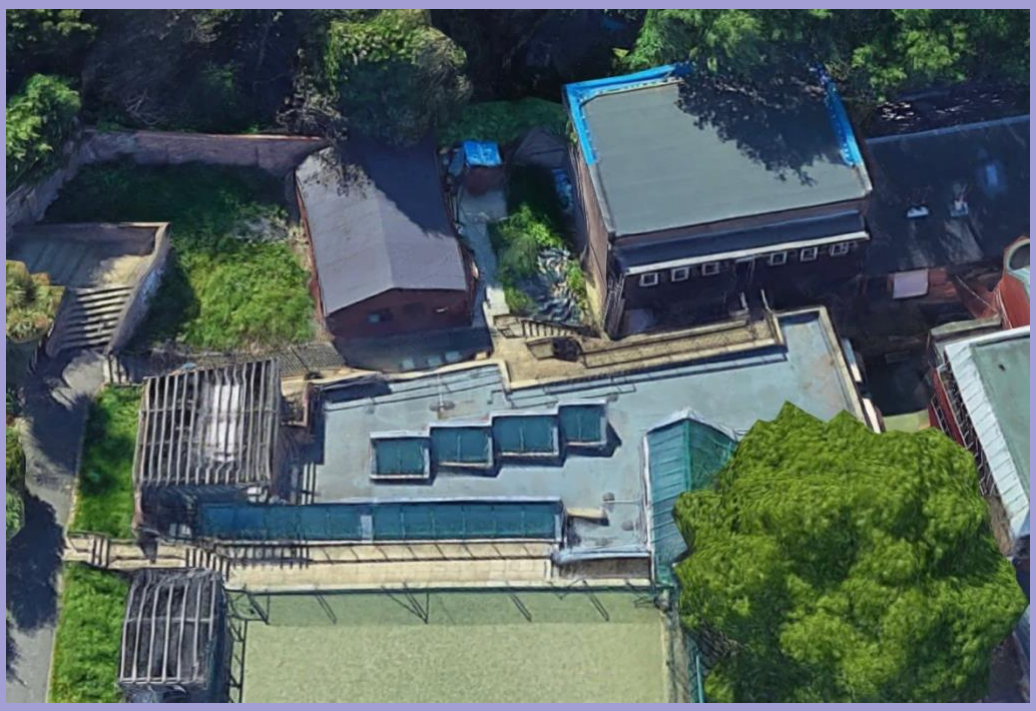
UNIVERSITY COLLEGE SCHOOL

PROJECT 200 EDUCATIONAL DEVELOPMENT

CIRCULAR ECONOMY
STATEMENT ON
PROPOSED DEMOLITIONS

PLANNING APPLICATION STAGE : FINAL



18th December2023

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1. EXECUTIVE SUMMARY

The consideration of existing building retention or demolition, in full or in part, has been very carefully considered as part of the design development, including listening to guidance from Camden Planning and Sustainability officers during the initial PreApp submission and the later Planning Performance Agreement submission. A number of key factors informed the final proposals:

- The School has a strong commitment to their Frognal Senior School site dating from 1906, so this development is designed with a long term future in mind, giving more advantage to the benefits of modern highly thermally efficient construction.

- The proposal project site is one of the last areas of land within this constrained School campus available for significant development, so it is important that the project uses the whole site effectively and efficiently.

- The new project will work best if it is integrated and coordinated as a single holistic development, for accessibility and inclusivity, for future-proofing and for the setting of the listed buildings.

- The new project is targeting BREEAM “Excellent” and Stage 2 design work has been carried out, including optioneering on products and materials.

- All 3 existing buildings and the Amphitheatre are of poor construction with significant maintenance and performance issues that compromise their long-term viability.

- The Giles Slaughter building has significant constraints that limit its future use and reduce its flexibility for change, such as all load-bearing walls and low soffits, combined with typical performance deficit of a building constructed in the early 1990’s compared to modern thermal and airtightness standards.

- Having started with a concept to demolish all 3 relevant buildings in 2019-20, after further design development, review of the London Plan 2020 and Camden Policy, study of options, consultations with Camden and review with a wider team of consultants including sustainability experts, the project design has evolved to retain important elements of the GS Wing where they provide a meaningful contribution.

- A detailed analysis of the GS Wing and the new design showed that a significant saving in Whole Life Carbon emissions can be made by retaining the 800mm deep ground-bearing reinforced concrete slab and approximately 50% section of the east retaining wall and associated contiguous piling. These elements are now integrated into the new construction. The final analysis has been included in the project Sustainability / Whole Life Carbon Report.

- Combined with retained elements, the new buildings for the long term future will be flexible and adaptable, provide in full the spaces required in the School brief, and significantly enhance the facilities, ecology and sustainability characteristics of the School estate.

- It is considered therefore that these full and partial demolition proposals, which have developed through consultations and options studies to find the best design and low Whole Life Carbon approach, meet the requirements of Camden Policy and the London Plan.

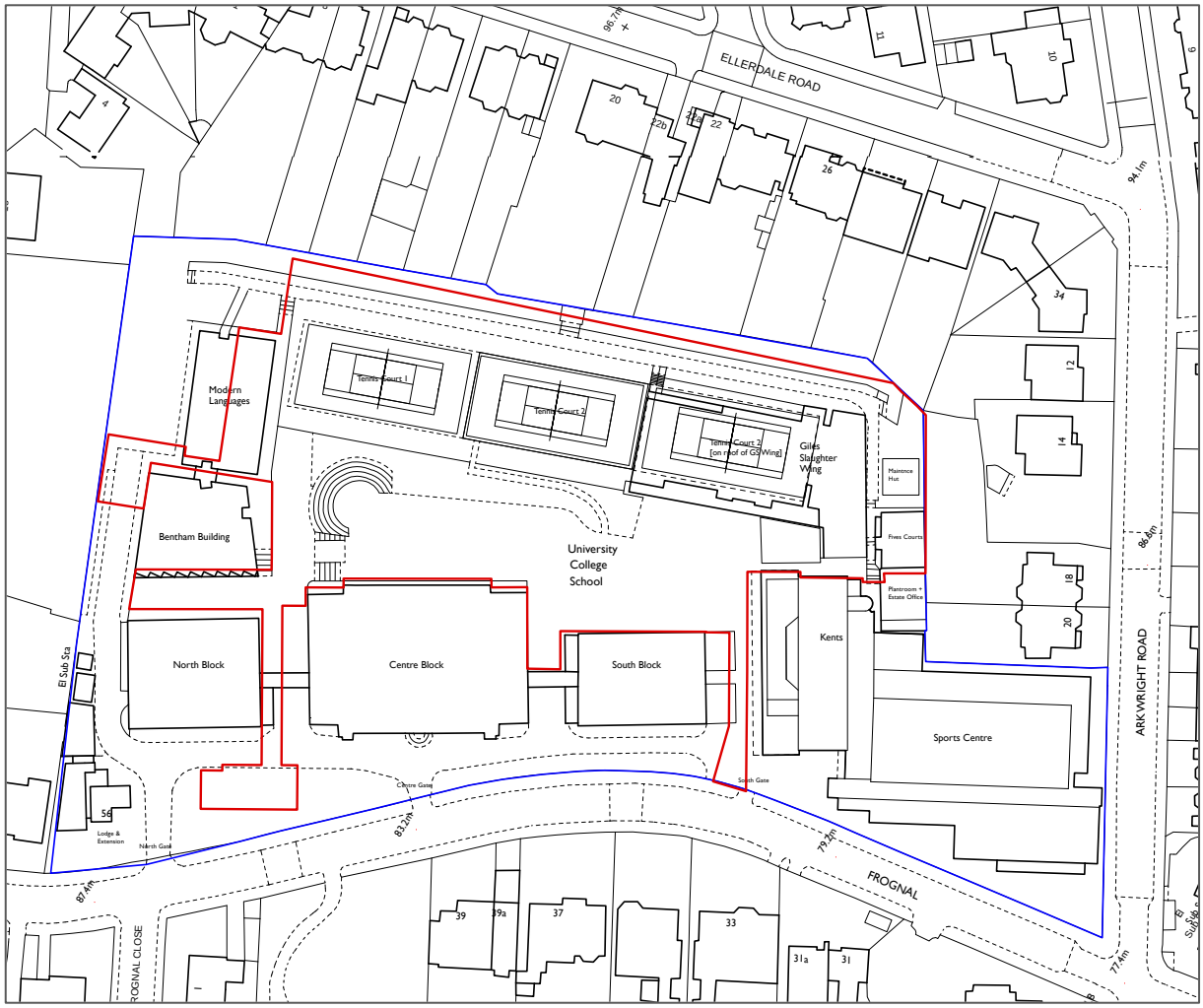
2. OVERVIEW

This Report, with drawings and information from the Architectural perspective on the project is to support the overall Circular Economy and Whole Life Carbon Statements included in the application by Max Fordham LLP sustainability consultants. There are also survey inputs on the existing building from structural and building MEP services consultants.

The strategic approach for the implementation of the circular economy principles in the Proposed Development accounts for several key factors which are unique to the Site and its wider London context.

3. THE SITE

The UCS Frognal School site lies on the east side of Frognal, Hampstead. The site was first developed as a School in 1906. The three main original listed School buildings address the street, behind a frontage of generous grassed areas and a line of semi-mature trees.



Site plan with project area defined in red line

The School site sits within a large urban / suburban block. The west side is completely open to the pubic street, while the other three sides have residential properties to the north, east and south – there are more residential buildings across the street on the west side – being bounded by Frognal to the west, Arkwright Road to the south, Ellerdale Road to the east, and Frognal Way to the north, an informal private road that curves around and itself rises up towards Hampstead village.

On one side the school abuts the public street and defines the edge of the public realm, and on the other three sides it is bounded by the back gardens of private residences, mostly large properties with some in multiple occupancy.

The rear gardens are in most cases expansive generous outdoor spaces with mature planting, green lawns and large mature trees, mainly deciduous. With the land at the rear rising to the south, east and north, it effectively forms a man-made “amphitheatre” with the UCS rear courtyard at its base.

Aerial GoogleMaps bird’s eye view of site with project site marked

The construction site will need to be accessed from the south gate, as the northern gate and north service road [on left side of photo] terminate in an area of mature landscape garden, trees and biodiverse planting which the project team were determined to protect.

This restricted access, described in more detail in the CMP Report, has an impact on viability of retention of the existing buildings, as there are physical constraints for access particularly in the area of the existing Oak tree.

The area of the 3 buildings is shown on the next page with aerial bird’s eye photos, that show the extent of land that is involved around the buildings.

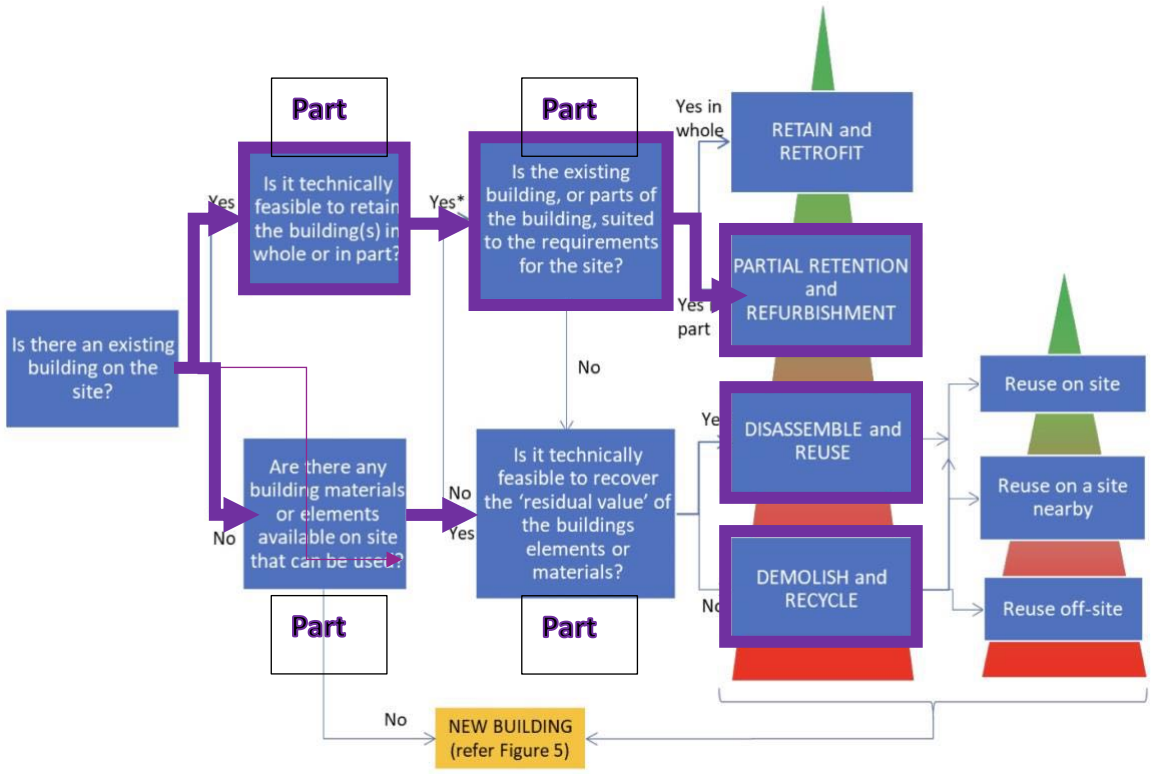
Aerial GoogleMaps bird's eye view from west of 3 buildings

Aerial GoogleMaps bird's eye view from north-east of 3 buildings

4. DESIGN APPROACH

The Circular Economy decision tree from the guidance document and as set out in the diagram below has been followed to determine the design approaches for existing structures and buildings.

Figure 4: Decision tree for design approaches for existing structures/buildings



* With exceptions, refer to paragraph 2.4.4 below.

In the decision tree diagram above from GLA guidance, the approach on this project has been highlighted with the purple lines, clarified as follows:

1. Part of the existing GS Wing and retaining wall can be retained
2. The retaining wall and deep ground floor slab of the GS Wing can work with the requirements of the site – all other parts including Fives building and Maintenance hut are not suited to the requirements of the site
3. Part of the existing materials on site can be re-used
4. Part of the residual value of the building elements can be re-used
5. Therefore there can be partial retention, partial disassembly and reuse, and partial demolition and recycle
6. Some elements can be re-used on site, analysis is underway on whether elements / materials can be reused off site or nearby.

The strategy has been evolved over the course of the design development of the project, and is set out in the next sections. The separate Pre-Demolition Audit Report should be referred to for more detail on re-use and recycling.

5. CIRCULAR ECONOMY DESIGN APPROACHES FOR NEW BUILDINGS, INFRASTRUCTURE AND LAYERS OVER THE LIFETIME OF THE DEVELOPMENT

A Pre-development and Pre-Demolition Audit [KaNect] has been prepared with respect to the existing site and buildings. The Report sets out recommendations for the management of waste arising from the demolition works proposed on the Site.

In line with the Waste Hierarchy, it is sought to maximise the residual value of materials including the reuse of existing materials either on or off-site. This is to be facilitated through deconstruction where feasible and separation of waste streams on site.

Existing materials have been investigated for re-use onsite which will assist in further reducing the embodied carbon impact of the new build development. It is sought that opportunities for reuse will be explored in the first instance; however, it is expected that there will be some materials for which direct reuse is not possible. Where this is the case, the Waste Hierarchy will be applied to ensure these materials are recycled where possible, with he conclusion being that the percentage total of recycle/reuse on and off site is 95%.

A Sustainability and Whole Life-Cycle Carbon Assessment is included with the Application , this document considers the embodied carbon impacts of the proposed new development, including proposed demolition.

The project includes for re-development by removing current inadequate separate buildings and structures, and replacing with a new integrated educational facility building to meet the school brief outlined. The proposed building is part single storey, part two storey and includes a double height space for the Recital Room, to provide te standard of acoustics required. The proposed building will comprise outstanding first-class educational facilities for:

- New Music School including specialist Music Recital Room
- Cafeteria catering space
- Drama Studios
- Hub for Lower School classrooms including shared Common Room
- Lecture Theatre
- Wellbeing Centre with space for contemplation
- Medical facilities
- Ancillary accommodation

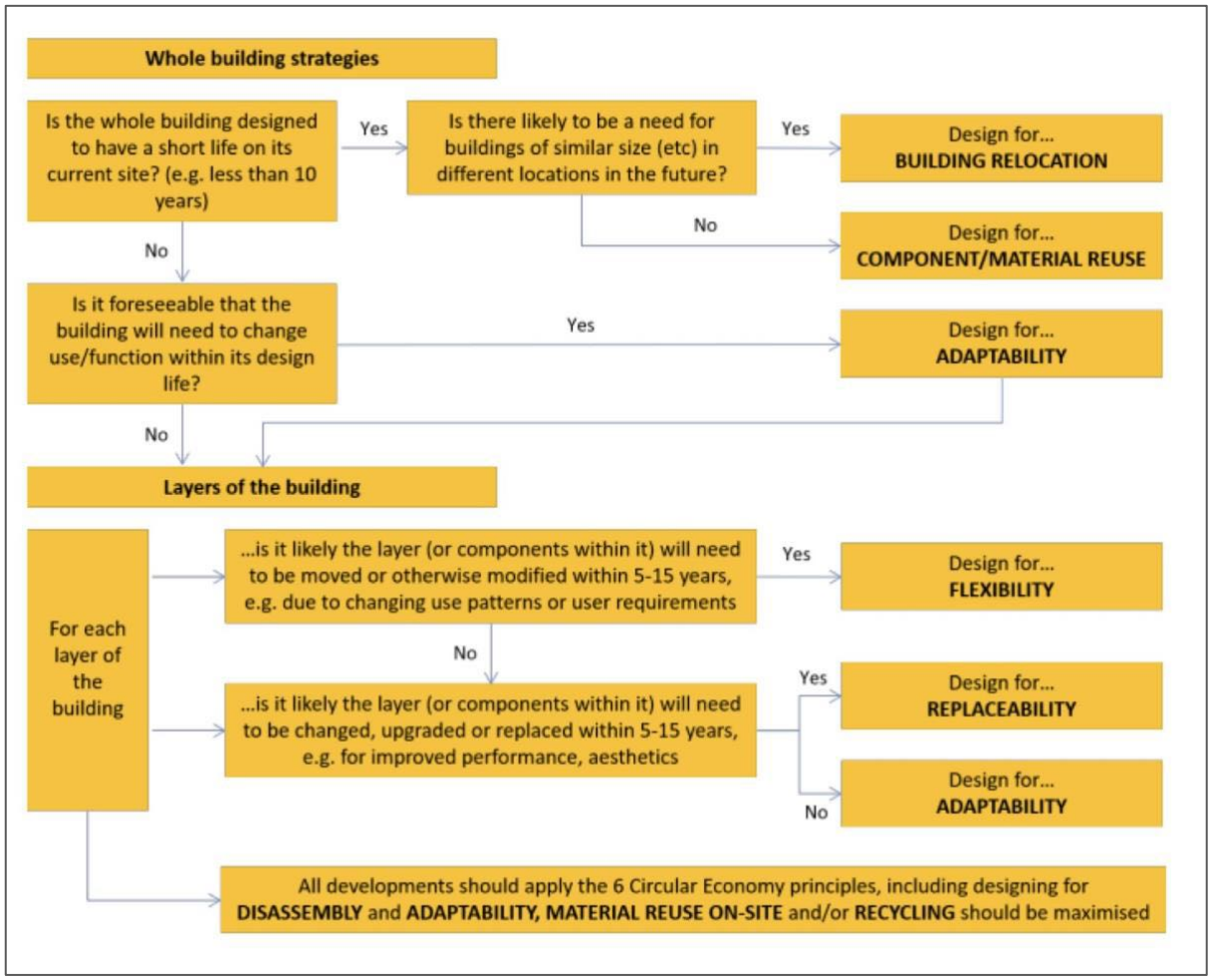
Many of these spaces have specific spatial and technical requirements that are very difficult to achieve in existing buildings unless all the parameters are in place, such as:

- Volume
- Clear internal height
- Space for services
- Flexibility of structure
- Acoustics and ability to enhance performance
- Space for adequate compliant thermal performance of all fabric elements

6. WHOLE building strategy

After considering the existing structures / buildings on the Site, the Circular Economy decision tree from the associated guidance document and as set out below has been followed to determine the design approaches for new buildings and infrastructure.

It is not expected that there will be a change in the use of the Proposed Development, it is intended for UCS school use, and any [unlikely] future change is anticipated to remain within the educational use type. The Proposed Development will therefore be designed for longevity. The Proposed Development will also support future adaptability within the educational use type by delivering a clear and flexible floorplate, and framed construction with some long span load-bearing walls.



Circular Economy Decision Tree for design approaches for new buildings [GLA]

Circular Economy design approaches can be summarised as follows:

1. There are existing buildings on the site, including on the project site [which this text refers to]
2. It is considered technically feasible to retain part of these buildings on the project site
3. Part of the residual value of the buildings can be retained
4. The preferred strategy is:

   a. New Building
   b. Disassemble / deconstruct and reuse where feasible
5. The potential to **refurbish** the existing buildings has been explored. However, there are a many constraints associated with the repurposing of the existing development including internal structural configuration, buildability, fixed constraints and regulatory compliance.
6. The opportunity to retrofit the existing structure has been explored. However, there are a number of constraints associated with the repurposing of the existing development including internal structural configuration, buildability, fixed constraints and regulatory compliance.
7. In line with the Waste Hierarchy, it is sought to maximise the residual value of materials including the reuse of existing materials either on or off-site. This is to be facilitated through deconstruction where feasible and separation of waste streams on Site.
8. Opportunities for reuse have been explored in the first instance. However, it is expected that there will be some materials for which direct reuse is not possible, for example existing bricks where bonded with old cement mortar. Where this is the case, the Waste Hierarchy will be applied to ensure these materials are recycled where possible.

For all proposed new building:

1. The building is designed to have a very long life on this site. The school has no plans to relocate their main senior school campus.
2. It is foreseen that the new building functions will continue for a long period, however there is a wide range of new facilities included and their function over time may vary e.g.
   a. The Music Recital Room will be very long term / unlikely to change use
   b. The Music Department will be very long term / unlikely to change use
   c. The Cafeteria will be very long term / unlikely to change use
   d. The Drama Studios will be very long term / unlikely to change use [especially the main Studio 1 which is a “bleck box” rehearsal and performance space
   e. The Medical Centre will be very long term / unlikely to change use
   f. The Wellbeing Pastoral spaces will be long term but may change use
   g. The Lower School Hub spaces will be long term but may change use and arrangement or size of spaces
   h. The offices will be long term but may change use and arrangement or size of spaces
   i. The external play area / tennis courts / sports area will be very long term / unlikely to change use

3. Building Relocation - The buildings are not foreseen to have a short life on the current site, it is not therefore proposed to adopt a building relocation approach.
4. Component or Material reuse - The Proposed Development is primarily designed for longevity and the use of materials which can support high rates of recycling will be explored.
5. Adaptability - It is expected that the building could support adaptability within the educational-use type and will be explored further through detailed design. A frame structure is proposed to support flexibility for large areas of the project.
6. Flexibility - The spaces will be designed for flexibility in allowing these to be reconfigured to the school’s changing needs over the lifetime of the Proposed Development.
7. Replaceability - For elements which may have a shorter lifetime than the design life of the Proposed Development and for those which are more likely to be reconfigured or replaced in

use then disassembly has been considered to allow either reuse or effective separation of materials for recycling.

8. Disassembly - The Proposed Development is primarily designed for longevity and the principles of disassembly have been considered and materials will be specified with consideration of the end-of-life scenarios.
9. Longevity - Given that there are no significant changes anticipated within the lifetime of the Proposed Development, it is therefore sought that the scheme is built for longevity. This will be achieved through the use of robust and durable materials and creation of a scheme which is resilient to future scenarios.
10. Prefabrication – off-site construction will be explored at the detail stage, however it is envisaged that the main roof and first floor elements of rc concrete will be modular, prefabricated and formed off-site. In many areas the soffits of roof panels will be visible and the factory manufacture will ensure highest quality of finish.

End-of-life strategy

In line with Circular Economy principles, the main priority is to extend the lifetime of the buildings through careful design and specification through the measures listed above. The lifetime of different building elements and components will vary, so the end-of-life strategy will consider the process for maintenance, upgrade and replacement of the demountable or modular elements of construction.

The key opportunity areas which has been considered through the design stages in order to support the developing end-of-life strategy include the communication of the end-of-life strategies of elements as envisioned by the design team.

The Maintenance Manuals for the Proposed Development will include key information including manufacturer’s warranties, which will provide valuable information to the teams managing the development to reduce and manage waste demolition/strip-out waste in-use.

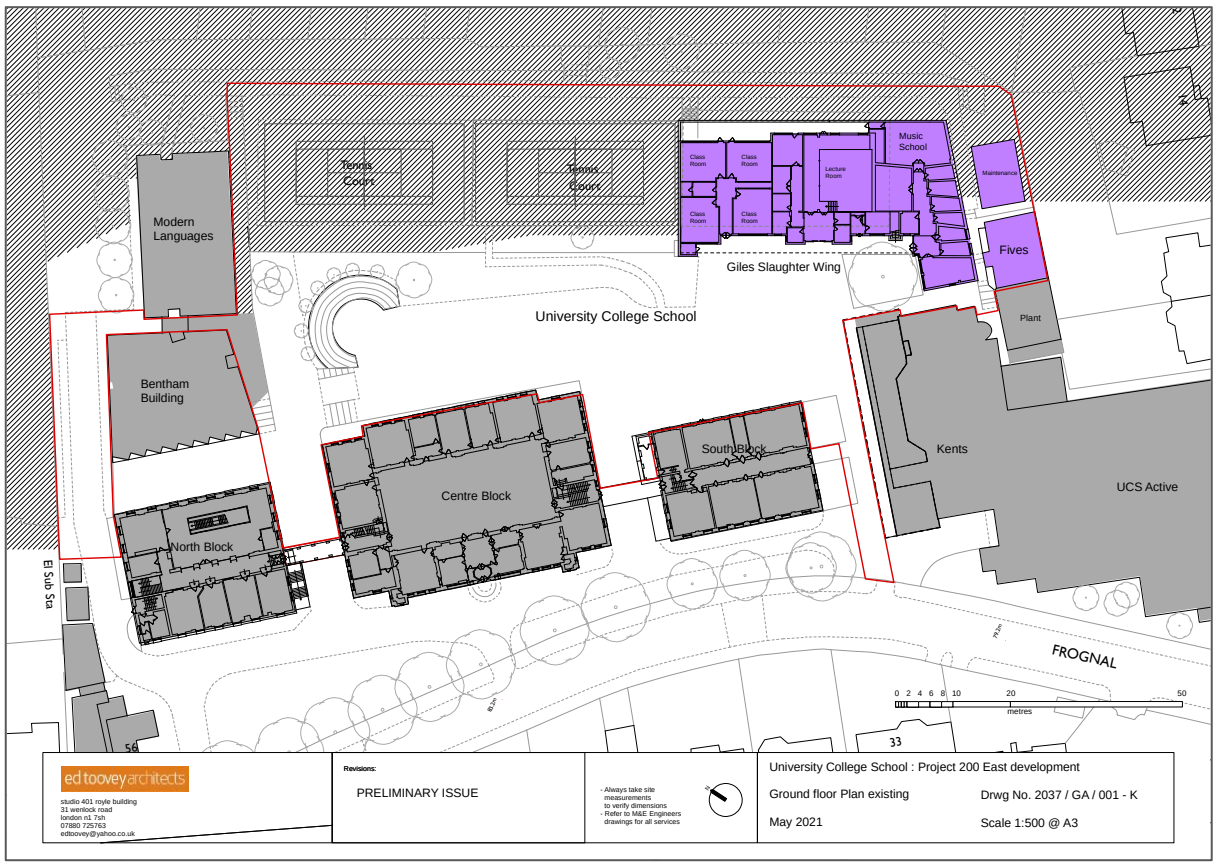
The inclusion of any relevant EPDs will be further explored through detailed design to provide information about the components and materials within these elements and the recommended end-of-life scenarios.

7. BUILDINGS ON THE PROJECT SITE

There are 3 existing buildings and 1 external structure on the proposed project site:

1. Giles Slaughter Wing [to be referred to as GS Wing]
2. 'Fives' building [now used for Drama teaching]
3. Maintenance Hut
4. External outdoor amphitheatre structure

A detailed description and appraisal of these buildings has been provided in the Design & Access Statement. On the existing plan below, the 3 buildings and amphitheatre are identified in purple. Survey and as existing plans and sections of the 3 buildings is included in the Application drawings.



1. Giles Slaughter Wing

General description

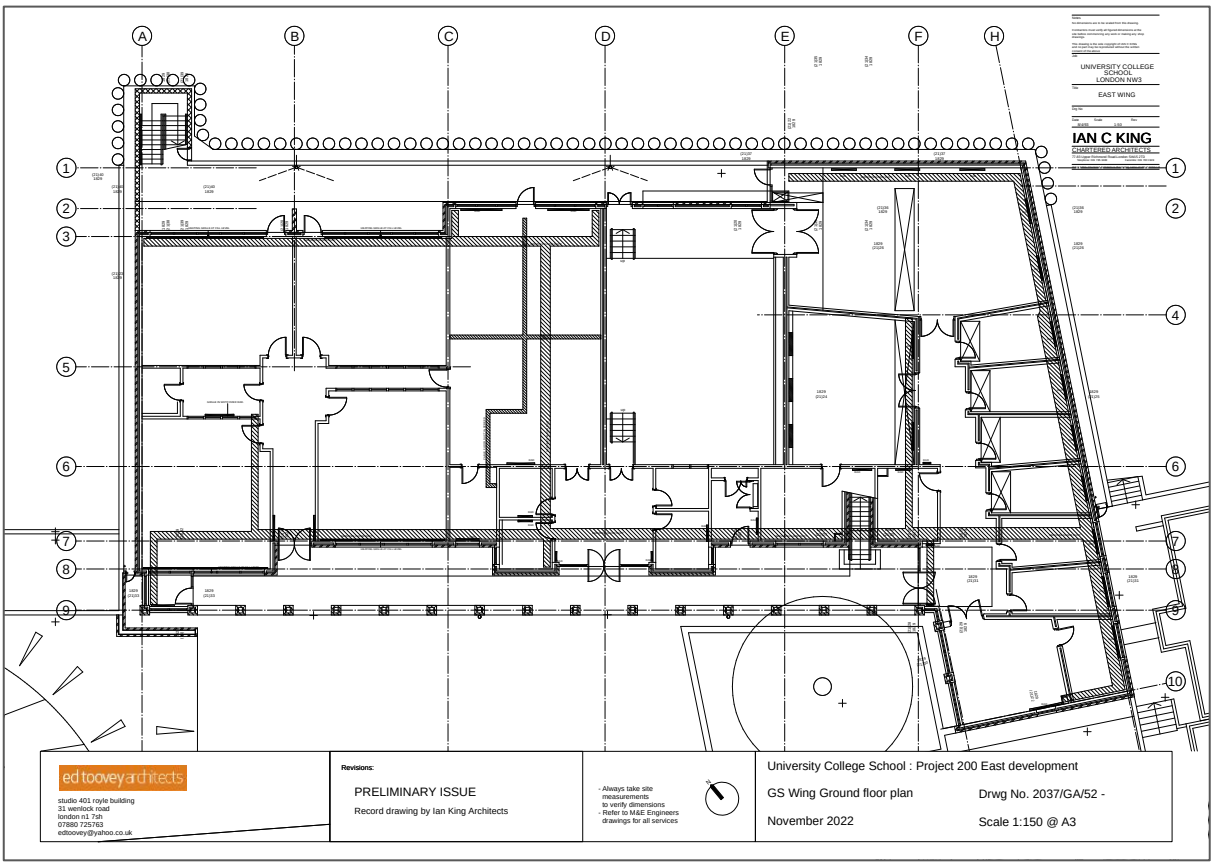
The Giles Slaughter Wing building, known as the GS Wing, was constructed in 1993-94 as part of a proposed masterplan for the whole of the eastern and southern side of the campus.

Detailed west elevation of GS Wing from record drawings

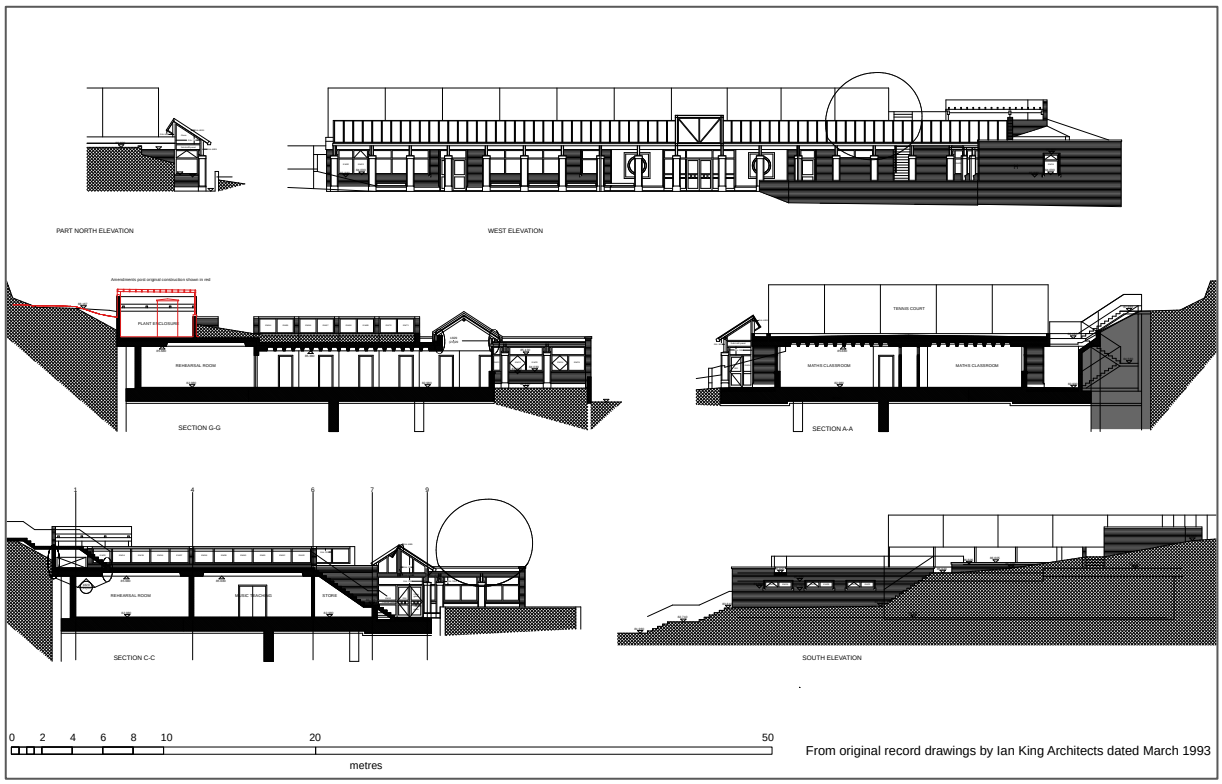
The building is single storey at ground level, with part of the roof used as a base for a raised tennis court at a similar level to the other 2 courts, and there is a rooftop mechanical ventilation plant area.

At the back of the building is a narrow lightwell gap to allow some daylight to the rooms from the east side, with a retaining wall to the garden terraces above which is also integral to the GS Wing building.

On the southern side, the rooftop is much more complex, with various upstands for rooflights and walls, while at the east end there is an open mechanical ventilation plant area, part screened by mesh and timber beams.



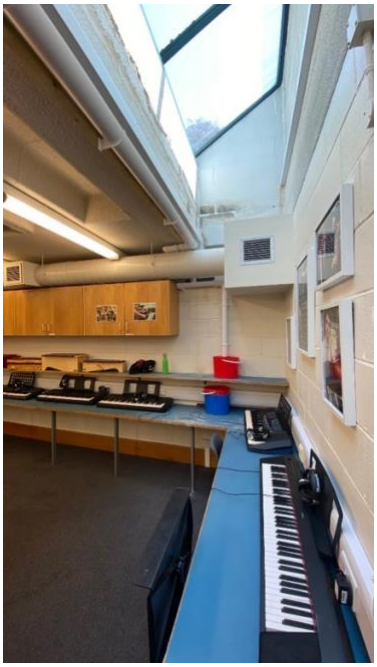
Detailed ground floor plan of GS Wing from record drawings



Detailed sections of GS Wing from record drawings – refer to final project drawings

The building accommodates the Music department, practice rooms and teaching rooms, with other teaching classrooms, offices and a lecture room with tiered seating and a sunken floor. The construction of the building is rc concrete floor and roof with load bearing masonry blockwork walls, and concrete piled retaining wall, and cavity masonry external walls, brick with cement mortar.

Unfortunately, the building has, for a number of years since its opening, suffered from serious problems with waterproofing of the fabric and inadequate building services, which have required significant and costly maintenance over the years, without solving the problems for the long term.



The GS Wing has a GIA approximate area of 926 m^2.

Appraisal:

1. The GS Wing was constructed in 1993 to a significantly lower standard of thermal insulation and airtightness. The interior is now dated and not in accord with modern teaching standards. It is of masonry cavity external wall construction with brick outer leaf, 50mm cavity [with minimal if any insulation] and solid blockwork inner leaf; ppc aluminium windows and doors and asphalt flat roof finishes. It has a deep concrete floor slab, part coffered roof slab and solid block load-bearing walls. There is a screened enclosure at rooftop level for plant and services equipment, which stands out particularly as lowering the standard of design – but the whole of the roofscape is of similarly functional but poor quality.

2. Since its construction the building has been bedevilled by construction problems, in particular water ingress from the roof and from tanked retaining walls, and condensation internally – it therefore has a history of maintenance repairs associated with lower quality build standards.

3. The design of the building allows for a tennis court at roof level, but not at the same height or alignment as the two courts built on the raised ground adjacent [and too low to coincide with a new development – it would bring down ceiling heights]. On the west side the main frontage is completed with a colonnade of masonry and steel columns, supporting a steel frame canopy structure that is fully glazed with clear patent glazing units. This frontage was conceived as part of a consistent masterplan design approach that would have occurred all along the east garden side of the play area and on the south side too, down as far as the sports centre [which was also part of the masterplan proposal]. Only the GS Wing and part of a sports changing block were built, and later developments chose to ignore the precedent and masterplan design in favour of buildings of more contemporary style and substance, such as the new UCS Active Sports Centre built in 2005-2006 to the design of ORMS Architects. The colonnade was considered to be overly dominant, repetitive and heavy, in a post-modern historic style that has dated poorly. Instead of the natural stone used on the original listed buildings, for example, the GS Wing frontage has precast concrete reconstituted stone, which does not have the same quality or weathering nature over time.

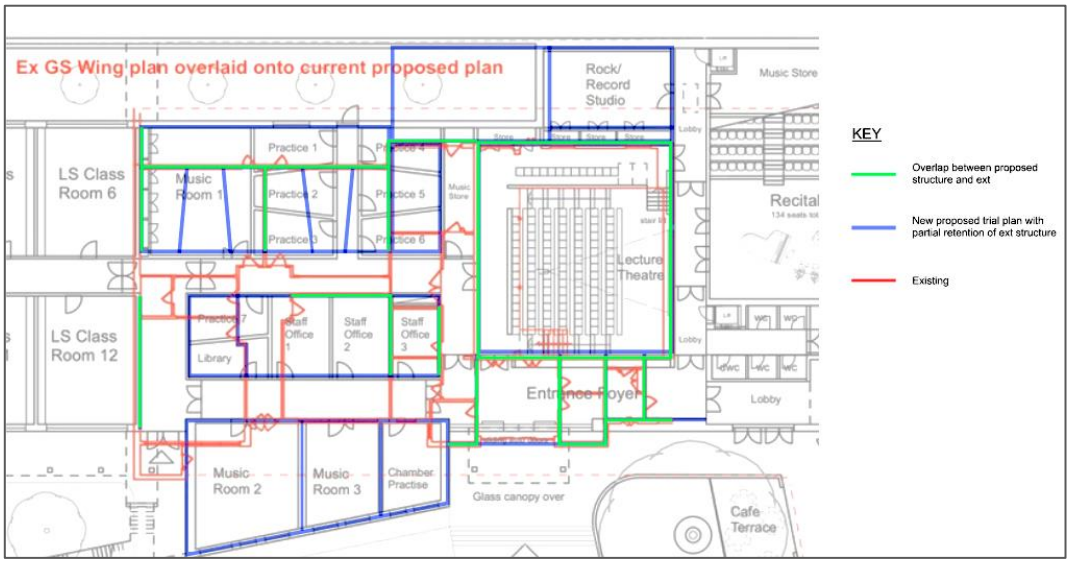
4. In the south area of the project site that is not under the tennis courts, there is the possibility to have larger volumes and heights of spaces as well as an additional level, to permit purpose-designed spaces that the School requires in their brief. These include the Drama Studios, Cafeteria and in particular the music Recital Room. The Recital Room needs to have excellent acoustics and a specified reverberation time that requires a volume of at least double height, and preferably 2.5 times height, in order to create the necessary volume.

5. The GS Wing building has a complex and stepping roof slab, with various openings for rooflights and services, and changes of level. The option was explored to add an additional flat rc slab on top of this to create a second level of accommodation – however this was considered to be not feasible, adding much more weight to the structure, and creates a void between the floors – it does not allow the tennis courts to be on the same level and ground floor room heights are still compromised. The existing roof slab also precludes the feasibility of a double height space such as is required in the brief.

6. The roof slab is of a coffered construction, deep overall, with intermediate flat beam lines, so the coffers determine where walls can be located visually and structurally. Points of support that are not on these beam lines will be extremely difficult to create and will visually cut across coffers. An appraisal by the structural engineers to adapt the layout

7. The GS Wing building has load-bearing masonry walls that are specific to the current layout. This means that the building is inherently inflexible and extremely difficult to alter plan layouts.

8. The current plan layout, although originally designed for a music department, does not fulfil the brief of the school or match modern music teaching requirements, for example practice rooms are generally too small, there is no rock/recording studio etc. The structural engineer has looked at the implications of changing layout and the modifications would be impractical due to disruption and number of interventions with new posts and beams below, with less than 50% of existing load-bearing walls retained and significant temporary works.



Sketch analysis of structural adaptation plan of GS Wing to meet project brief

9. Existing interior spaces in areas that do not have external windows are poorly ventilated. The building has history since construction of being poorly ventilated and of breakdowns in services. This may be due to the very tight plant space at the rear [east] side.

10. The building has reasonable external glazing to the west front, but on the east side there is only a very narrow lightwell gap that cannot be improved, as shown in photos on page 14. Rooms facing this lightwell have a very poor quality of daylight, and very poor outlook.

11. The GS Wing has a complex plan shape which further limits its flexibility for other uses and layouts [combined with inflexible layout of walls as[4].

12. The existing music rooms perform very badly for sound separation and absorption, and do not meet modern standards for schools as set out in BB 93. To alter the interiors to meet current standards would mean adding layers of dry-lining boarding and losing floor area, adding layers of acoustic absorption and losing room height. In both cases this will worsen the issues of flexibility and fitness for purpose to meet the School brief.

13. The GS Wing building has low floor FFL to soffit heights compared to modern standards, ranging from an exceptionally 2.4 metres in some areas to 2.7 metres in larger areas. This height is to concrete roof slab underside, so cannot be improved. The structural engineers did considere an option to lift the slab up and re-support but this was found to be impractical. By comparison the proposed new build areas of the new design have floor to soffit height of 3.45 metres – this being to allow for ventilation services and ductwork, other building services, as well as providing generous room heights. History has proven with urban development especially that buildings with generous soffit/ceiling heights are more flexible over time for change of use.

14. The GS Wing size and location is a hindrance to fully developing the available land on the school campus. The Frognal campus does not have very spare land available for development in the future, it is constrained for a school of this size, and external play and amenity areas must not be compromised – they are of equal value as the teaching spaces. To the south and east of the GS Wing there is an area of land of approximately 360 sqm that has been included in the project proposals, land that is currently effectively under-used and wasted. However access to this area for construction will be impractical if the GS Wing is retained in full – as there is no space for vehicles or plant between building and the existing nature “Queen’s “ Oak tree adjacent, which requires protection. With the upper superstructure – columns and roof slab – deconstructed, the deep ground slab can be used for construction vehicle and plant access and the problem no longer arises, so the whole scheme can use the land much more efficiently.

15. As well as the land referred to in [9], with the existing roof slab retained the first floor cannot practically be developed with an additional storey, so important elements of the brief cannot be accommodated and there would be no future feasible way to add later.

16. The proposed development is seen as a long term building for the site. The School was founded in 1830 and moved to this site into the new buildings in 1906, so it has a history of nearly 120 years on the Frognal campus. The School is committed to this location, and regards itself as serving a local community. This building proposed is seen as a facility that can last for a significant period of time comparable with the listed buildings on site, even if the uses internally change.

17. If the roof slab is maintained the tennis courts and play area cannot be all aligned together, either in plan or in level / section. This will limit the flexibility of the play space and complicate access, especially for disabled users. By contrast in the new proposals the courts / play area is all aligned on one level and the perimeters match all together.

18. With the existing roof slab this will limit the feasibility of providing upper level biodiverse planters that are proposed in the new building.

19. Approximately 50% of the existing retaining wall is proposed for re-use. The other 50% is on the south-east and south sides, and their retention inhibits development of the south and east area of spare land available on the campus – much as discussed in [9] above. The retaining wall line passes through the planned location of the Recital Room and the whole south block.

By removing this section of retaining wall the further land to the south is made available for development and the proposals are more efficient.

Proposal:

1. Retention of the whole of the ground floor 800mm deep rc concrete slab and integration into the new building.

2. Deconstruction of the superstructure of all masonry walls and roof slab, with associated elements.

3. Part [circa 50%] demolition of the existing retaining wall structure and part re-use of existing on the east side integrated into the new building.

4. Products of demolition to be recycled and re-used as per the Pre-Demolition Survey and Report.

5. The lecture theatre area has a higher headroom as the slab is sunken down into the ground compared to general floor level – the proposal is to locate the new lecture theatre in the same area so that it continues to benefit from the extra headroom.

2. 'Fives' Building [now used for Drama teaching]:

The Fives building is a purpose-built facility with spaces for 2 indoor courts, built on the southern boundary of the site, with its south wall falling a part of the boundary. It is of simple materials and very basic uninsulated construction, brick walls and concrete floor faced with timber cladding on the north side, and steel and timber shallow pitch roof.

Fives is a sport that has not been popular at UCS for many years, such that circa 4 years ago one of the courts was converted into a Drama teaching classroom, while the other space lies empty or for occasional storage. There has been no demand for fives for many years amongst pupils and the game is not on the curriculum, so UCS believe that space can be much better served for other uses.

There are windows on the front timber 'extension' only, none to the main volumes and ventilation is very limited, so it cannot be economically adapted for other uses. It is at the end of its useful life. As such its location at a key area of the site inhibits an integrated approach to the new development, so as part of the proposals it is intended to demolish the building.

The Fives building has a GIA approximate area of 109 m^2.

Appraisal:

1. The Fives building was constructed in the 1970's at a time when Fives was still a popular sport with boys. Interest in this sport has diminished very significantly, particularly when the School went part Co-ed, with girls joining the school in VI form in 2009. Now there is no interest or use by pupils.

2. Due to this reduction in use, one of the courts has been converted into a temporary Drama Studio to supplement the teaching facilities in the adjacent Kents building, where the main Drama Lund theatre is located. However it is a poor space for teaching and well below the general standard of accommodation at UCS – it is neither accessible to wheelchair users, nor compliant with current standards for teaching.

3. The building was constructed with its south wall on the boundary [its brick wall forming the boundary wall] and next to the original plantroom building. It is of single skin brick and block construction with timber cladding on the north side, uninsulated, with a lightweight steel and timber roof and felt coverings. Internally the finishes are simple, painted masonry.

4. Services are very simple and cannot be re-used.

5. There is no inclusive accessibility to the building as it is set at a high level compared to the south path – and to provide this would, be a considerable and expensive challenge.

6. Although it has been used temporarily for drama as noted because severe shortage in teaching space has necessitated a radical approach, the building is not flexible or adaptable in practical terms, and is located at a higher ground level compared to the GS Wing so cannot coordinate with it – access is via a narrow set of back steps.

7. In terms of the site, the building blocks access to the south and east areas in terms of making an efficient development, and prevents achieving the area and brief that the school requires, particularly with regard to Drama and Cafeteria spaces

8. The Fives building, being on the boundary, does impact on the amenity of the rear garden to no.18 Arkwright Road by its physical bulk and massing – and there is an opportunity to improve the relationship between UCS buildings and the garden by the proposed new development, which is set back further from the south boundary at the first floor.

Proposal:

1. Full deconstruction of the superstructure of most masonry walls and all the roof, ground floor slab and decks, with associated elements.

2. If technically feasible, part external masonry brick wall on boundary may be retained – however this will be subject to detailed design to design validation.

3. Products of demolition to be recycled and re-used as per the Pre-Demolition Survey and Report.

3. Maintenance Hut:

The maintenance hut is a simple timber frame and timber boarded single storey building in the south-east corner of the School site. It is used for maintenance and storage and is essentially a temporary garden shed building on a concrete base slab.

As such its location at a key area of the site inhibits an integrated approach to the new development, so as part of the proposals it is intended to demolish the building.

The Maintenance Hut has a GIA approximate area of 85 m^2.

Appraisal:

1. The Maintenance hut is a prefabricated "garden shed" type of construction, of timber cladding and structure with no insulation, not intended for the long term. It can realistically be dismantled and re-erected on another site. It is not of suitable construction for a teaching building in any sense

2. Its location prevents efficient use of the south land area, and will obstruct development of the double height Recital Room, which is one of the most important components of the brief.

3. There is no inclusive accessibility to the building as it is set at a high level compared to the south path – and to provide this would be a considerable and expensive challenge.

Proposal:

1. Full deconstruction of the building and all associated elements.

2. Products of demolition to be recycled and re-used as per the Pre-Demolition Survey and Audit. The aim is for the building to be dismantled and re-erected elsewhere [for example as a large garden or storage shed] and the team have explored opportunities in the locality.

3. There is no inclusive accessibility around the structure and to provide this would be a considerable and expensive challenge.

4. External amphitheatre embankment tiered seating:

The external semi-circular form of tiered steps that form 5 seating step levels was constructed with the GS Wing in the 1990's. The intent was clearly of an outdoor 'amphitheatre' for performance, but it has never adequately served this purpose, the shape has never been integrated well into the overall design of landscaping and borders, and it is not used as a teaching space.

Visually it has a poor appearance, the reconstituted stone has weathered badly. The Amphitheatre is all external and has a zero GIA. Externally it occupies an area of approximately 127 m^2 at an important area of the site, which can be much better utilised.

Appraisal:

1. The amphitheatre area is a stepped retaining construction that creates a near semi-circular seating area. The precedent historically is the Greek outdoor theatre, but this one is constructed in rc concrete and reconstituted stone concrete paving and steps, and its location has no relationship to the setting or listed buildings. It was part of the “classically inspired” post-modern Masterplan project that included the GS Wing.

2. Although intended as an outdoor performance area, it has seldom been used that way and is now only used for casual seating at play and break time.

3. It occupies a large area that can be put to much better for play, landscaping and external social spaces.

Proposal:

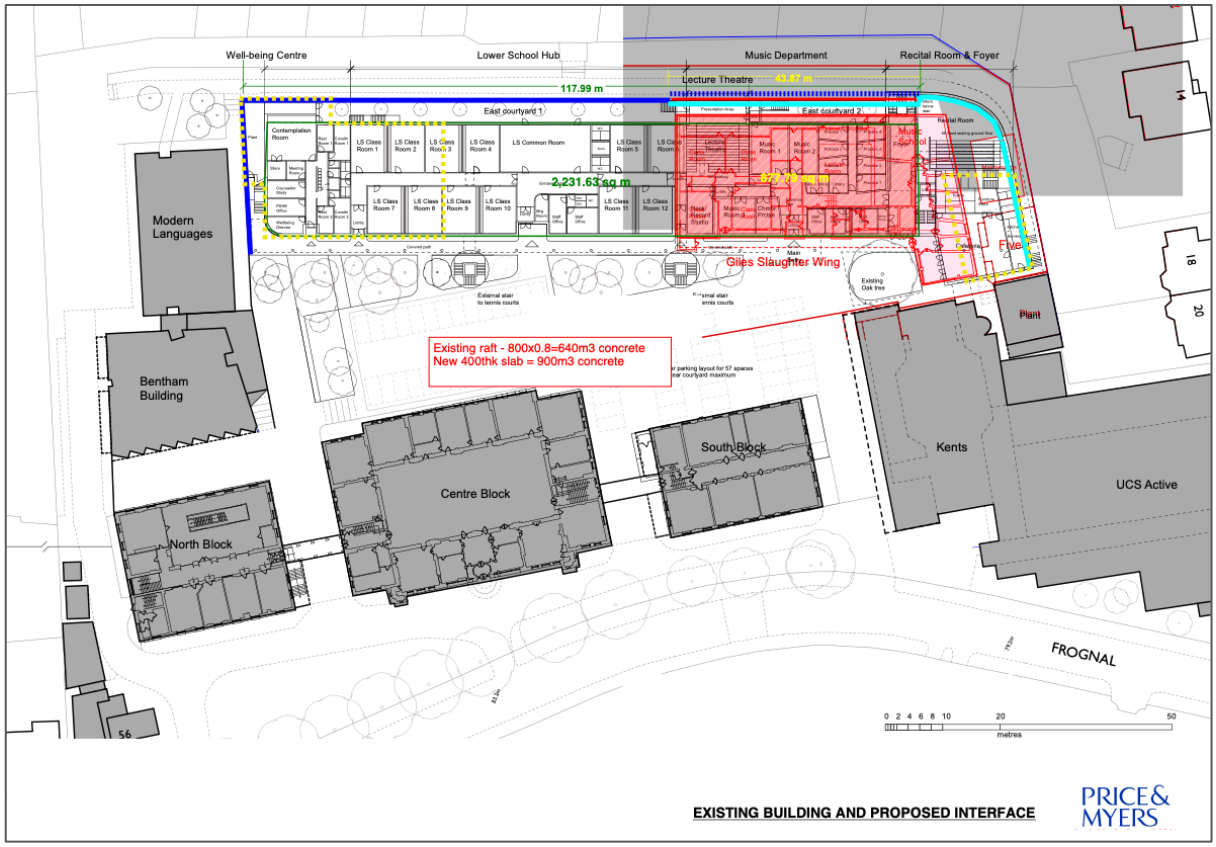
1. Full deconstruction of the structure and all associated elements.

2. Products of demolition to be recycled and re-used as per the Pre-Demolition Survey and Audit.

9. STRUCTURAL ASSESSMENT [Price & Myers Consulting Engineers]

The structure of the existing GS Wing superstructure is apparent and showing signs of wear, despite still being structurally sound. From visual inspection, the building consists of mainly one-way spanning trough concrete roofs using T Forms and employs structural blockwork for internal load-bearing walls, which limit the adaptability and flexibility of the existing building significantly and prevents the capacity of designing a building that is futureproof.

As noted in the sketch plan below, to meet the requirements of the new classrooms and spaces for the school, changes to room layouts are not conceivable with the current GS Wing floor plan layout.



10. MECHANICAL & ELECTRICAL SERVICES ASSESSMENT [Max Fordham LLP Consultants]

Existing Giles Slaughter (GS Wing) Building

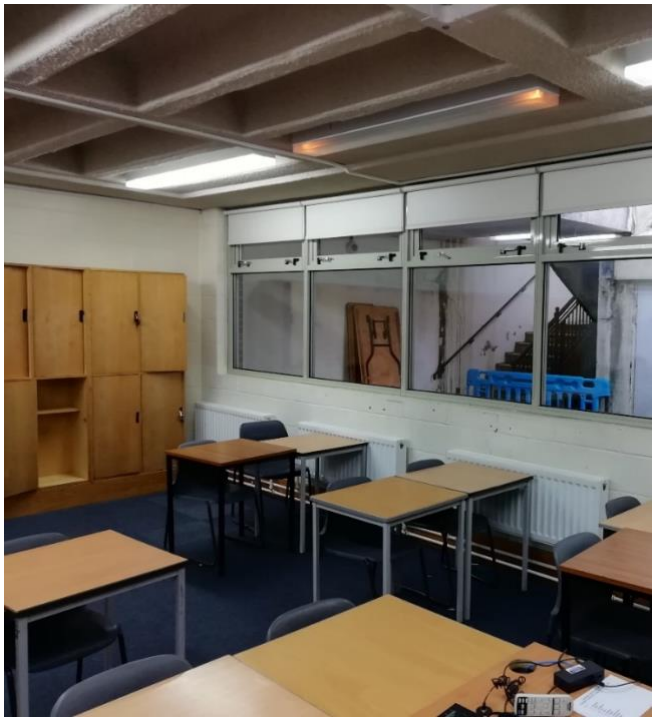
Daylight on East façade not well utilised with large overhangs and small windows limiting the building's exposure to direct natural light.

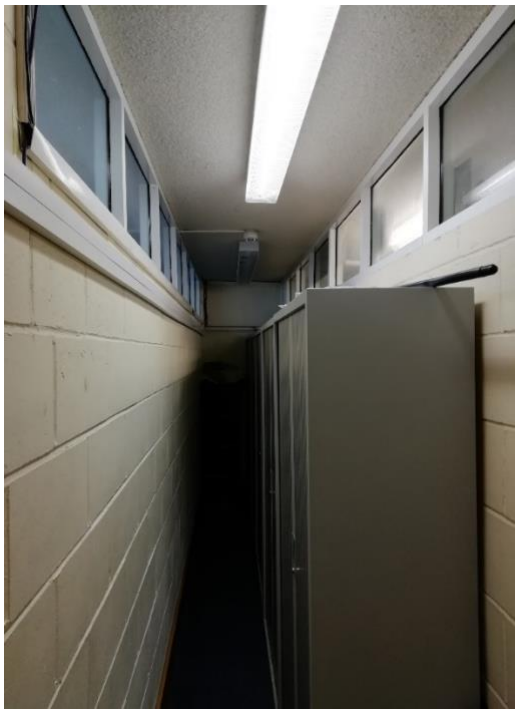
Existing main plant, equipment, and services generally reached end of serviceable life and requiring replacement or extensive refurbishment.

The existing building has inefficient thermal envelope with thermal bridging and poor air-tightness.

There are signs of damp and potential moisture ingress / damage on internal walls.

Stuffy conditions identified in certain rooms, with poor or non-existent ventilation provision (e.g. practice rooms and studios). This would be very difficult to remedy through retrofitting ventilation systems due to the existing low floor to ceiling (slab to soffit) height.





Existing GS building – poor daylight (and scenery) to classrooms on west façade

Many music rooms have limited acoustic performance – unsuitable for many of the music and practice rooms. Again, difficult to enhance due to the structural constraints.

The building has low floor to ceiling heights dictated by existing concrete structure, which means limited options for fit-out and refurbishment with new ventilation and other services.

Other existing buildings impacted by the proposed development:

Maintenance shed

This is a thermally inefficient building for occupation, high energy wastage. It has a rudimentary wooden construction with no thermal envelope and electric heater running almost continuously during winter months (when the shed is in use).

Fives court

This building has aging services throughout, unsuitable for further adaptation for alternative functions.

Maintenance shed

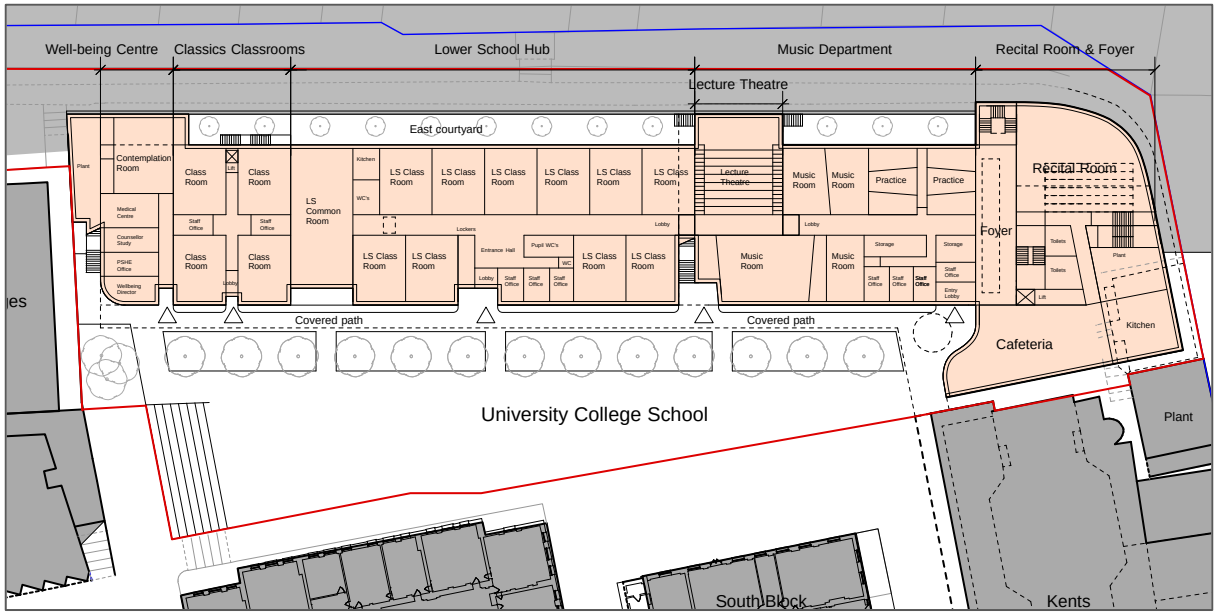
Fives Court Building

11. HISTORY OF DESIGN DEVELOPMENT

The original feasibility study design was started in 2020 prior to the London Plan 2022. At that stage the Giles Slaughter Wing was seen as a wholly negative influence on the site and as a building that had been a poor addition to the UCS Estate, principally due to a long history of problematic maintenance issues since its construction in early 1990's, relating primarily to water ingress from roof and basement tanking walls, and to mechanical ventilation services, whose repeated failure resulted in an unacceptable interior environment in several interior spaces.

1. Full demolition of GS Wing, GS Wing retaining wall, Fives and Maintenance Hut

The initial proposals were therefore for a new building on the whole site including new retaining wall [required in order to bring natural daylight and ventilation to both east and west sides of the building] – the three buildings on the site were proposed to be demolished in full. The proposed building had a basement level for plantrooms in addition to the main ground and first floor levels.



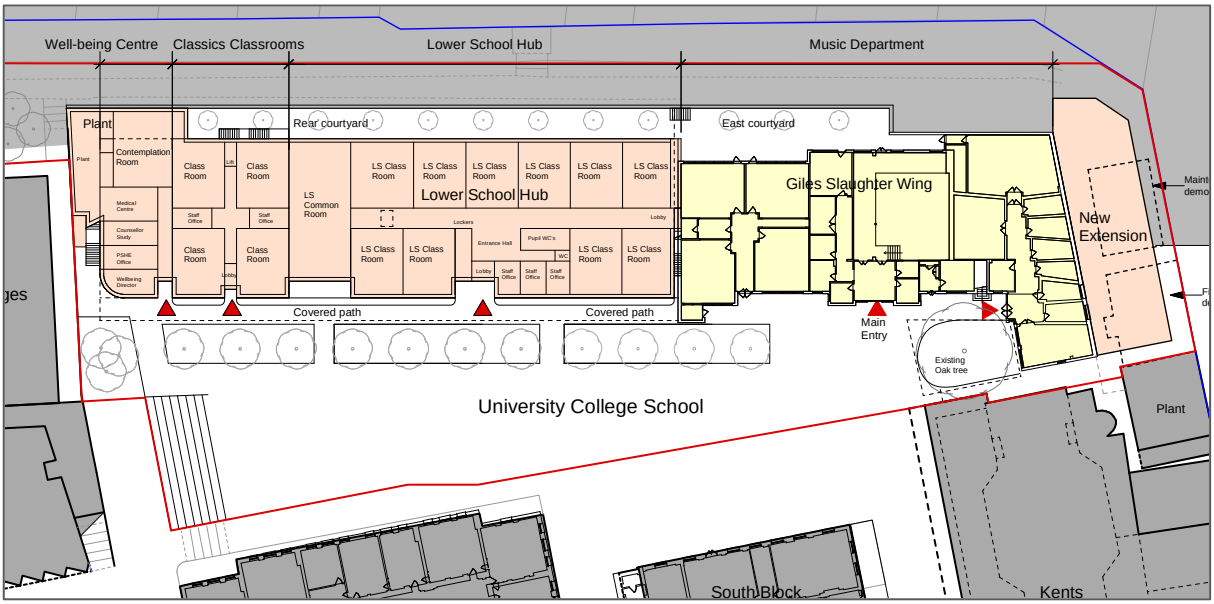
Proposed ground floor plan at beginning of first PreApp stage, full demolition of GS Wing

At the first Pre-Application consultation with Camden Planning Department in 2021 the plans were discussed with Planning Officers including the principles of demolition; "*In line with policy CC1 and CC2, any proposed demolition has to be supported by strong justification in the form of a Condition and Feasibility Study to appreciate if the existing building has potential to be reused, followed by a Whole Life Carbon Assessment.*"

A preliminary Whole Life Carbon assessment by Eight Associates was submitted, although this was not at planning application stage detail level. The ground floor plan was also amended to retain the existing Oak tree near the main entrance to Music Department, for the benefit of landscaping, ecology and biodiversity, which also impacted negatively on the viability of the retention plans.

Feasibility studies were then carried out to analyse the possibility of re-using existing buildings in whole or in part.

2. Full retention GS Wing – full demolition of GS Wing retaining wall, Fives, Maintenance Hut

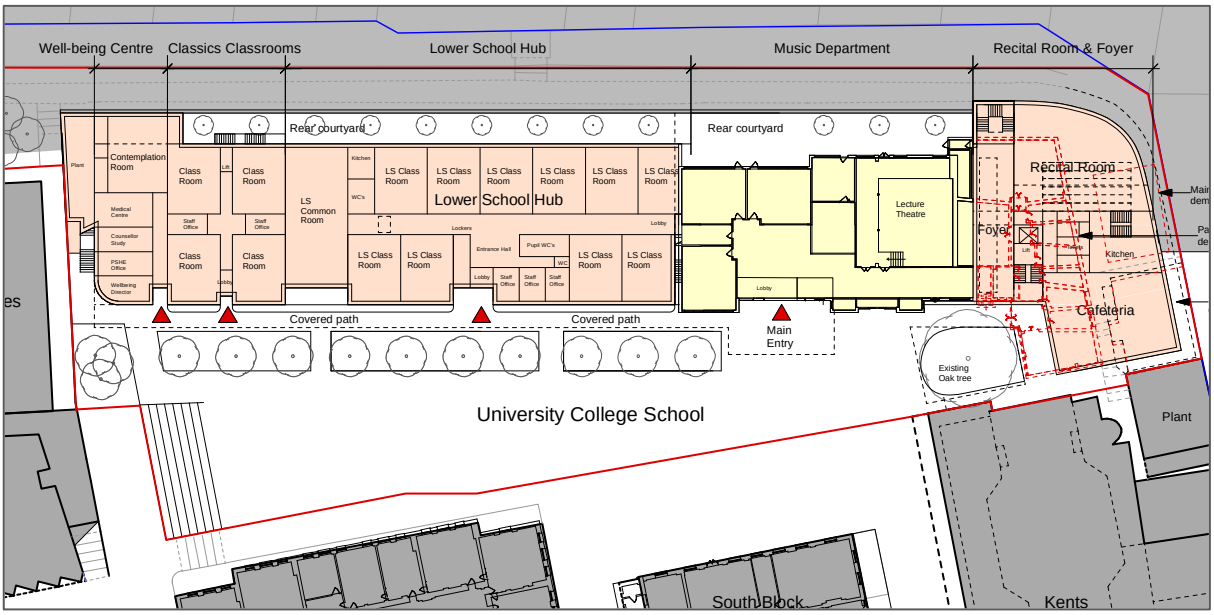


Feasibility study ground floor plan at first PreApp stage – exploring retention of <u>whole</u> GS Wing

It was noted that this solution was not viable and could not meet the school brief for reasons set out under appraisal of GS Wing [see earlier]

- the area on the south side [right] could not be accessed from the courtyard between GS Wing and Oak tree and so was not buildable, with significant loss of footprint area of circa 360 m^2
- issues with existing building already noted including low soffit heights, inflexible structure of load-bearing walls, complex roof form and levels
- significant and important parts of the school brief could not be built including the music Recital Room, Cafeteria and Drama Studios

3. Partial retention of GS Wing – partial demolition of GS Wing, full demolition of GS Wing retaining wall, Fives and Maintenance Hut

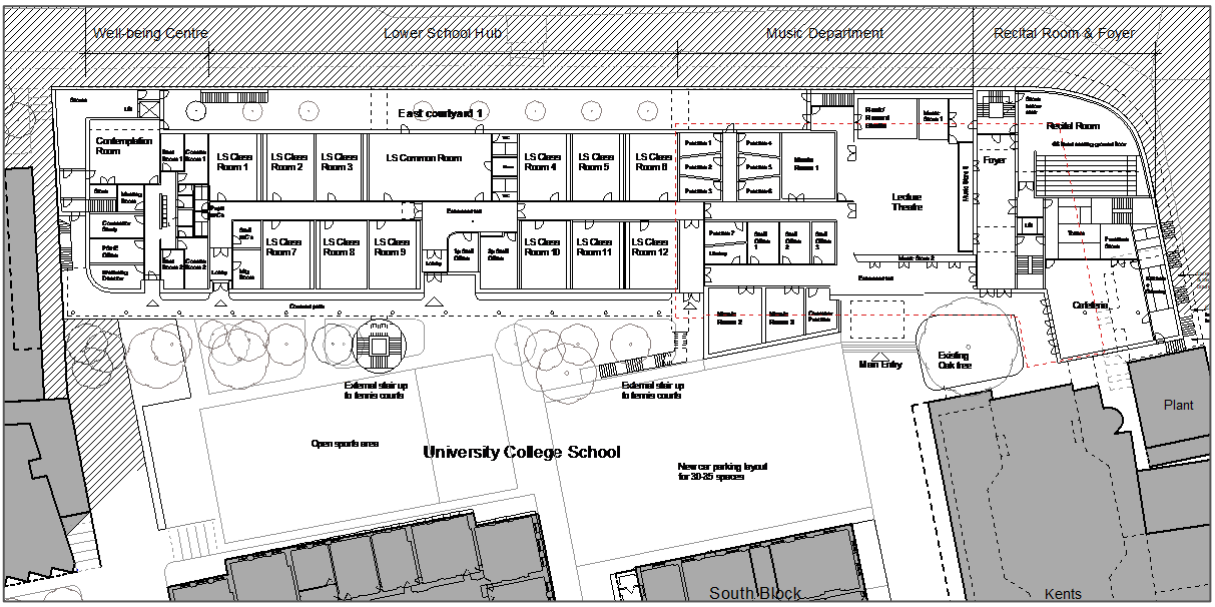


Feasibility study ground floor plan at first PreApp stage – exploring retention of partial GS Wing

It was noted that this solution was not viable and could not meet the school brief for reasons set out under appraisal of GS Wing [see earlier]

- the area on the south side [right] could still not be accessed from the courtyard between GS Wing and Oak tree and so was not buildable, with significant loss of a much larger footprint area of circa 644 m^2 per floor
- issues with existing building already noted including low soffit heights, inflexible structure of load-bearing walls, complex roof form and levels
- significant and important parts of the school brief could not be built including the music Recital Room, Cafeteria and Drama Studios

4. Full retention of GS Wing deep ground slab - partial demolition of GS Wing [superstructure only], full demolition of GS Wing retaining wall, Fives and Maintenance Hut

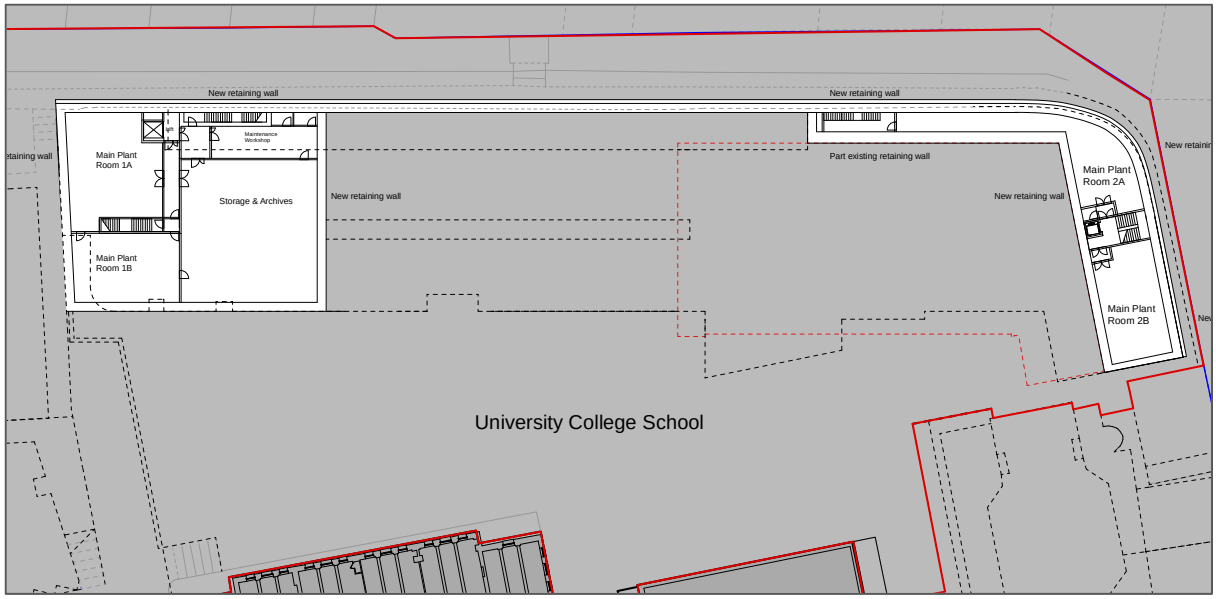


Feasibility study ground floor plan after first PreApp stage – exploring retention of partial GS Wing

It was noted that this solution was viable and could meet the school brief for reasons set out under appraisal of GS Wing [see earlier]

- the area on the south side [right] could be accessed and was integrated into whole scheme
- with all construction above slab level being new, all roof levels, floor to soffit heights and spatial alignments could all be integrated
- all significant and important parts of the school brief could be built including the music Recital Room, Cafeteria and Drama Studios

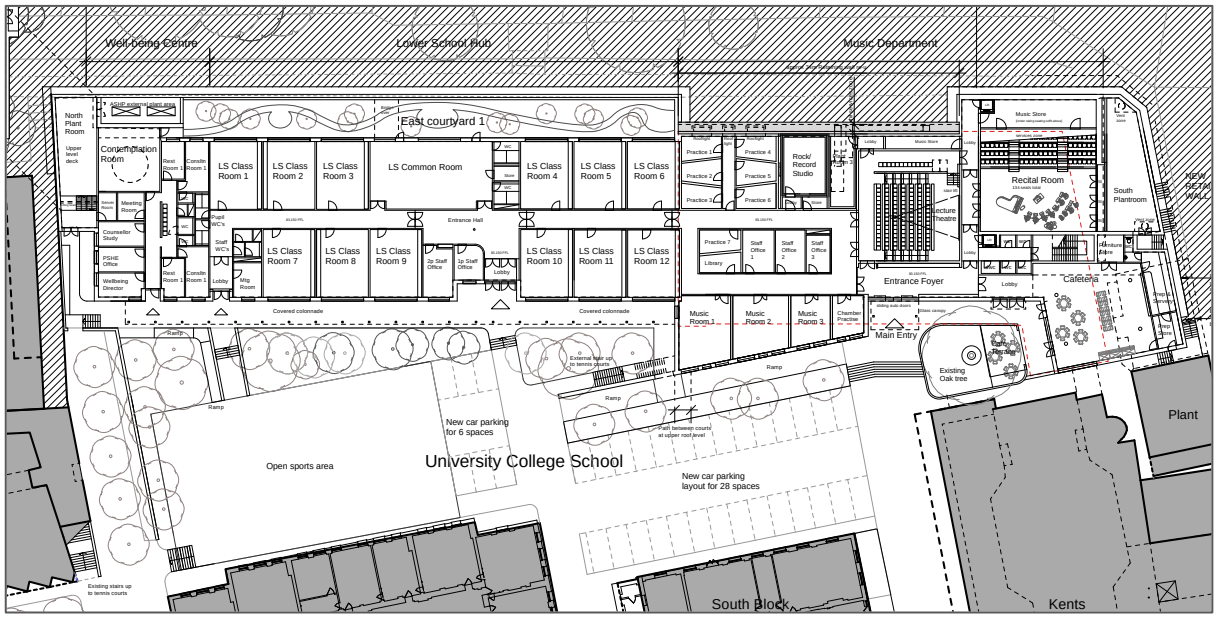
This scheme still included a larger area of basement, as plan below, that included 2 plantrooms [at north and south ends of the building] as well as storage and archive spaces.



Basement level floor plan after first PreApp stage – with plantrooms and storage / archives space

It was noted in the analysis of the scheme that the concrete basement would also significantly increase the Carbon emissions of the project, so the viability of this was explored to see if full basement level space could be omitted and thereby improve the sustainability of the scheme.

5. Partial retention of GS Wing & retaining wall – partial demolition of GS Wing and retaining wall, full demolition of Fives and Maintenance Hut



Current ground floor plan at PPA stage – refer to project drawings for all details

- This scheme has all the viability for the previous design [4] but with the additional benefit that 50% of the existing GS Wing retaining wall is re-used.

- The proposal reuses as much of the existing GS Wing structure as possible while meeting the UCS requirements for brief and areas, and taking account of the poor quality and very limited viability of the existing building for adaptation.
- In addition the full basement level has been omitted, with a consequent improvement in the Carbon emissions of the design.
- The re-use of the ground floor rc slab leads to saving of: approximately 250,000 kgCO2e
- The re-use of circa 50% east retaining wall leads to saving of: approximately 130,000 kgCO2e [these values takes into account Cradle to Site stages only [according to EC2] regarding the building life cycle stage]
- This scheme will also save about 600 skip trips and associated construction vehicle movements, compared to the requirement if the elements were all to be demolished – with a benefit to impact on local roads and the community
- Lifecycle carbon assessment and option analysis is being carried out in line with the Local Plan recommendation
- A Pre-demolition Audit is being carried out for elements to be demolished, and will inform Circular Economy strategy
- The new structure and fabric of the building is being developed for end-of-life deconstruction and re-use

12. CURRENT DESIGN PROPOSALS

The proposed educational building development is designed to improve the existing School facilities, provide additional flexibility in relation to today's modern curriculum and replace buildings which have reached the end of their useful life. The proposals are therefore for improvement and re-organisation, not enlargement of pupil numbers. The masterplan proposals will also enhance the accessibility of the buildings and enable the School to better respond to the climate emergency by improving the performance and resilience of the estate as far as it is possible.

The new building site will be created by the partial deconstruction of the existing Giles Slaughter building [known as the "GS Wing"] at the south end of the site, as well as full demolition of the Fives courts building and maintenance hut.

Three existing outdoor tennis courts, 2 built on raised ground and 1 on the roof of the GS Wing, will be replaced with new.

The GS Wing deep rc ground floor slab and footings is to be retained in full, with additional new area ground slabs connected in to extend the floorplate, while approximately 50% of the existing ground retaining wall structure, on the east side of the scheme, will also be re-used and connected in to new retaining walls.

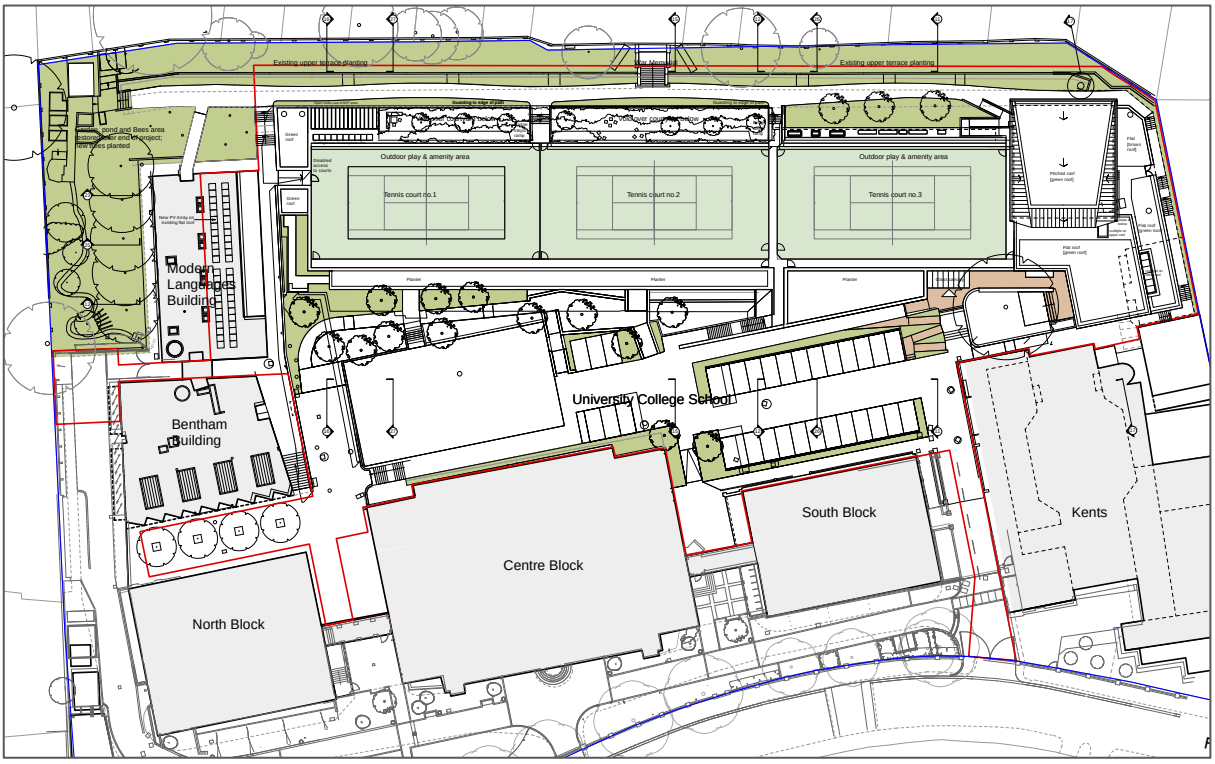
The new development will extend along the eastern side of the School rear amenity, play and car parking area, connecting the Modern languages building to the north with the Kents building to the south, and completing the enclosure of the main rear courtyard.

The proposed building will comprise outstanding first-class educational facilities for:

- New Music School including specialist Music Recital Room
- Cafeteria catering space
- Drama Studios
- Hub for Lower School classrooms including shared Common Room
- Lecture Theatre
- Wellbeing Centre with space for contemplation
- Medical facilities
- Ancillary accommodation

The main part of the proposals will be a single storey building at ground level, with three tennis courts on the roof, replacing the existing courts. At the south end of the site, beyond the tennis courts, the building rises to 2-storey above ground, including a special double-height space for the new Recital Room. There are proposed to be interior plantrooms for building and ancillary services, so that all main plant is concealed.

The proposals will also extend and enhance landscaping, biodiversity and trees at the Frognal site, replacing smaller areas of informal planting. This includes a large green extensive planted roof on the new building, a continuous first floor deep planter at the west front of the tennis courts terrace, and landscaped gardens with new trees along the main west frontage.



Roof and landscape plan of proposals – refer to project application drawings for all detail

Latest design development benefits include:

1. is considered as a long term building and will be detailed accordingly, with robust long-lasting materials and products and careful conservative detailing.

2. will be very sustainable, with a very high thermal performance, standard of airtightness and construction quality.

3. is designed mainly as a frame construction so will allow great flexibility and adaptability of the plan layout, in particular for the single storey section.

4. Will have generous floor to soffit heights giving long term flexibility for adaptation and integration of building services

5. Will have generous windows and louvres, for natural daylight and ventilation where feasible. Other areas will be mechanically ventilated with low energy plant and heat recovery.

The Design + Access Statement issued with the Application contains significant further detail on the proposed design including background, analysis, concept, materials, brief, existing buildings etc.

Refer to the Application drawings and illustrations for all details.

13. SUMMARY

The issue of existing buildings retention or demolition, in full or in part, has been very carefully considered as part of the design development, including listening to guidance from Camden Planning and Sustainability officers during the initial PreApp submission and the later Planning Performance Agreement submission. A number of key factors informed the final proposals:

- The School has a very long term commitment to the Frognal Senior School site, so this development is designed with a very long term future in mind.

- The proposal project site is one of the last areas of land within the constrained School campus available for significant development, so it is important that the new building uses the whole site effectively for the long-term future, including up to boundaries where currently some land makes no contribution to School operations or ecology.

- The new project will work best if it is integrated and coordinated as a single holistic development, for accessibility and inclusivity, for future-proofing and for the setting of the listed buildings.

- The new project is targeting BREEAM “Excellent” and Stage 2 design work has been carried out, including optioneering on products and materials.

- All 3 existing buildings are of poor construction with significant maintenance and performance issues that compromise their long-term viability.

- The fives and maintenance buildings are not inclusive or accessible, and providing this would be extremely difficult and challenging.

- The Giles Slaughter building has significant constraints that limit its future use and reduce its value including: low floor to soffit heights that make new ventilation systems unviable, a rigid structure of load-bearing blockwork walls that severely limit flexibility for change, a coffered rc roof slab with defined downstand and upstand beams that further limits adaptation, poorly constructed waterproofing of the fabric and a failed mechanical ventilation system. These particular factors are combined with the typical performance deficit of a building constructed in the early 1990’s in terms of modern thermal standards.

- Having started with a concept to demolish all 3 relevant buildings in 2019-20, after further design development and review of the London Plan 2020, consultations with Camden and review with a wider team of consultants including sustainability experts, the project design has evolved to retain key elements of the GS Wing where they provide a meaningful contribution.

- A detailed analysis of the GS Wing and the new design showed that an important saving in Carbon emissions can be made by retaining the deep ground floor rc concrete slab, which was found to be circa 800mm thick, as well as approximately 50% section of the east retaining wall and associated contiguous piling. The combined saving calculated at design stage of approximately 370,00 kgCO2e, as well as a saving of circa 600 skip trips if these elements were demolished, was considered a very worthwhile carbon reduction contribution

despite the added complexity compared to complete new build. The final analysis has been included in the project sustainability reports.

- Combined with retained elements, the new buildings for the long-term future will be flexible and adaptable
- Only with the proposed full and partial demolitions can the project provide in full the spaces required in the School brief, in particular the larger spaces such as the Recital Room, Cafeteria and Drama Studio.
- The new proposals can integrate with the retained elements successfully.
- The new proposals provide rooftop deep planting areas not achievable with the existing building.
- The proposals significantly enhance the facilities, ecology, biodiversity and sustainability characteristics of the School estate.

It is considered therefore that these full and partial demolition proposals, which have developed through consultations and options studies to find the best design and low Whole Life Carbon approach, meet the requirements of Camden Policy and the London Plan.