specified items