Appendix 7

Conisbee - Structural and Civil Engineers

1.0 INTRODUCTION

Conisbee has been appointed by Cartwright Pickard Architects to provide Civil & Structural Engineering design services for the proposed development of Cambridge Civic Quarter (CCQ) which includes the Guildhall, Corn Exchange, No.3 Parson's Court, the Market Square, and associated public realm external areas around the Market Square, Peas Hill and Guildhall Street.

1.1 Brief

The brief is to redevelop the Guildhall building for Council and Commercial office use, and to provide a basement level home for the Museum of Cambridge.

The Corn Exchange is to be developed to improve access, auditorium seating, hospitality and amenity functions.

Both the Guildhall and Corn Exchange buildings will be subject to fabric improvements relating to energy efficiency and sustainability. New mechanical, electrical and public health services will be required to suit the occupation and energy strategy.

The Market Square is to be redeveloped to enhance access, visual appeal, vending and retail opportunities. A new basement housing cycle parking and public WCs is also being considered, together with a new building within the square itself accommodating cycle parking and community / stallholder spaces.

1.2 The Aims of the Report

The aim of this report is to support the development of the Project Brief, Project Budget, Project Programme and Risk Assessment. This will also contribute to the Architect's presentation of options to the Client.

This report covers the work undertaken during RIBA Stage 2: Concept Design. It describes site constraints, Civil and Structural Engineering design risks, survey requirements and work to be undertaken in the following stages.

The aims of the report are as follows:

- to confirm our understanding of the brief and scope of the works.
- to outline the constraints of the site on the proposed engineering works.
- to present the design options explored during the Stage 2 design phase.
- to highlight the principal engineering design issues.
- to identify issues that will require further investigation and assessment during the next design stages.

This report should be read in conjunction with the reports, drawings and specifications from all other consultants associated with the development.

Cambridge Civic Quarter

Structural & Civil Stage 2 Design Report

Project No: 240070
Report No: 240070-CON-XX-XX-T-S-9002
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Date: 01 November 2024
Status: Preliminary
Version: P04

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Table of Contents

2.0 SITE INFORMATION

2.1 Site Location

The Guildhall is located in central Cambridge facing north onto the Market Square (Market Hill), between Guildhall Street on the east, Peas Hill on the west, and Wheeler Street to the south. The Guildhall is attached to No.2 Wheeler Street which is a separate commercial unit located adjacent the south end of the Large Room function hall of the Guildhall

The Market Square is a fully paved area bounded by Market Hill on the east, south and west sides, and by St Mary's St to the north. Great St Mary's Church is located immediately to the west of the Market Square across Market Hill.

The Corn Exchange faces onto Guildhall Street to the north, between Corn Exchange Street on the east and Parsons Court on the west. The south end of the Corn Exchange adjoins the University of Cambridge's New Museums Site buildings.

Aerial photo showing location of proposed CCQ development

2.2 Geology and Hydrogeology

British Geological Survey (BGS) mapping indicates that the site is underlain by superficial River Terrace Deposits (sand and gravel, locally with lenses of silt, clay or peat). The bedrock geology is indicated as Gault Formation (pale to dark grey or blue-grey clay or mudstone, glauconitic in part, with a sandy base).

Given the historic repeated development of the Site is it considered likely that a thickness of made ground will be encountered in all areas of the CCQ. Nearby BGS borehole records to the east of the Site indicate 1.5-3.0m of made ground, overlying sands and gravels to a depth of around 5-6m below ground level, overlying a stiff grey clay. This geology is consistent with the BGS mapping.

As is typical of the ground conditions across this part of Cambridge, groundwater was encountered at relatively shallow depth within the River Terrace Deposits, above the surface of the Gault Clay Formation.

Aquifer designation mapping for the area show that the Gault Formation bedrock is classified as Unproductive strata. The River Terrace Deposits are classified as a Secondary (A) Aquifer.

The site is not located within a Source Protection zone for groundwater abstraction.

2.3 Flood risk

The site is located within Environment Agency (EA) Flood Zone 1, comprising land assessed as having a less than 0.1% annual probability of river flooding. Tidal flooding is not relevant to this site. Refer to Figure 2.1 below.

EA flood map for planning

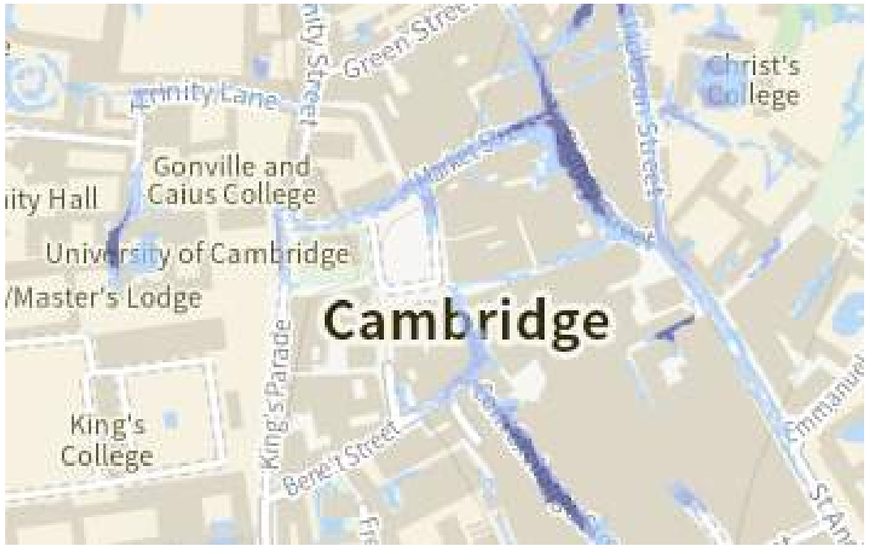
The EA Flood Map for Surface Water (FMfSW, 2019) indicates that areas of the site around Market Street, Guildhall Street and Corn Exchange Street are at medium and low risk of surface water flooding. The rest of the site is identified as being at very low risk (less than 0.1% each year) of surface water flooding.

It should be noted that the surface water flood maps are strategic in nature and not site-specific, and consequently these maps cannot definitively show that an area of land or property is, or is not, at risk of flooding.

The model picks up lower lying areas in the ground surface where flooding might occur and identifies the associated potential overland flood flow paths. The EA model typically does not account for flow within sewers and the linked nature of surface water and sewer flooding during a severe rainfall.

Existing ground floor levels in the Guildhall and Corn Exchange buildings are generally set above adjacent levels in Guildhall Street, Wheeler Street and Corn Exchange Street, reducing the likelihood of any surface water flooding in these areas affecting the buildings.

It will be necessary to consider this potential risk of flooding when developing the design for the Market Square basement, potentially including raised threshold levels at entrances to the basement.



EA risk of flooding from surface water mapping

These issues will be assessed further as part of a site-specific Flood Risk Assessment at planning stage.

2.4 Ground Investigation

Phase I desk study and Phase II intrusive ground investigation works are yet to be instructed and will be carried out as part of RIBA Stage 3.

2.5 Contamination

Contamination risk will be assessed as part of the ground investigation works carried out during RIBA Stage 3.

2.6 Unexploded Ordnance Threat (UOT)

Unexploded ordnance risk will be assessed as part of the ground investigation works carried out during RIBA Stage 3.

2.7 Existing services

A GPR survey of below ground services and CCTV drainage survey of the Market Square and Public Realm areas will be required as part of RIBA Stage 3.

3.0 GUILDHALL

3.1 Existing Building

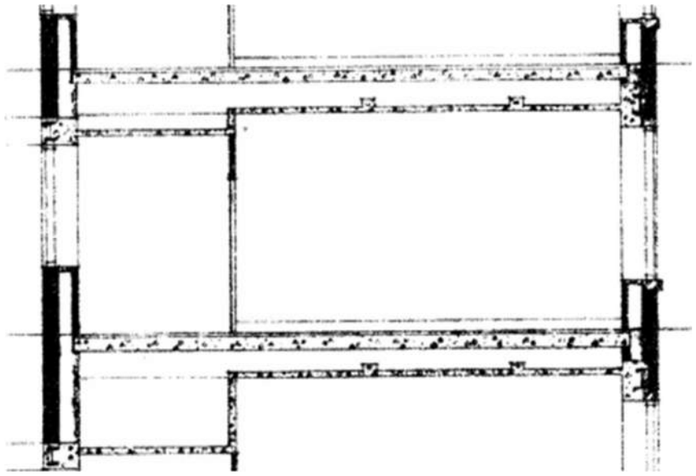
The north, east and west wings of the Guildhall were constructed in the 1930s, forming a horseshoe around the central Council Chamber and Courtrooms, as well as the 1862 Assembly Hall which was retained and incorporated into the Guildhall development, and the 1884 Free Library building (now No.2 Wheeler Street – a separate restaurant commercial unit).

1862 Assembly Hall prior to 1930s development of the current Guildhall

Market square and 1930s west wing of Guildhall adjacent the old Guildhall

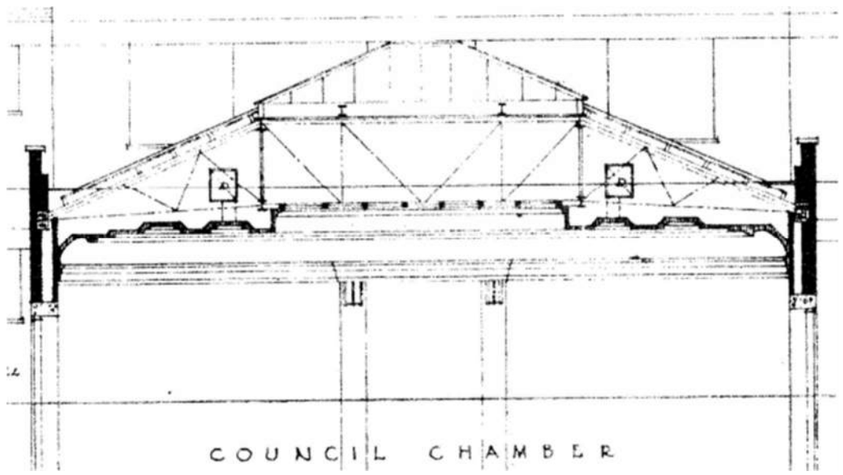
Central and eastern sections of Guildhall under construction 1930s

Record drawings and photographs show that the 1930s section of the Guildhall was constructed in steel framing, typically encased in concrete, supporting reinforced concrete floors. It is not yet known how the concrete floors were constructed, whether fully cast in-situ or incorporating precast elements. Historic drawings indicate that the floor construction is made up of an upper slab supporting occupancy loads with a concrete ceiling suspended at a lower level, producing a service void at each floor level.



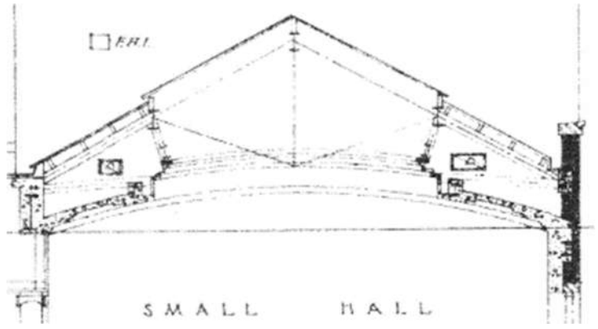
Typical upper floor section showing separate floor and ceiling slab

Intrusive investigations are to be carried out at the next stage to better understand the existing structural arrangement and construction. It will be important to understand the spanning arrangement of both the floor slab and ceiling slab, which is assumed to be retained.

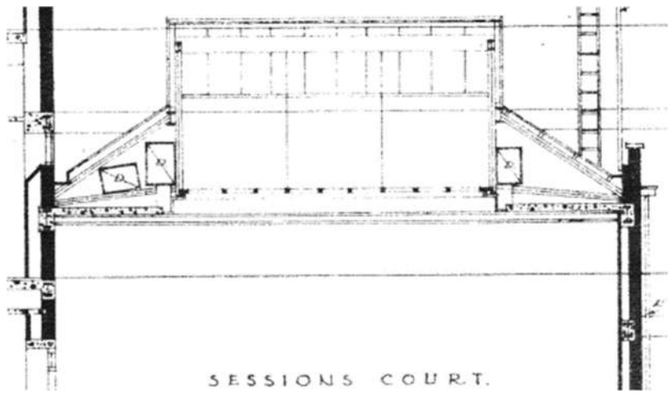


Council Chamber Roof Structure

The roofs of the north, east and west wing are flat roofs formed as concrete slabs spanning to the steelwork framing. Pitched roofs over the Council Chamber, Courts and Small Hall have typically been constructed using steelwork trusses supporting cut timber infill and rooflight glazing. Both the Small Hall and Courtroom roofs include concrete ceiling elements around the perimeter of central rooflights, whereas the Council Chamber roof supports a heavy plaster moulded ceiling.



Small Hall roof structure

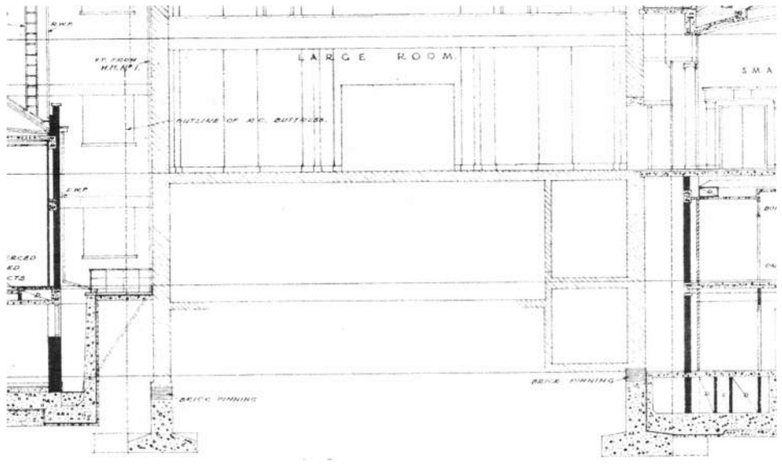


Sessions Court roof structure

Existing foundations formed in the 1930s appear to be reinforced concrete spread footings including a thick raft slab below the basement as well as deeper pad foundations below steel column positions. Given the anticipated ground profile, it is likely the spread foundations bear directly onto natural sands and gravels, although deeper basement areas may bear directly onto the Gault clay. Record drawings indicate the basement retaining walls were formed in reinforced concrete.

Basement section showing spread foundations and concrete retaining walls

No record drawings were available for the older Assembly Hall building (now the Large Room) other than where the 1930s record drawings show interaction with the existing structure at this time. The building appears to be mass loadbearing masonry construction, supporting a trussed timber roof structure. The introduction of the basement in the 1930s required that the main external walls of the Large Room were underpinned using spread concrete retaining underpins and brick pinning up to the old footings.



Section through Large Room showing 1930s underpinning works

3.2 Proposals

3.2.1 Overview of Proposals

It is proposed that the Guildhall is redeveloped to accommodate improved office occupancy which will be split between lettable commercial office space and retained Council office space. The proposals also provide a basement level home for the Museum of Cambridge.

3.2.2 Loading Review

The historic use of the building as municipal offices is generally in line with the proposals for future office use. The introduction of museum space at basement level is likely to be justifiable for the existing structure on the basis of the slab being directly supported on strong sand and gravel soils capable of supporting the proposed loads. The basement has been historically used for storage and plant rooms, with associated typical loadings being similar to the proposed museum use.

In specific areas the use of existing office floor plates will change to plant use to suit the M&E servicing strategy. These floors will need to be assessed for any proposed load increase. Secondary framing structure may be required, for example steel spreader beams, to transfer heavy plant loads back to the primary framing of the building if the floor structure cannot support the heavier plant loads directly.

Typical load allowances for municipal office use in the 1930s was conservative in comparison to modern design codes i.e. higher, and generally no allowance was made for live load reduction for multi-storey buildings, as is the case in modern codes. It is therefore likely that the existing vertical structure (steel columns) and foundations have ample capacity to support additional loading beyond full office occupation at each floor.

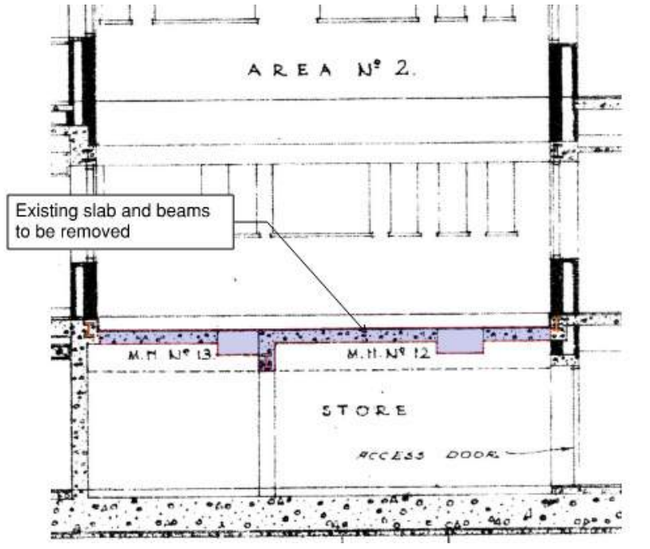
Load balancing of this nature can be used to justify the existing structure for plant loads in previous office areas, additional weight for fabric improvements, or for vertical extension of the structure, as discussed further in the sections below.

Intrusive investigations to confirm the details of the existing structural arrangement will also be required in order to inform the loading review and will allow for test calculations to be carried out for typical elements of the building.

3.2.3 Opening up of lightwells into the basement

The Guildhall currently has two internal lightwells, immediately to the east and west side of the Council Chamber respectively. The lightwells currently terminate at ground floor level where there is a recessed concrete slab with incorporated manholes picking up rainwater pipes, GF level gullies, and foulwater soil stacks.

It is proposed to remove the ground floor concrete slabs and steel framing members in order to open up both lightwells down to basement level. The existing structure to be removed is indicated on drawing 240007-CON-XX-00XDR-S-0002 in Appendix A, an extract of which is shown below. There appears to be existing framing around the full perimeter of these new voids, which should simplify this structural alteration. The integrity of the walls to be retained above, as well as adjacent areas of slab to remain, will need careful consideration in the sequencing of these works. New drainage arrangements will also be required.

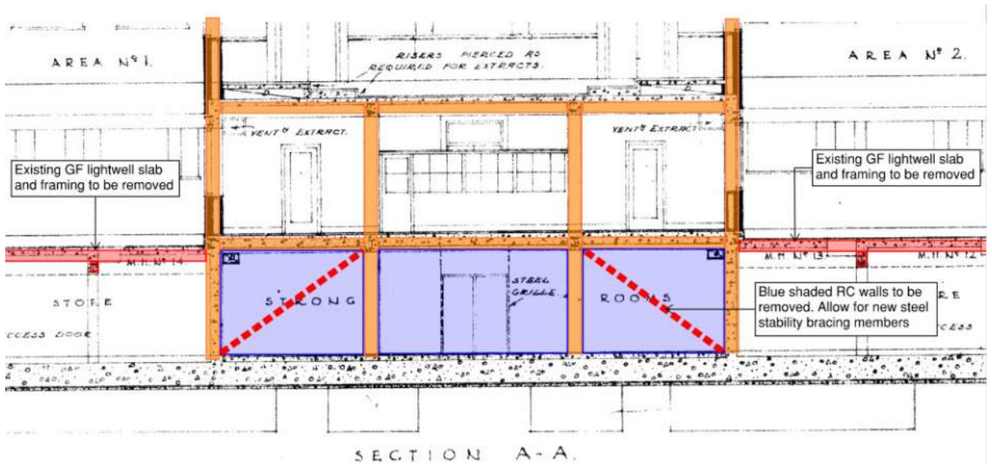


Section through lightwell – GF structure to be removed

3.2.4 Basement walls removal

Its is proposed to remove the majority of the existing walls in the basement below the Guildhall to facilitate the proposed use as open plan office space. Many of the walls appear to be non-loadbearing partitions, so can be easily removed subject to confirmation on site that these are indeed non-loadbearing. Some modest openings are to be formed in masonry walls which will require installation of new lintels.

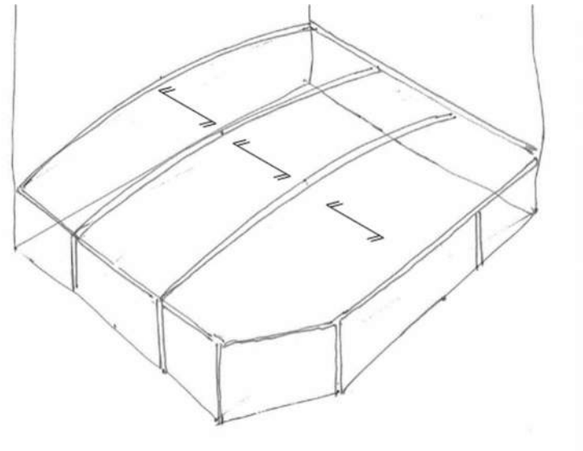
Below the Council Chamber is a square arrangement of RC walls constructed between the structural columns, forming a 'strong room'. The details of these RC walls will need detailed investigation on site to confirm their structural function prior to confirming acceptability of their removal. In particular it should be determined whether they act as shear walls providing building stability. This review will need to take into account the proposed removal of the adjacent GF lightwell areas of slab. It may be necessary to consider options for replacing the shear stiffness of these walls, such as installation of new steel bracing members ins some of the removed wall bays. This study is further illustrated on drawing 240070-CON-XX-00-DR-S-0016 in Appendix A, extract provided below.



Removal of basement walls – possible new bracing members in place of existing shear walls

3.2.5 ETFE roofs to lightwells

The deepened lightwells are to be enclosed from the elements with lightweight ETFE roofs. The ETFE panels will require structural support around the full perimeter of the lightwells, as well as at regular centres across them. A proposed steelwork support framing arrangement for the ETFE roofs is provided on drawing 240070-CON-XX-00-DR-S-0005 in Appendix A, extract provided below.



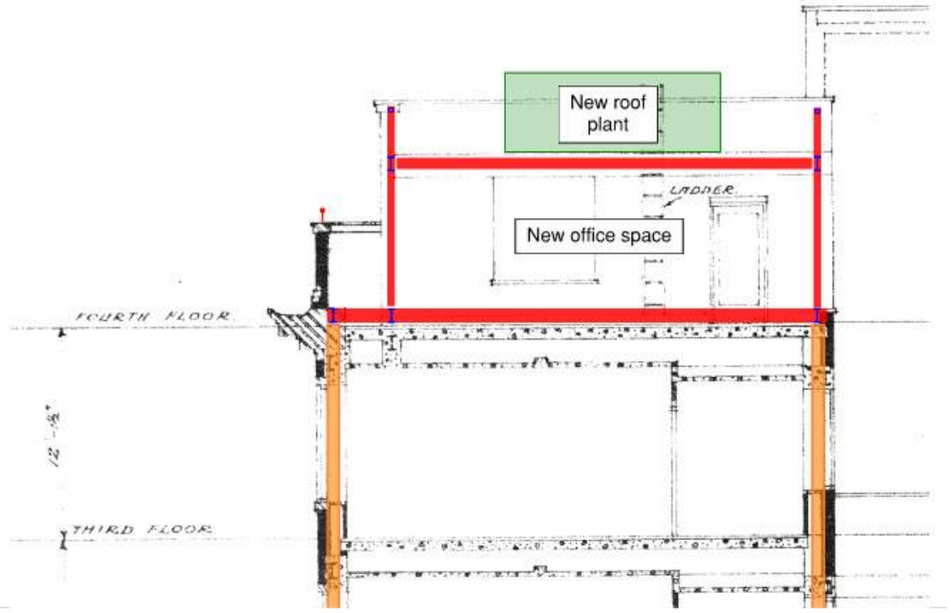
ETFE Roof Steelwork support framing

3.2.6 Vertical extension of west wing

A single storey extension is proposed to the west wing of the Guildhall which currently terminates at 4th floor level with a flat roofed plant area. Currently the roof is occupied by various plant equipment, including a large telecoms housing, supported on steel beams which span above the roof slab and bear directly onto the main external walls.

The plant will be removed to allow a new single storey extension to be constructed to accommodate lettable office space, or possible function space. The additional storey should be constructed using a relatively lightweight form of construction to minimise the loading onto the existing structure. Steelwork framing with lightweight infill such as timber or light gauge steel is one option, or alternatively an engineered timber frame. Cladding materials should also be lightweight such as light-gauge aluminium or zinc, or alternatively somewhat heavier materials such as brick or stone to match existing finishes, provided the existing structure's capacity permits.

The west elevation of the extension facing Peas Hill is to be set back from the main façade in a similar manner to that seen further north along the same elevation. Framing for the additional storey will therefore need to include load transfer from the proposed façade line to the supporting structure below on the outer wall line. A proposed steelwork framing arrangement for the vertical extension is provided on drawings 240070-CON-XX-ZZ-DR-S-0018 & 0019 in Appendix A (see extract below).



Section through proposed vertical extension to west wing

3.2.7 Fabric Improvements

As part of the proposals the thermal performance of existing roof areas is to be improved throughout the Guildhall. This will likely require the introduction of a thickness of non-combustible insulation such a as mineral wall. The resulting loading on existing structures will need to be considered alongside detailing and fixing of the modified finishes build-ups.

3.2.8 Mechanical & Electrical Services routing and plant

The proposed energy and servicing strategy for the Guildhall will require extensive removal of existing services throughout, and installation of an entirely new arrangement to suit the needs of a modern office building. This will require installation of plant in a number of targeted areas, including new plant platforms at roof level which will require new steel framing and back-analysis of the existing supporting structure to demonstrate its capacity to support new loads.

Any new M&E equipment directly supported from any of the complex pitched roof structures will require a structural review and back-analysis to justify the capability of the structure to support the additional .

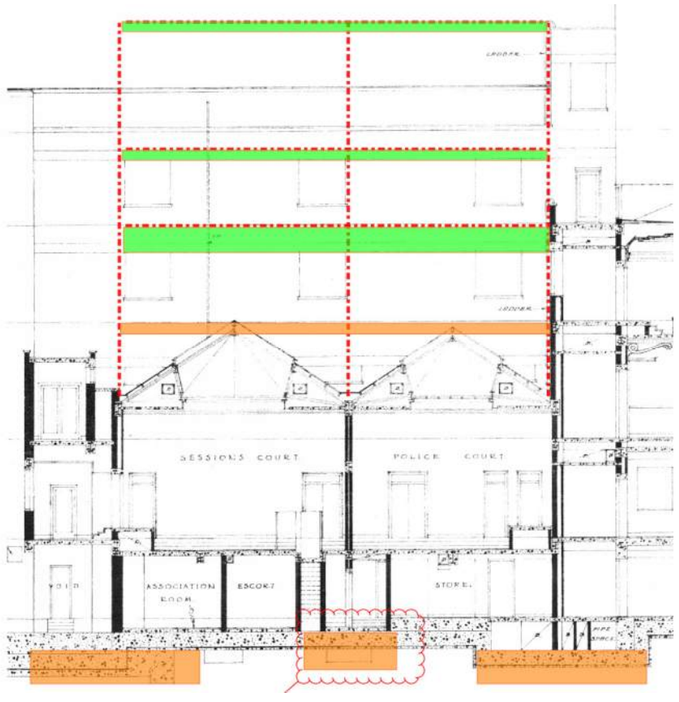
New vertical risers are likely to be required in locations which necessitate forming new voids through existing floor and ceiling slabs, which may require trimming out with new steelwork to re-support the edges of the slabs at the new voids.

PV panels are also proposed to be installed to a number of roof areas, requiring consideration of the associated loading on existing structure, and suitable support of PV panel carrier systems, whether ballasted on flat roofs or positively fixed to pitched roofs.

Plant proposals and primary service routing have been considered floor by floor on structural drawings 240070-CON-XX-00-DR-S-0011 to 0015 in Appendix A.

3.2.9 Vertical extension of Courtrooms

The possibility of providing additional levels of occupation above the Courtrooms was explored as part of our structural feasibility study. Considering the foundations to the Courtrooms currently support only a single level of occupancy and a relatively lightweight roof structure, there will be limited capacity to support additional storeys. As such any multi-storey vertical extension would require significant strengthening works, affecting existing foundations. It was therefore concluded that this would not be cost-effective and so this proposal will not be taken forward.

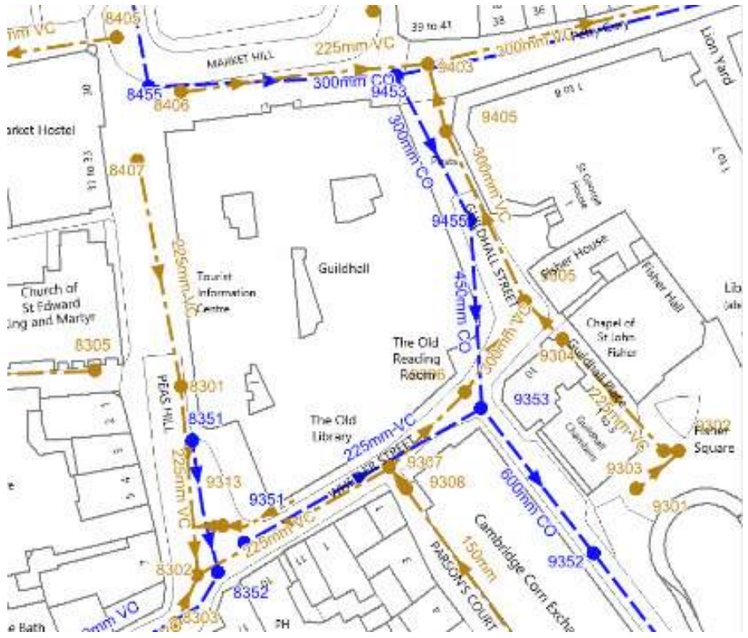


Extract of Courtroom vertical extension study

3.3 Drainage

Existing foul drainage

Anglian Water record information identifies existing gravity foul sewers within the public highway on all four sides of the Guildhall. The sewerage system conveys flows around the Guildhall towards Petty Curry, whereby flows are conveyed to the east away from the building. Refer to sewer record extract below.



Anglian Water sewer records – Guildhall

1930s record drawings provide information regarding the existing foul and surface water drainage systems serving the building. This information is limited and will need to be verified by further survey and investigation.

The records indicated that within the northern section of the building, foul drainage from ground floor and above is routed down via external soil vent pipes / stacks located within the central atriums. Foul drainage is then collected via chambers constructed within the ground floor slab, before routing out north at high level in the basement to external drainage in Market Hill.

Existing SVP /SS / RWP routing down north wall of Atrium

The existing WCs at ground floor level in the eastern wing of the building discharge via a separate connection to the foul sewer in Guildhall Street. Foul drainage from the kitchen and plant rooms at basement level also discharge via this connection, with flows pumped from a foul pump located below the basement floor slab.

Foul drainage to the south-western wing of the building is routed at basement level via the rear lightwells, discharging to the foul sewer in Peas Hill at the southern end of the building. Records show a second foul drainage pump at basement level located within the main plant room.

Two further foul drainage connections to the external drainage in Peas Hill serve the existing WCs at ground floor level in this area

Existing surface water drainage

Anglian Water record information identifies an existing surface water sewer within Market Hill and Guildhall Street. The sewer conveys flows south towards Corn Exchange Street, joining a 225mm surface water sewer in Wheeler Street to the south of the Guildhall.

A 300mm surface water sewer in Peas Hill conveys flows away from the building to the south and west along Benet Street.

Roof drainage to the southern, eastern and western elevations of the building is routed down via external RWPs, discharging to below ground drainage or to highway drainage. In areas where the basement undersails the highway the RWPs are routed across the footway via surface level drainage channels.

Roof drainage to the central areas discharge via RWPs that drop down to ground floor within the central atriums. Floor gullies are also present to provide drainage to the exposed ground floor slab with the Atriums. Flows are then collected via chambers constructed within the ground floor slab of the Atriums, before routing out north at high level in the basement to external drainage in Market Hill.

RWPs to the rear of the south-western wing are routed down to a below ground drainage system within the lightwells. This system discharges around the building to the surface water sewer in Peas Hill.

Building record information provides limited detail of the existing below ground drainage systems. A CCTV survey of the existing below ground drainage network is to be carried out, following site walkover and visual inspection of the accessible below ground drainage features with the building maintenance team. This will determine extent and condition, and to inform recommendations for maintenance and remedial works.

Proposed foul drainage

It is proposed that the existing below ground foul drainage systems are retained where possible, with modifications to suit proposed layout amendments as required. Maintenance and remedial works will be required to address any defects identified during surveys.

Scheme proposals include the removal of the existing ground floor slabs to the central Atriums to form light wells down to basement level. This will necessitate the removal of the existing foul and surface water drainage that routes across this section of the ground floor slab, and the existing chambers constructed within the ground floor slab.

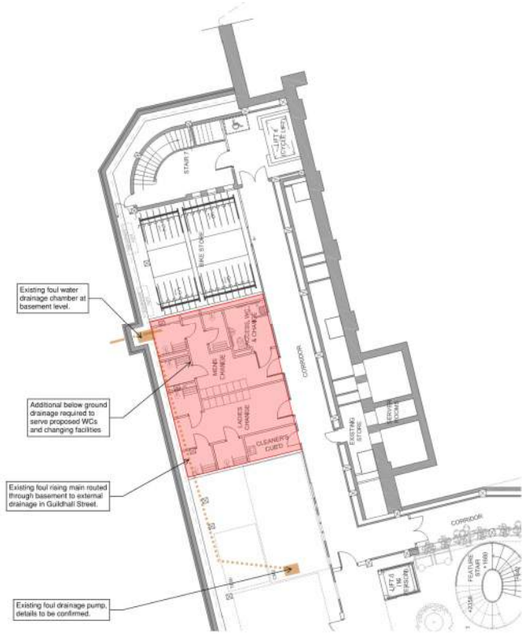
Existing chambers within ground floor slab to be removed

It is anticipated that the existing foul drainage will be re-routed at high level the basement to external drainage in Market Hill.

The proposed extended WCs and changing provision at basement level in the east wing of the building will require additional drainage provision below the basement slab. Details of the existing foul pump in this area will need to be established and reviewed for condition and suitability for the anticipated loading.

Current layouts also indicate additional WCs and changing facilities in the basement area below the courtroom. Additional foul drainage below the basement slab will be required to serve these new facilities.

Additional foul drainage will be required at basement level to serve the proposed tea points within the office space.



Proposed WCs and changing facilities at basement level

Proposed surface water drainage

It is anticipated that existing RWPs on southern walls of the central atriums to be re-routed at high level in the basement, around the Atrium, to external drainage. Roof drainage provision for the proposed ETFE roofs should be routed at high level to existing RWPs where possible.

The current scheme proposals include for vertical extension of west wing of the building. It is anticipated that the existing RWP positions would be retained. As such, the scheme proposals are anticipated to have limited impact on the existing below ground surface water drainage systems.

Hydraulic modelling of the drainage systems will be undertaken during Stage 3 design to inform recommendations regarding reinforcement and capacity improvement works.

Consideration should be given to the feasibility of rainwater harvesting and greywater reuse within the building. Any such proposals or other improvements to the surface water drainage system would need to be reflective of the constrained site and historically sensitive nature of the building.

Liaison with the Lead Local Flood Authority (LLFA) will be required to confirm any planning requirements in regard to surface water drainage.

4.0 CORN EXCHANGE

4.1 Introduction

A significant part of the Cambridge Civic Quarter Project will involve alterations to the Corn Exchange Building to improve acoustic performance, accessibility, and energy efficiency. This section of the report details the structural implications and proposals associated with these plans.

4.2 Existing Structure

4.2.1 Main Hall

No intrusive investigations have been done to date as part of this project, therefore very limited information on the existing structure is available.

The main original Corn Exchange building is of single-storey loadbearing masonry construction, with a cast iron tied arches supporting timber roof trusses. The pitched roof appears to be formed of a mixture of timber and zinc roofing. Openings in the external masonry walls are formed using stone or precast lintels. The substructure in this area is currently unknown, and it is not known where any additional structure is buried within the wall build-ups.

The balcony seating structure is currently unknown but is thought likely to be steelwork.

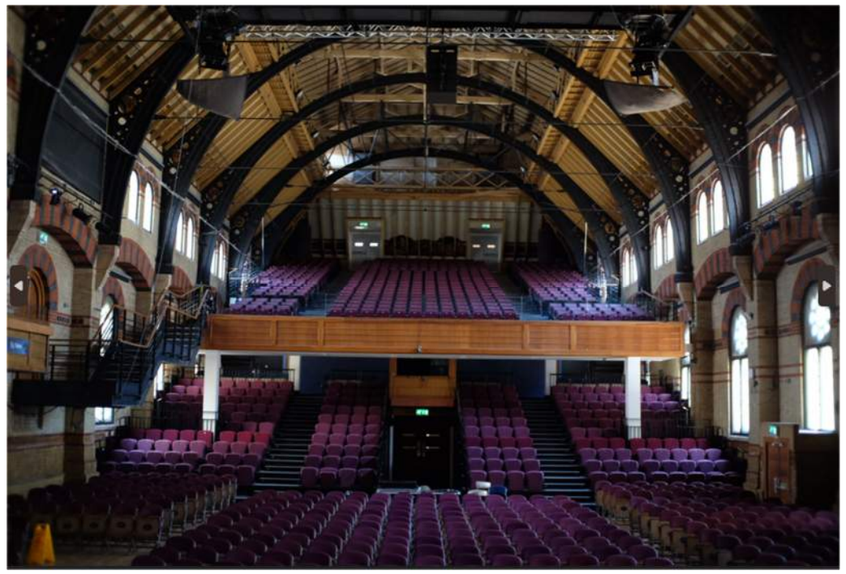
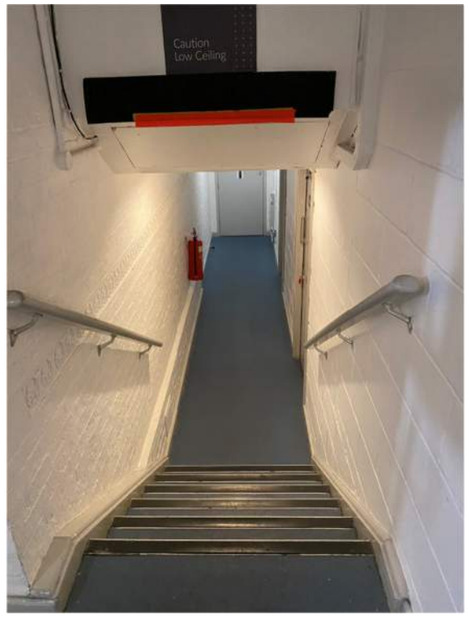


Photo taken inside the Corn Exchange Main Hall, showing the cast iron and timber roof structure, loadbearing masonry walls and suspected steel balcony structure

4.2.2 Back of Stage

The back of stage area appears to be largely of blockwork wall construction, with timber upper floors. The substructure, ground floor, and roof structure is unknown.



Back of stage lower ground floor corridor

4.2.3 Foyer

The foyer area appears to have had a mezzanine structure added to it, with visible columns and suspected beams. These elements are covered by finishes and therefore the size and material is unknown, but it is thought likely to be a steel frame structure with timber floors, partially supported from the existing masonry walls. The foundations of these columns are unknown.

Foyer Walkway structure

4.3 Proposals

4.3.1 Back of stage alteration works

The proposed works to the back of stage area involve creating a level access on the ground floor and adding an additional storey to the central section.

Two potential options have been proposed for these works. If the existing structure is sufficient, it may be possible to raise the lower ground floor section by constructing a new engineered timber floor spanning between the existing masonry walls on wall plates, above the existing lower ground floor. The blockwork walls would be extended (assuming this allows for the required insulation strateg) and the new upper floors and roof constructed in a similar manner. This will require the addition of one steel beam per floor due to geometrical constraints. This option is presented on Conisbee Drawing 240070-CON-XX-00-DR-S-0006.

If the existing structure is found to be incapable of supporting additional floors and walls, a standalone steel frame will be required for both the raised ground floor and the additional storey. Solid timber joists are recommended for the floor structure. The structure would need new foundations, which would need to be designed to avoid clashes with any existing foundations once they are known. The standalone structure should be kept as lightweight as possible, to minimise the requirement for new foundations. This option is presented on Conisbee Drawing 240070-CON-XX-00-DR-S-0007.

Both options introduce a void underneath the new ground floor, which will need to be vented to the Architect's specification.

4.3.2 Foyer works

The proposed works to the foyer area include extending the existing mezzanine structure to introduce a new upstairs bar area. This is likely to be achievable by spanning a new deep steel beam across the foyer, between the existing edge beams. New steel beams will also need to be introduced along the mezzanine walkways to extend the perimeter. The existing beams and columns will require assessment via intrusive surveys to determine their suitability for supporting the additional loading. Strengthening or replacement works to the existing structure may be required if it is found to be insufficient.

The new floor structure should be of lightweight construction, such as solid or engineered timber joists, in order to minimise the impact on the existing structure.

These proposals are presented on Conisbee Drawing 240070-CON-XX-00-DR-S-0008.

4.3.3 Parsons Court

The current proposals do not currently require any structural works to Parsons Court. It may become necessary to introduce new openings in places, in which case small openings may be formed by introducing precast concrete lintels to match the existing. Larger openings in any walls providing lateral stability may require the introduction of a steel moment frame. This is presented on Conisbee drawing 240070-CON-XX-00-DR-S-0009.

4.3.4 New external façade openings

It is possible that new openings will need to be formed in the Corn Exchange external walls to create new fire escape routes. If this is required, the new openings should be formed using steel or concrete lintels to match the existing and should avoid any vertical structure such as fire escape stair columns, or locations where significant point loads are applied. Refer to Conisbee drawing 240070-CON-XX-00-DR-S-0010.

Existing façade opening lintel arrangements

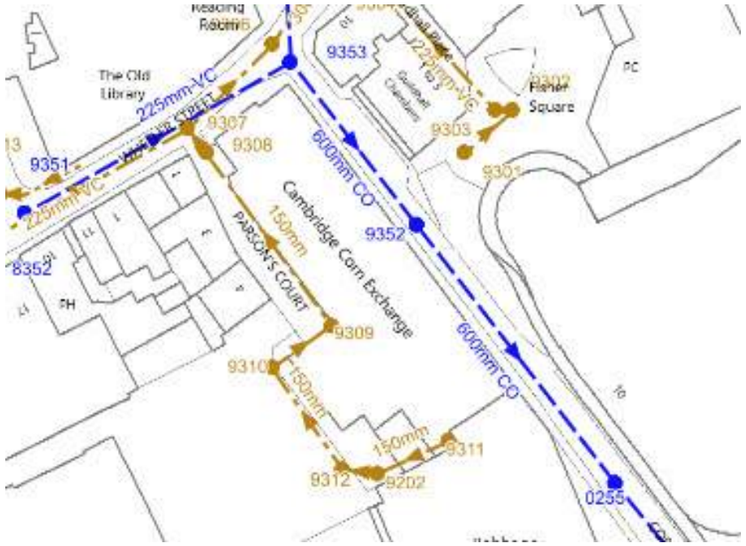
4.3.5 Roof Works including fabric upgrades

Fabric upgrade works will be required to the main hall roof in order to increase the insulation and store new mechanical plant. New PV panels to the roof are also being considered. It is possible that strengthening works will be required to some areas of the existing structure to withstand the increase in the applied loadings.

4.4 Drainage

Existing foul drainage

Anglian Water record information identifies an existing 150mm gravity foul sewer within Parsons Court to the west of the building. The sewer extends around the Corn Exchange building through the existing service access areas to the south. The sewer discharges to a 225mm foul sewer in Wheeler Street to the north of the site.



Anglian Water sewer records – Corn Exchange

There is no existing record information for the drainage systems within the building, and as such a comprehensive drainage survey will be required during Stage 3 design.

The main WCs are located at basement and first floor level within the western section of the building, and at first floor level above the entrance foyer. Further WCs and showers are present at ground floor level in the back of stage area. The main bar area is within the entrance foyer at ground floor level.

Existing surface water drainage

Anglian Water record information identifies a 225mm gravity surface water sewer in Wheeler Street and 600mm gravity surface water sewer in Corn Exchange Street. The sewer convey flows to the south.

Roof drainage to the western and northern elevations of the building is routed down via external RWPs, where it is assumed to discharge to the public sewers in Wheeler Street and Corn Exchange Street noted above.

A number of the existing RWPs on the western elevation discharge directly onto the paving surface in Parsons Court.

At the southern end of the building there are flat sections of roof at second and third floor level which are enclosed by the adjacent buildings.

Drainage to Parsons Court is provided by a linear drainage channel located adjacent to the fire escape doors, and a number of gullies. The arrangement should be reviewed against topographic survey information when available to ensure that adequate drainage is provided.

Proposed foul drainage

The proposals include reconfiguration of the bar areas, including a new mezzanine bar area, as well as increases to WC capacity.

It is proposed that the existing below ground foul drainage systems are retained where possible, with modifications to suit proposed layout amendments as required. Where possible above ground drainage should be routed to existing SVP / SS positions to avoid works below slab.

The proposals to increase WC capacity will require assessment of capacity of the existing below ground systems, including capacity and condition of any existing foul drainage pumps serving the basement WCs. Assessment of foul drainage loads will be undertaken based on proposed use and building occupancy to enable capacity checks of the existing system.

It is anticipated that existing sewer connections will be retained where possible.

A CCTV survey of the existing below ground drainage network will be required at stage 3, following site walkover and visual inspection of the accessible below ground drainage features with the building maintenance team. This will determine extent and condition, and to inform recommendations for maintenance and remedial works.

Proposed surface water drainage

The current scheme proposals include for upgrade and refit of the main hall roof, including insulation improvements and potentially PV panels. It is anticipated that the existing RWP positions would be retained. As such, the scheme proposals are anticipated to have limited impact on the existing below ground surface water drainage systems.

It is proposed that the existing below ground drainage systems are retained, with maintenance and remedial works to address any defects identified during surveys. This approach would be subject to agreement from the Lead Local Flood Authority.

The existing above and below ground drainage systems would not have been designed for current rainfall parameters and anticipated increases in rainfall intensity due to climate change. Following completion of the drainage surveys, hydraulic modelling will be undertaken to understand performance of the existing networks under these conditions.

This analysis will allow identification of areas where capacity of the existing system may be exceeded, which in turn will inform consideration of potential capacity improvements. Any improvement measures would need to be reflective of the constrained site and historically sensitive nature of the building.

5.0 MARKET SQUARE & PUBLIC REALM

5.1 Market Stalls Canopy

An above ground structure is proposed in the Market Square to provide a covered, open-sided canopy, with market stall vending units installed below to create a covered market space in the northern portion of the market square.

The structure is likely to be a lightweight steel structure featuring slender columns cantilevered from ground level to allow maximum flexibility of access and circulation routes as well as adaptability for the stalls and vending layout.

It is proposed that the canopy will partly impermeable, requiring consideration of rainwater management and transmission to ground level drainage; this may involve provision of rainwater downpipes within structural sections to keep the discharge system discreet.

The provision of PV panels built into the upper surface of the canopy is also proposed. This will require consideration of electric services routing to the PV array.

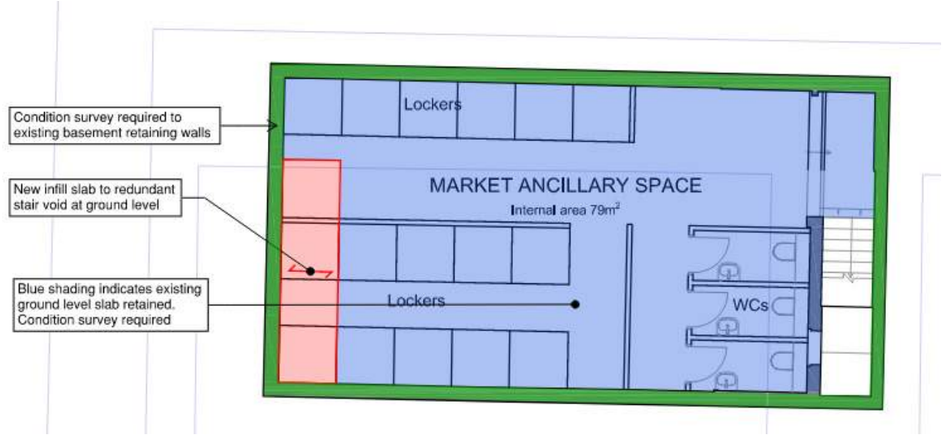
5.2 Basement Proposals

An existing single storey basement existing below the northwest quadrant of the Market Square, housing WC and storage spaces.

It is proposed that the existing basement is fully refurbished, including demolishing the existing toilet facilities and creating an open space for the storage of market stalls, as well as limit toilet facilities for use by market stall owners only.

Access into the refurbished basement will be via the retained northern staircase. The existing southern staircase will be demolished and the stair void at ground level infilled with a new infill slab.

Structural investigations will be required to determine the existing structural arrangement around the southern staircase to inform the demolition and slab infill works. A condition survey of the existing ground level slab and basement retaining walls is also required to ensure sufficient future design life and inform the proposed waterproofing strategy.



Proposed refurbishments to Market Square basement

5.3 Drainage

Existing foul drainage

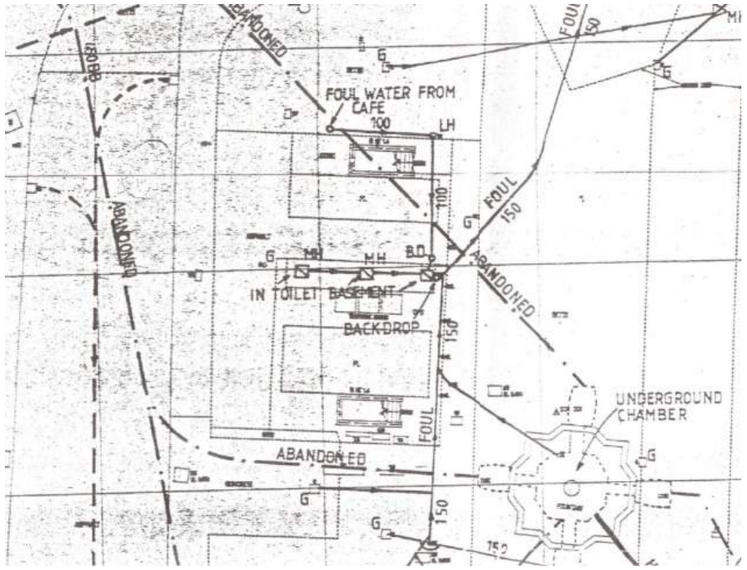
Anglian Water record information identifies the following foul sewers in and around the Market Square:

- 225mm gravity foul sewer conveying flows to the east beneath Market Street.
- 225mm gravity foul sewer conveying flows to the north beneath Market Hill.
- 225mm gravity foul sewer in Market Hill conveying flows to the east towards Petty Cury.
- 225mm gravity foul sewer in Market Passage, conveying flows to the west.

Refer to drawing 240070-CON-MS-00-SK-C-0002 attached at Appendix B.

1990s Cambridge City Engineers record drawings provide information regarding the existing foul drainage system serving the Market Square basement. Refer to extract below. The record drawings show 3 no. chambers at basement level, which discharge via a 150mm external foul drain to the public sewer in Market Street.

The record drawing indicates that a number of external gullies within the Market Square to the south of the basement also discharge via this system. Refer to drawing 240070-CON-MS-00-SK-C-0003 attached at Appendix B.

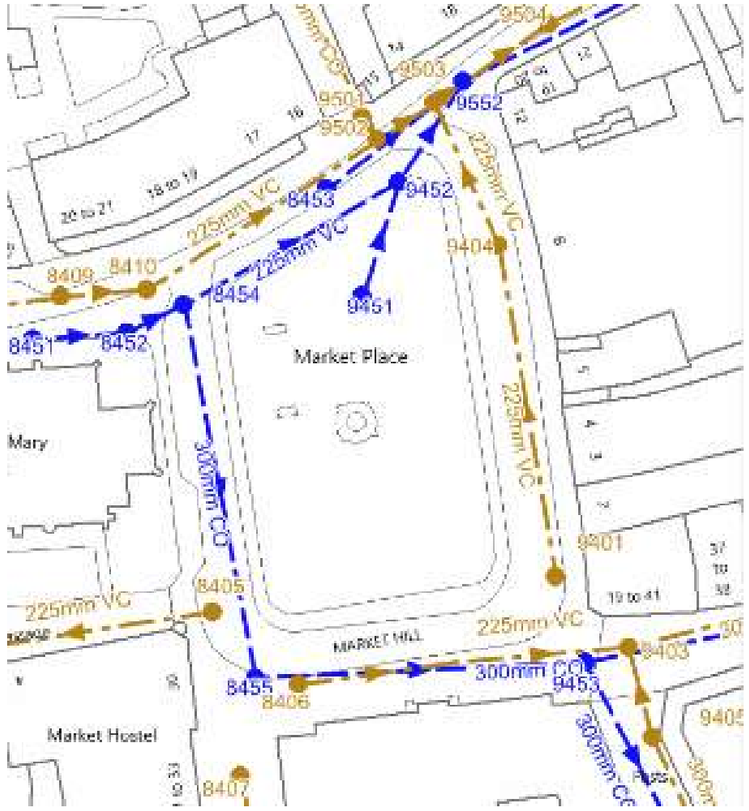


Existing foul drainage to Market Square basement (Cambridge City Engineers)

Existing surface water drainage

Anglian Water record information identifies the following surface water sewer in and around the Market Square:

- 225mm gravity surface water sewer crossing the northern end of the Market Square. The sewer conveys flows to the north-east towards Market Street.
- 150mm gravity surface water sewer extending into the Market Square to MH 9451.
- 300mm gravity foul sewer conveying flows south and east around the Market Square onto Market Hill and Guildhall Street.



Anglian Water sewer records – Market Square

The surface water drainage to the Market Square can be separated into the system serving the area of historic setts and other paving types within the Market Place itself, and the systems serving the surrounding public highway.

The setts within the Market Place are laid to falls to create a series of at surface channels running south to north. These channels drain to gullies and a below ground drainage system, which in turn discharges via a 150mm drain to the public sewer in Market Hill to the south, and to Anglian Water manhole 9451 within the Market Place.

The footway and carriageway to the public highway on Market Hill (east, south and west) drain to below ground drainage via conventional highway drainage gullies.

Grated linear drainage channels have been installed on Market Street to both channel lines as part of the works to raise the carriageway through this section.

Proposed foul drainage

Foul drainage provision will be required to serve the proposed basement WCs, the drinking water fountain, and potentially to the permanent market stalls. It is anticipated that the existing connection to the public sewer in Market Street will be retained, with the upstream drains abandoned and removed to accommodate the new basement construction.

Record information indicates that the existing foul sewer in Market Street has a depth to invert of around 7m, so it may be possible to provide drainage to the basement via a gravity connection. In this case protection measures, such as non-return valves, will be required to protect the basement in the event of surcharging of the public sewer. Alternatively, a foul pumping station will need to be provided below the basement floor slab.

A grease management strategy will need to be considered as part of any foul drainage provision to the permanent market stalls.

Proposed surface water drainage

The existing surface water drainage system does not have capacity for current design requirements and anticipated increases in rainfall intensity due to climate change. It is therefore anticipated that a new below ground surface water drainage system would be introduced to serve the Market Square.

Existing Hydrological Site Characteristics

The existing hydrological characteristics for the Market Square are summarised below. This excludes the areas of existing public highway around the Market Place.

- M5_60min=20
- Ratio r=0.4
- IH 124 Soil Type: 2
- Site Area (Market Place) = 1,888 m²
- Total Existing Impermeable Area = 1,888m²
- Percentage Impermeable (PIMP) = 100%

Greenfield runoff rates for the site have been calculated using the IH124 runoff estimation approach. The results are summarised in the Table below.

Return period	Existing peak run off rate [1]	Greenfield run off rate [2]	Existing Discharge volume [3]
	[l/s]	[l/s]	[m^3]
1 in 1 year	10.5	0.22	33.1
1 in 30 years	25.8	0.62	72.8
1 in 100 years	33.7	1.07	94.6

Existing runoff rates and volumes.

[1] The existing run off rates were determined by the Wallingford Rational Method with a rainstorm of 30 minutes duration; Volumetric run-off coefficient = 1 for impermeable areas, and 0 for permeable areas.
[2] Calculated based on IH 124 and 'Rainfall runoff management for developments'
[3] Based on BS 8582 section 9.8

Proposed method of surface water disposal

The Building Regulations (H3) and the NPPG set out the following hierarchy for discharging surface water runoff from a development in order of preference:

- Infiltration into the ground.
- Discharge into a watercourse.
- Discharge into a surface water sewer.

Infiltration-based drainage methods are not likely to be feasible due to the presence of a significant depth of made ground across the site, with relatively shallow perched groundwater encountered in the underlying natural soils. This will be assessment and confirmed as part of the Phase II intrusive ground investigation works.

It is anticipated that surface water drainage will discharge to the existing surface water sewerage system as per the current arrangement.

Surface water discharge rates and volumes

In regard to brownfield sites, the Cambridgeshire Flood and Water SPD states that 'Brownfield (previously developed land) sites must reduce the existing runoff from the site as part of the redevelopment. Where possible, in order to provide betterment, redevelopments should look to reinstate greenfield runoff rates.'

The Cambridgeshire SWPG states 'Where a complex flow control is proposed the peak runoff rate from the developed site for events up to and including the 1% AEP plus climate change event should not exceed the greenfield equivalents'.

SuDS

The Market Square and associated public realm improvement works will incorporate a Sustainable Drainage System (SuDS) to manage rainfall on site and ensure that the risk of surface water flooding is not increased elsewhere.

The SuDS strategy should complement the overall vision for the site, incorporating management and control measures that create multi-functional space, enhance visual amenity, support biodiversity and allow for safe interaction with the water environment.

The SuDS strategy should be developed in line with the following principles:

1. Control the **quantity** of runoff to support the management of flood risk and protect the natural water cycle.
2. Enhance the **quality** of surface water to protect the environment from pollution picked up from rainwater flowing over man-made surfaces.
3. Enhance the **amenity** of developments, creating and sustaining better places for people alongside water.
4. Enhance the **biodiversity** of developments, creating and sustaining better places for nature to thrive, mimicking the natural environment.

An initial SuDS viability appraisal has been undertaken to consider the potential to incorporate different SuDS features within the Market Square and associated public realm improvement works.

SuDS Feature	Description		Suitability / comment
Colour Key: Red – Not suitable; Orange – May be suitable; Green - Suitable			
Green roofs	Green roofs are areas of living vegetation included on the roofscape of buildings. They can be either extensive or intensive and accessible or non-accessible. The plant and soil reduce the rate of discharge extending the time between rainwater falling on the roof and reaching the rainwater outlet / drain. They also provide ecological and visual benefits.		Not likely to be suited to the lightweight canopy structure proposed for the Market Square.
Blue Roofs	Blueroofs can be installed on flat roofs in tandem with green roofs or under accessible terraces or other flat roofs of most finishes. They temporarily attenuate stormwater at roof level during extreme storm event. Flow controls at roof level can typically restrict flows to lower rates than below ground controls.		Not likely to be suited to the lightweight canopy structure proposed for the Market Square.
Rainwater harvesting	Rainwater harvesting is the collection, storage, treatment (where necessary) of rainwater runoff from roofs and other impermeable areas for reuse within the site. In addition to reducing volume runoff from the site, they can reduce the water demand of the site delivering climate resilience and sustainability benefits		There is scope to incorporate rainwater harvesting systems to the Market Square canopy roof for water use and / or irrigation. Below ground storage tanks would need to consider archaeological constraints, existing services, etc

SuDS Feature	Description		Suitability / comment
Colour Key: Red – Not suitable; Orange – May be suitable; Green - Suitable			
Trees	Trees help protect the environment in a number of ways including reducing runoff rates through interception of rainwater in their canopies and promoting infiltration in permeable / soft landscaping as well as the visual benefit they provide to the area.		Trees are proposed to be included within the public realm works around the Market Square. Tree pits locations will need to be reviewed against archaeological constraints, existing services, proximity to buildings / foundations, etc
Infiltration systems	Infiltration systems hold water and allow it to percolate back into the ground as it would naturally in permeable areas. The suitability of infiltration systems depends on ground conditions at the site.		Presence of made ground and / or shallow groundwater may prevent the use of infiltration techniques. Further assessment and site investigation required to confirm viability.
Pervious pavements	Pervious pavements provide pavement surfaces suitable for pedestrian / trafficked applications whilst allowing runoff to permeate through their structure. This provides filtration benefit to treat runoff. Pervious pavements can be used to collect, treat and convey flow only, or if site condition permit, allow infiltration to the ground direct from their base.		Not likely to be compatible with proposed retention / reuse of existing granite setts. Not typically accepted for use within public highway.

SuDS Feature	Description		Suitability / comment
Colour Key: Red – Not suitable; Orange – May be suitable; Green - Suitable			
Bioretention systems	Bioretention systems, including rain gardens, are shallow landscaped depressions to treat and store runoff using engineered soils and vegetation. They provide amenity and visual benefit alongside additional climate benefits. They are usually used for containing / managing frequent storm events.		Potential to incorporate rain gardens / bioretention systems within the soft landscaping areas to Peas Hill and Market Hill.
Swales	Swales are shallow flat-bottomed channels to convey, infiltrate (where possible) and treat surface water runoff. They can enhance site design and provide biodiversity enhancements. They are often used to drain roads, paths or car parks. Swales can replace traditional pipes as a means to convey flows and used as part of a SuDS train of elements.		Not likely to be suitable due to space requirements.
Filter drains	Filter drains are shallow trenches filled with gravel to attenuate, treat and convey surface water runoff. They can convey / attenuate only or, depending on site conditions, allow infiltration direct to the ground.		Potentially viable but likely to present a maintenance concern in heavily used urban environment.

SuDS Feature	Description		Suitability / comment
Colour Key: Red – Not suitable; Orange – May be suitable; Green - Suitable			
Detention basins	Detention basins are landscaped depressions which are normally dry except for during and immediately after storm events. These attenuate flows through controls on the outfalls to store rainwater upstream in networks providing treatment and amenity benefits. With careful design, these can be used for leisure / amenity uses during normal / dry periods.		Not suitable to central urban location, space requirements, etc.
Ponds & wetlands	These are similar to detention basins, however they are designed to have a permanent level of water within them to provide biodiversity and amenity benefits.		Not suitable to central urban location, space requirements, etc.
Filter strips	Filter strips are uniformly graded gently sloping strips of grass or vegetation to treat runoff by slowing down flows, promoting sedimentation and infiltration.		Potential to incorporate filter strips to the proposed areas of soft landscaping to Peas Hill and Market Hill.
Attenuation storage tanks	Attenuation storage tanks temporarily hold back water for gradual release or reuse at a controlled rate to reduce the peak runoff rate.		Feasible but will need to be reviewed against archaeological constraints, existing service routes, etc.

SuDS viability appraisal.

5.4 External works

Existing paving

The existing paving to the Market Square comprises granite setts, generally laid in staggered stretcher bond. The existing setts comprise square and rectangular units of varying size and condition. Surface drainage channels are formed throughout the Market Square using rows or 3,4 or 5 setts.

Above and to the west of the underground toilets the setts have been overlaid with an asphalt surface course which has broken up in places. Two further areas to the south of the central fountain and around the compactor bins comprise in-situ concrete slab or overlay construction.

In some areas the setts are missing or damaged, and generally the paving surface is very uneven resulting in localised areas of surface water ponding and potential hazards / accessibility issues. A previous condition survey of the existing setts was prepared out by Alan Wright Associates on behalf of Cambridge City Council.

At the centre of the Market Square are the remains of the Market Fountain, comprising stonework plinths and a small part of the fountain structure. Previous investigations have identified below ground chambers located around the fountain structure, including a remnant section of Hobson's Conduit.

The granite setts, toilet railings and fountain plinth are Listed heritage assets, and as such work to these assets will require Listed Building Consent.

The public highway surrounding the square generally comprises asphalt carriageway construction with granite kerbs and granite setts to the kerb channels. Footways comprise pre-cast flag, block or asphalt construction. Raised tables are provided on the pedestrian routes to the Market Square on Market Street and linking to Guildhall Street / Petty Cury, demarked using granite setts.

The raised carriageway section on St Mary's Street / Market Street comprises precast concrete blocks laid in 45-degree herringbone.

There are remnants of timber setts below the asphalt carriageway surfacing on Market Hill adjacent to Great St Mary's Church. The setts are visible in places where the asphalt surface course has deteriorated and broken up.

Proposed paving

Current proposals include options for the restoration and re-use of the existing granite setts to provide and even and consistent surface across the Market Square.

The proposed method for removal, refurbishment and reinstatement of the setts will be subject to a detailed condition survey and consultation with natural stone specialists.

Trial pits will be required in order to establish details and condition of the existing paving sub-base for assessment against proposed loading requirements. It is anticipated that the proposed pavement will be design for occasional overrun by HGVs and emergency vehicles.

6.0 WORK GOING FORWARDS

6.1 Project Risks

No.	Risk	Location	Comment & Mitigation Measures
1	Unknown Ground Conditions including Contamination	Market Square basement and new foundations to Guildhall & Corn Exchange	A comprehensive geo-environmental Phase I desk study and Phase II intrusive ground investigation are required to inform design of new foundations and retaining structures, assessment of existing foundations, contamination or aggressive ground assessment.
2	Archaeological issues.	Market Square basement and new foundations to Guildhall & Corn Exchange	The current plans are likely to require some level of substructure works, which may have archaeological related implications due to the sites age and location.
3	Existing Structure Unknown	Guildhall & Corn Exchange	Feasibility of proposals requires intrusive investigation of existing structure to inform check calculations and structural analysis
4	Asbestos	Guildhall & Corn Exchange, Market Square basement	Asbestos R&D surveys required for all areas affected by works and intrusive investigations, supported by dynamic risk assessment by suitable trained staff during investigations.
5	Surface water flood risk	Site wide	Flood mapping indicate areas of surface water flood risk across the site. To be assessed as part of site-specific Flood Risk Assessment.
6	Planning requirements / SUDs Strategy	Site wide	Requirements for surface water drainage / SuDS to be agreed with LPA and LLFA drainage officers.
7	Capacity constraints in below ground drainage	Site wide	Increased occupancy of facilities / climate change allowances may require the existing system to upgraded.
9	Condition of below ground drainage	Site wide	Investigations of below ground drainage are yet to be undertaken. Assets may be in poor condition requiring repair.

6.2 Next Steps & Information Required

The following investigation and survey works are considered necessary during the next design stage to inform the proposed structural and civil design work:

- Phase I desk study and Phase II intrusive ground investigation. Conisbee to provide a Scope Document.
- Trial pits to determine existing foundation arrangements in all areas where the loading may be increased, or new substructure may be constructed nearby. Conisbee to provide a Scope Document.
- Intrusive investigations to various areas of Guildhall building structure currently covered by finishes or not easily accessible which will be affected by the proposals. Conisbee to provide a Scope Document including marked up drawings. Indicative structural investigations scope drawings are provided in Appendix A on drawings 240070-CON-XX-B1-DR-S-0199 through to 240070-CON-XX-RF-DR-S-0205.
- Intrusive investigations to various areas of the Corn Exchange building structure currently covered by finishes or not easily accessible which will be affected by the proposals, particularly the foyer mezzanine structure, the roof structure, the masonry piers to the external walls, and the back of stage floor and wall structures. Conisbee to provide a Scope Document including marked up drawings. Indicative structural investigations scope drawings are provided in Appendix A on drawings 240070-CON-XX-00-DR-S-0250 through to 240070-CON-XX-00-DR-S-0252.
- GPR survey of Market Square, proposed public realm areas, and other pavements/highways immediately adjacent the Guildhall, Corn Exchange and 3 Parsons Court.
- CCTV drainage survey of Market Square, proposed public realm areas, and drainage within other pavements/highways immediately adjacent the Guildhall, Corn Exchange and 3 Parsons Court which are understood serve these buildings.
- Updated Statutory Services records to be obtained from providers in all areas.
- Engagement with the Cambridge City Council and Lead Local Flood Authority drainage officers to confirm any planning requirements in regard to surface water drainage / SuDS.

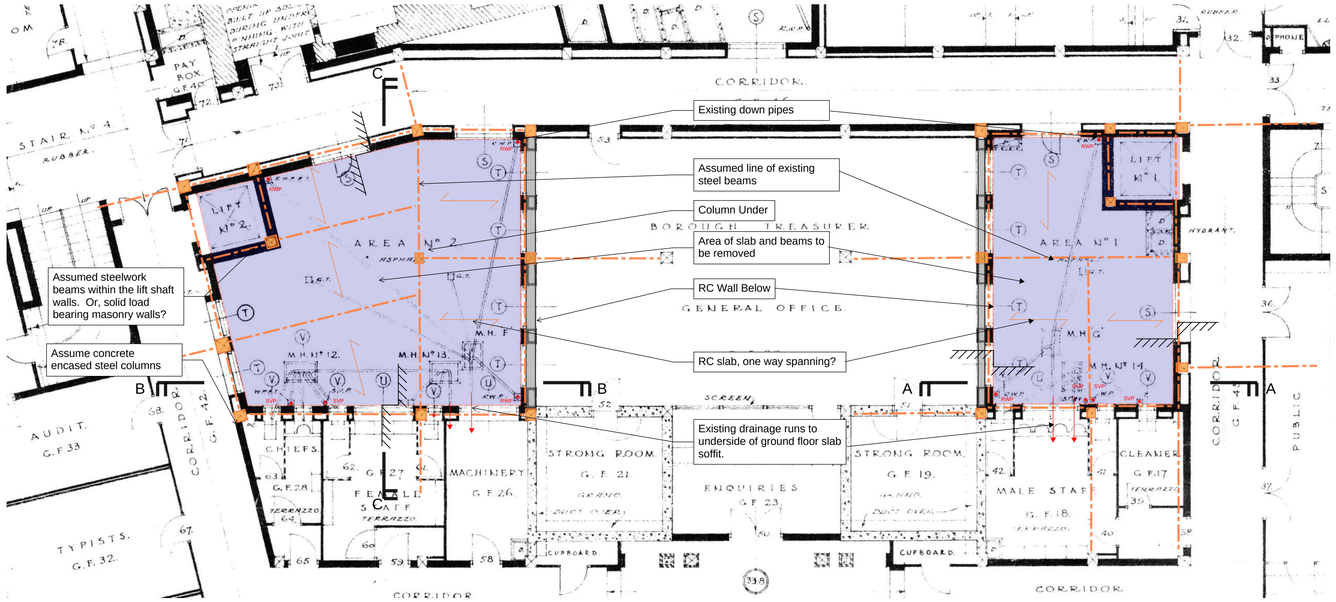
APPENDIX A – STRUCTURAL DRAWINGS

GENERAL NOTES

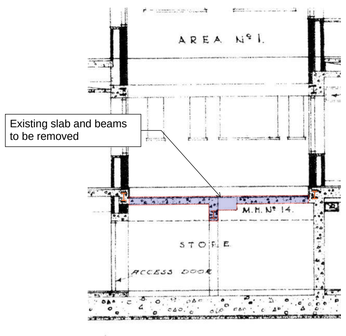
1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTS, ENGINEERS AND SPECIALIST DRAWINGS AND SPECIFICATIONS

2. DO NOT SCALE FROM THIS DRAWING IN EITHER PAPER OR DIGITAL FORM. USE WRITTEN DIMENSIONS ONLY.

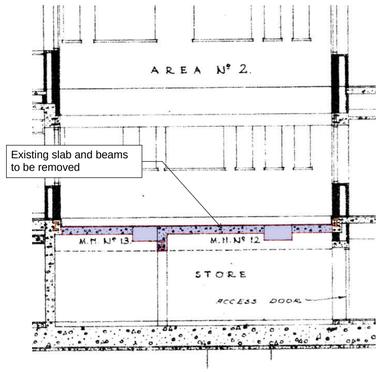
3. EXISTING STRUCTURAL ARRANGEMENT BASED ON THE ARCHIVED DRAWINGS. VISUAL AND INTRUSIVE STRUCTURAL SURVEY REQUIRED TO VALIDATE EXISTING STRUCTURAL ARRANGEMENT



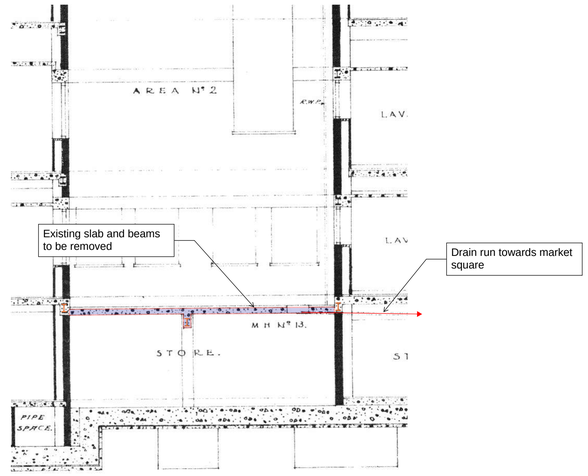
GROUND FLOOR LEVEL - PROPOSED LIGHT WELL SLAB REMOVAL



SECTION A-A



SECTION B-B



SECTION C-C

NOT FOR CONSTRUCTION

Rev	Date	Description	Drawn	Check
	07.06.24	Issued for comment	BH	BH

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Drawing Status
SCHEME DESIGN

Project
Cambridge Civic Quarter
Guildhall

Title
Existing Ground Floor - Proposed Light Well

Drawing No
240007-CON-XX-00XDR-S-0002

Date 06.06.2024
Scale NTS
Drawn BH
Engineer BH
Project No 240007
Revision P1

GENERAL NOTES

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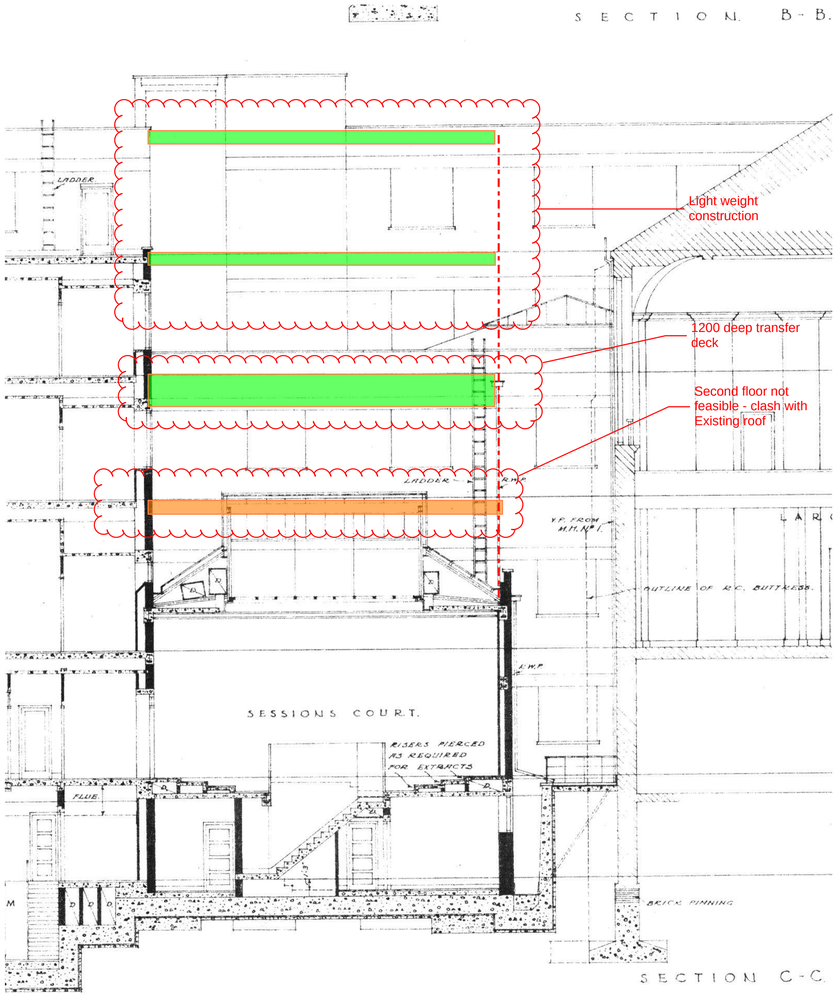
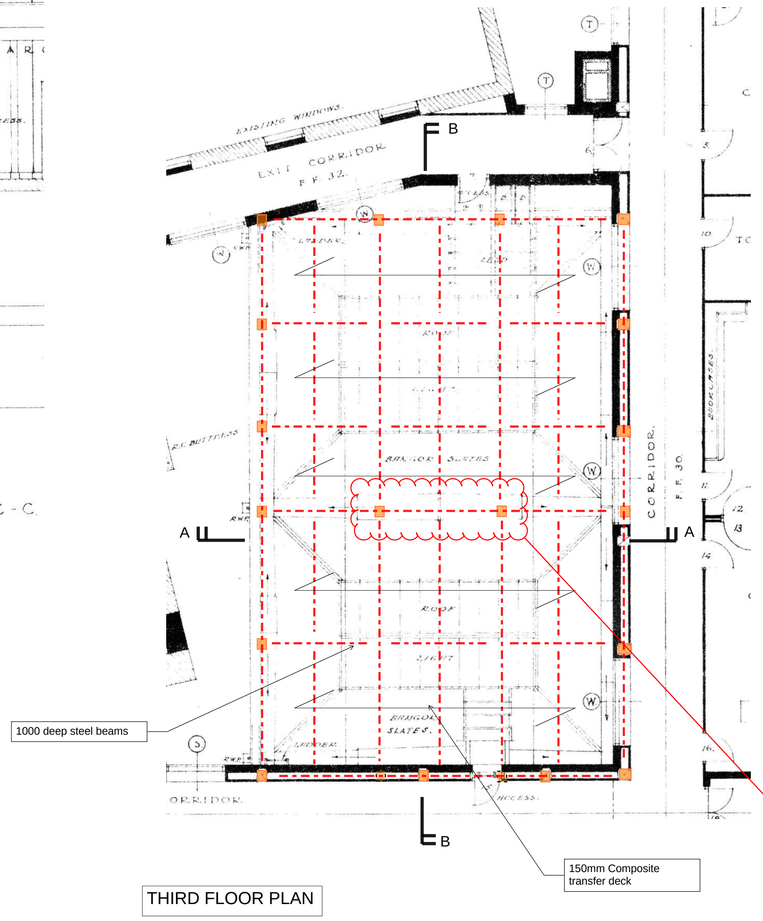
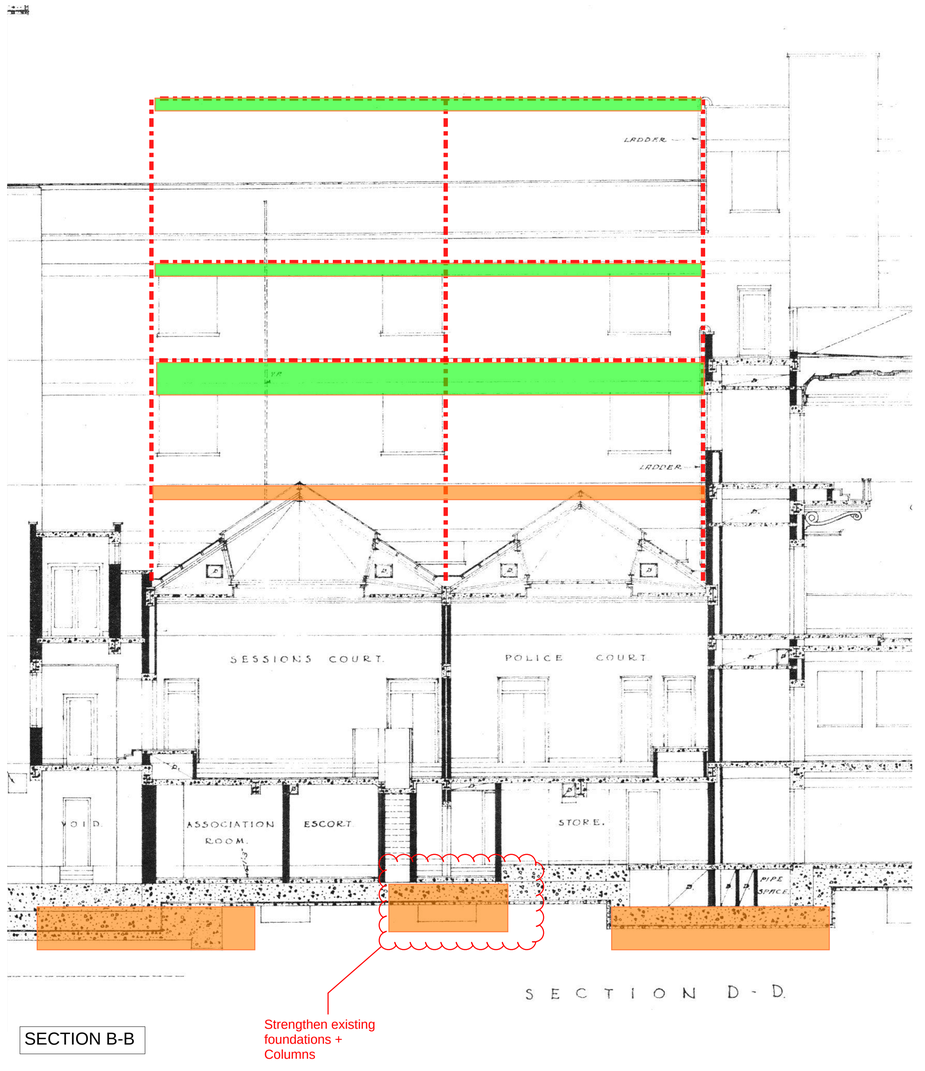


SECTION A-A



THIRD FLOOR PLAN

The proposed loading would increase by an order of magnitude of 3 times the existing! Strengthening works would be required to columns and the foundations



SECTION B-B

NOT FOR CONSTRUCTION

Rev	Date	Description	Drawn	Check
	07.06.24	Issued for comment	BH	BH

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Drawing Status
SCHEME DESIGN

Project
Cambridge Civic Quarter
Guildhall

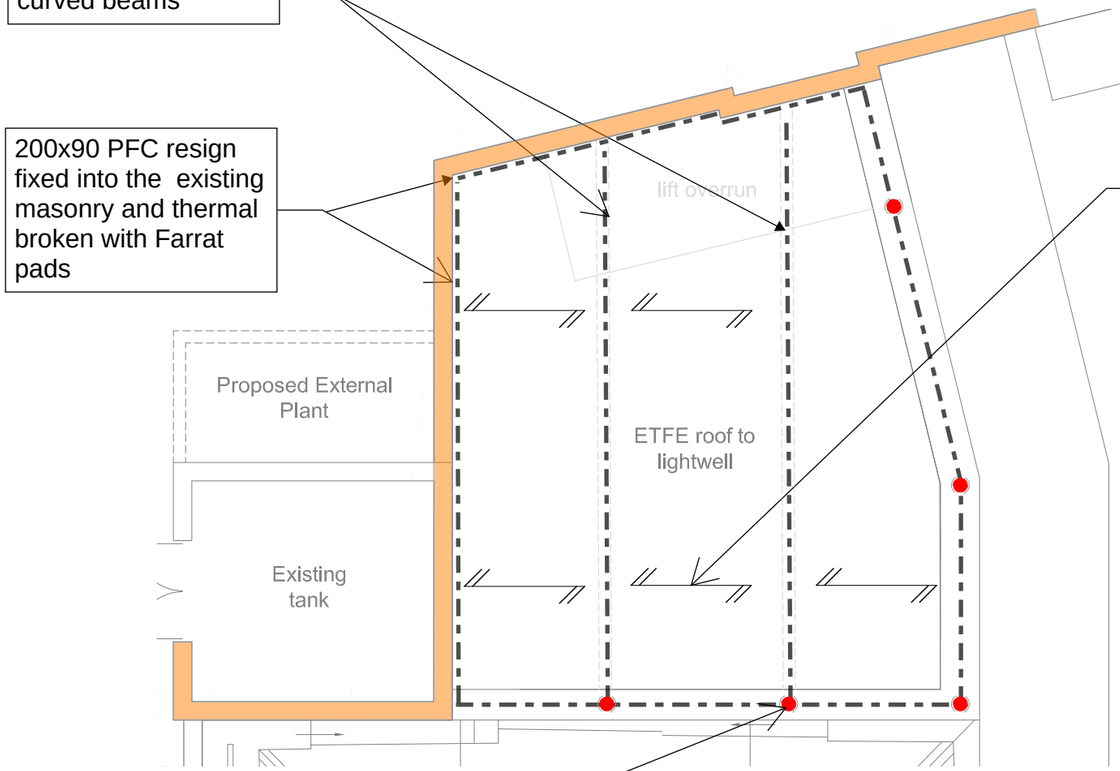
Title
Proposed Additional Storey - Court House Area

Drawing No
240007-CON-XX-00XDR-S-0004

Date 06.06.2024
Scale NTS
Drawn BH
Engineer BH
Project No 240007
Revision P1

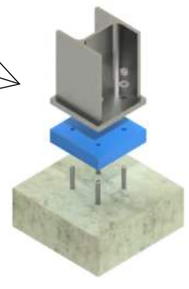
219 x 12.5 CHS curved beams

200x90 PFC resign fixed into the existing masonry and thermal broken with Farrat pads



ETFE Roof panels

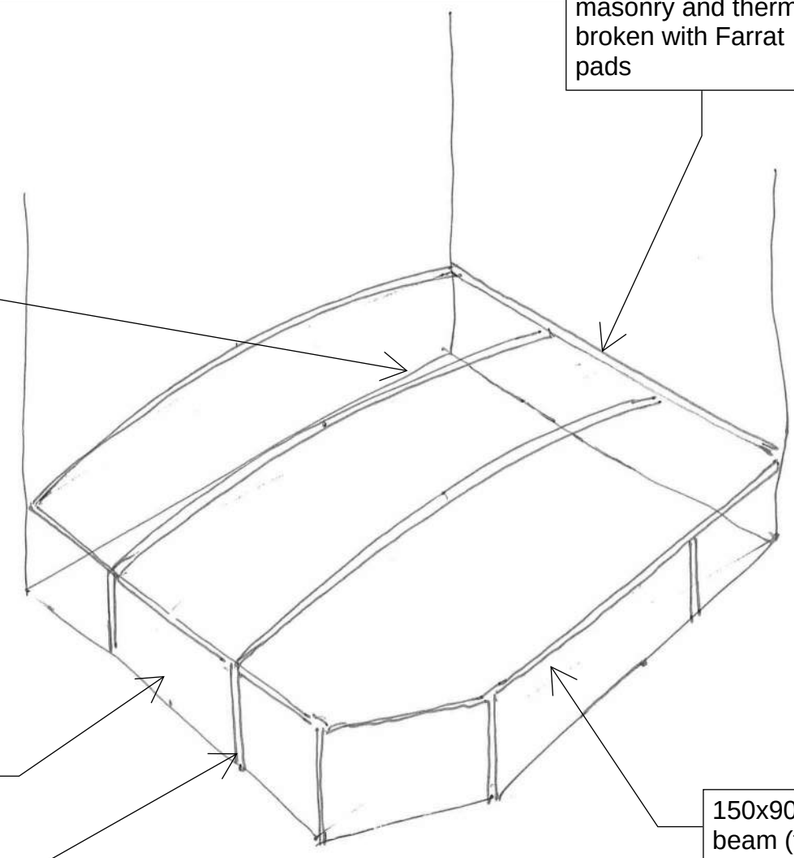
219 CHS post located on the line of the existing columns below. Thermal broken with a Farrat pads



ETFE Roof Support Framework

219 x 12.5 CHS curved beams

200x90 PFC resign fixed into the existing masonry and thermal broken with Farrat pads



Smoke vents/louvres/windows to open sides

150x90 PFC edge beam (toes down)

150x90 PFC post located on the line of the existing columns below. Thermal broken with a Farrat pads

Isometric View

THIS DRAWING MUST BE READ IN CONJUNCTION WITH THE SPECIFICATION AND ALL OTHER RELEVANT DRAWINGS. DO NOT SCALE FROM THIS DRAWING

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Project
Cambridge Civic Quarter Guildhall

Title
ETFE Roof Support

Rev	Date	Description		
P1	02.09.24	Preliminary Issue	BH	BH

Scale	Drawn	Engineer	Date
NTS	BH	BH	Aug 2024

Drawing Status	Project No	Revision
PRELIMINARY	240070	P1

Drawing No
240070-CON-XX-00-DR-S-0005

GENERAL NOTES

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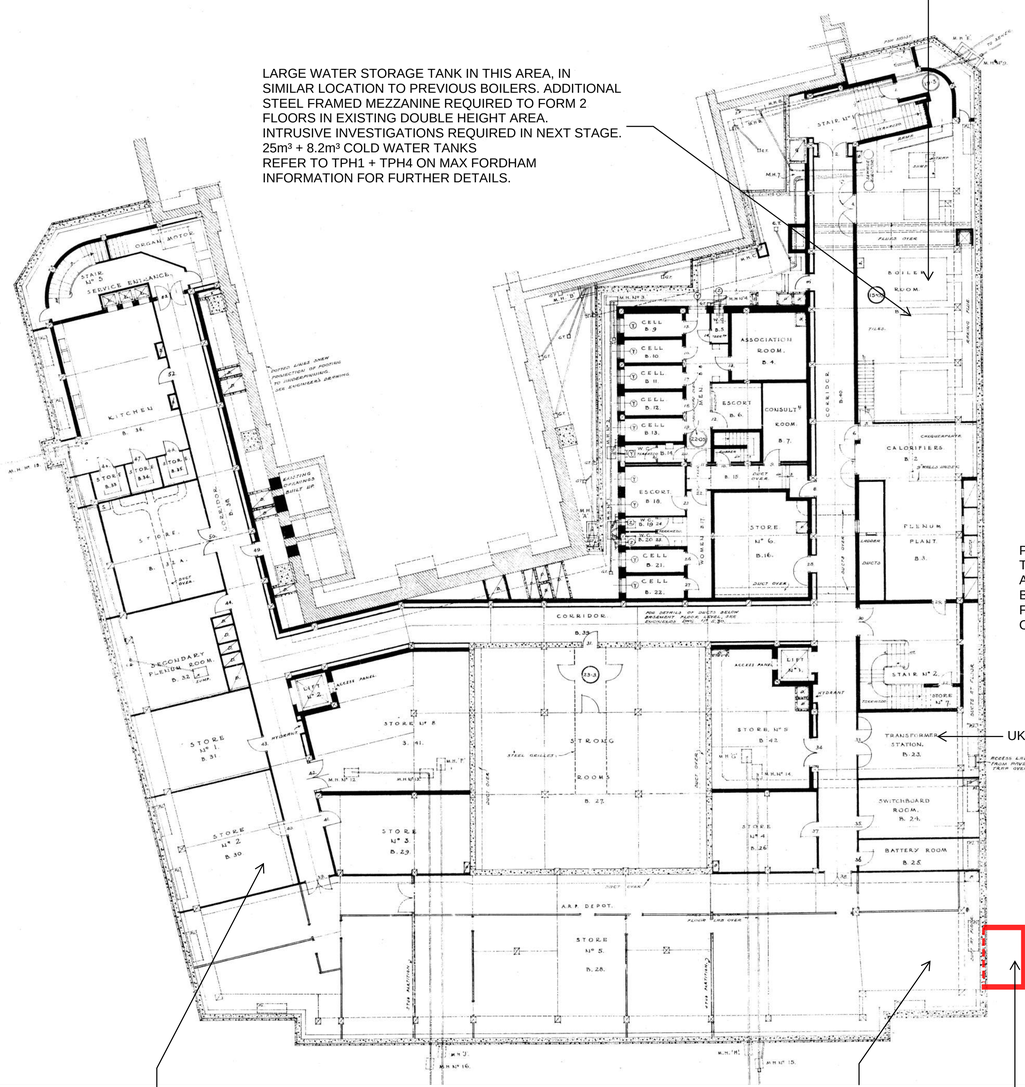
3. INCOMING SERVICE ROUTES TO BE AGREED IN NEXT STAGE.
4. SMALL BOILER TANKS UP TO 250l ARE WITHIN CURRENT FLOOR LOADING ALLOWANCE.
5. ALLOW FOR STEEL BEAMS TO TRIM PROPOSED OPENINGS THROUGH FLOORS.

EXISTING COKE SHUTE MAY REQUIRE REMOVAL TO FACILITATE NEW SERVICES. TBC BY INVESTIGATIONS IN NEXT STAGE.

LARGE WATER STORAGE TANK IN THIS AREA, IN SIMILAR LOCATION TO PREVIOUS BOILERS. ADDITIONAL STEEL FRAMED MEZZANINE REQUIRED TO FORM 2 FLOORS IN EXISTING DOUBLE HEIGHT AREA. INTRUSIVE INVESTIGATIONS REQUIRED IN NEXT STAGE. 25m³ + 8.2m³ COLD WATER TANKS REFER TO TPH1 + TPH4 ON MAX FORDHAM INFORMATION FOR FURTHER DETAILS.



UKPN SUBSTATION

PROPOSED DUCTS IN LIGHTWELLS. ALLOW FOR STEEL STRUCTURE TO SUPPORT DUCTS AND CLADDING.

2No LARGE WATER STORAGE TANK IN THIS AREA. THIS WILL REQUIRE STEEL FRAME TO TRANSFER LOAD BACK TO PRIMARY STRUCTURE. INTRUSIVE INVESTIGATIONS REQUIRED IN NEXT STAGE. 25m³ & 7.5m³ WATER TANK REFER TO CPH1 AND CPH4 ON MAX FORDHAM INFORMATION FOR FURTHER DETAILS

NEW UKPN SUBSTATION

NEW SUBSTATION ACCESS HATCH REQURING NEW RC RETAINING WALLS AND BASEMENT SLAB. NEW OPENING THROUGH WALL LIKELY TO REQUIRD STEEL BOX-FRAMING AND TEMPORARY WORKS

BASEMENT PLAN

SMALL WATER STORAGE TANK IN THIS AREA. THIS MAY REQUIRE STEEL FRAME TO TRANSFER LOAD BACK TO PRIMARY STRUCTURE. INTRUSIVE INVESTIGATIONS REQUIRED IN NEXT STAGE. OPTION 1: 0.75m³ HOT WATER TANK OPTION 2: NONE REFER TO CPH2 ON MAX FORDHAM INFORMATION FOR FURTHER DETAILS.

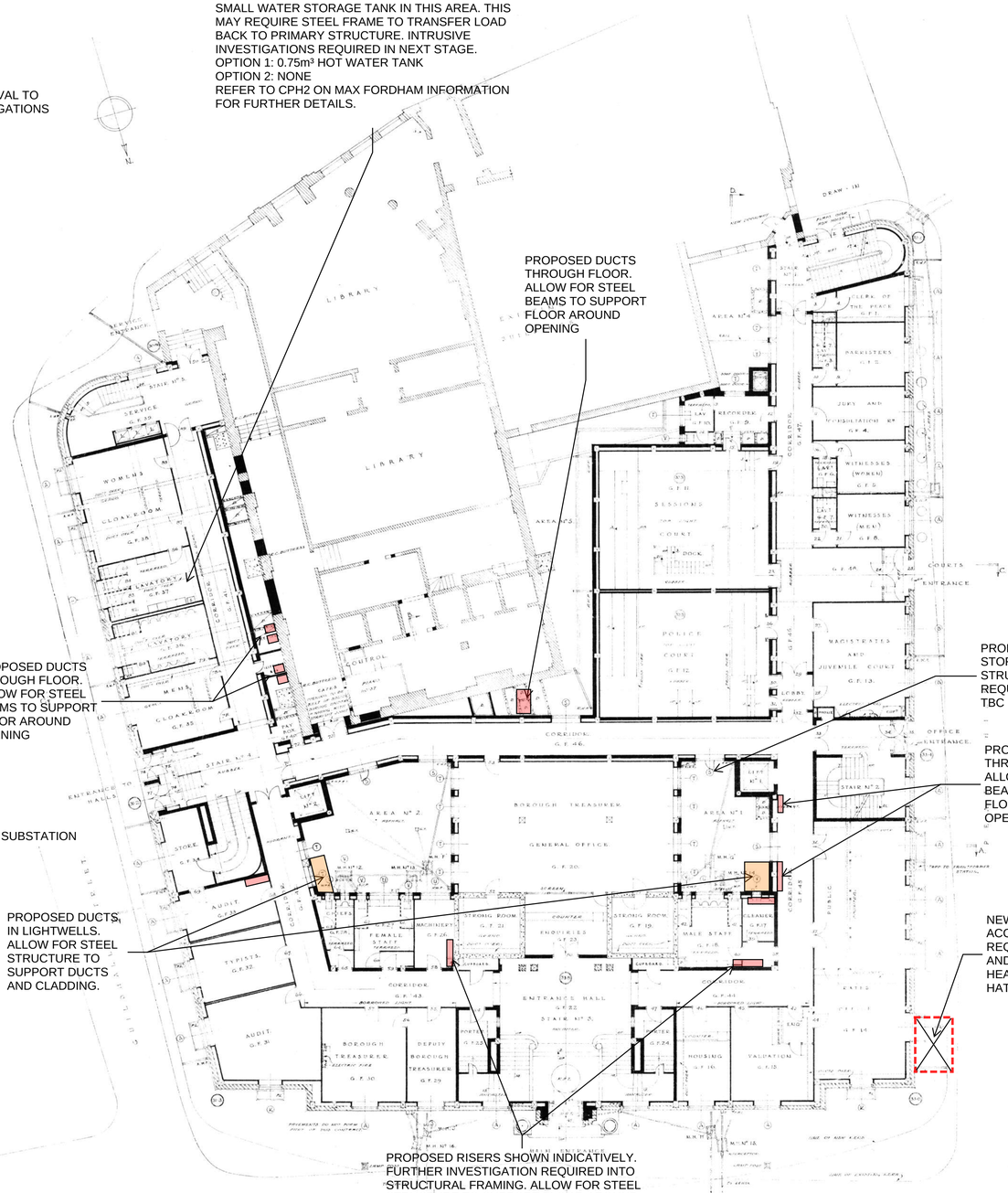
PROPOSED DUCTS THROUGH FLOOR. ALLOW FOR STEEL BEAMS TO SUPPORT FLOOR AROUND OPENING

PROPOSED DUCTS THROUGH FLOOR. ALLOW FOR STEEL BEAMS TO SUPPORT FLOOR AROUND OPENING

PROPOSED BIKE STORE LIFT. STRUCTURAL REQUIREMENTS TBC

PROPOSED DUCTS THROUGH FLOOR. ALLOW FOR STEEL BEAMS TO SUPPORT FLOOR AROUND OPENING

NEW SUBSTATION ACCESS HATCH REQURING FRAMING AND SUPPORT TO HEAVY DUTY ACCESS HATCH DOORS



PROPOSED RISERS SHOWN INDICATIVELY. FURTHER INVESTIGATION REQUIRED INTO STRUCTURAL FRAMING. ALLOW FOR STEEL STRUCTURE TO SUPPORT FLOOR AROUND RISER. REFER TO MAX FORDHAM FOR LOCATION AND NUMBER.

GROUND FLOOR PLAN

NOT FOR CONSTRUCTION

Rev	Date	Description	Drawn	Check
	14.10.2024	PRELIMINARY ISSUE	SM	PB
	10.09.2024	PRELIMINARY ISSUE	SM	PB

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Drawing Status: Scheme Design

Project: Cambridge Civic Quarter Corn Exchange

Title: PLANT - STRUCTURAL CONSIDERATIONS BASEMENT & GROUND FLOOR

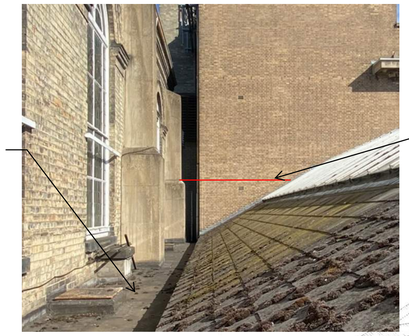
Drawing No: 240070-CON-XX-00-DR-S-0011

Date: SEPT 2024
Scale: 1:100
Drawn: SM
Engineer: SM
Project No: 240070
Revision: P2

PHOTOGRAPH LOOKING DOWN FROM WESTERN ROOF

PROPOSED PLATFORM FOR PLANT. STEEL GRILLAGE TO BE SUPPORTED OF EXISTING MASONRY WALLS. FLOOR STRUCTURE TBC.

SUGGEST PLANT IS LOCATED ON EXISTING FLAT AREA



PHOTOGRAPH OF SMALL HALL ROOF

APPROXIMATE PROPOSED PLANT PLATFORM OVER EXISTING PITCHED ROOF. UNLIKELY TO BE FEASIBILE.

ALLOW FOR SPREADERS FOR AHU AND MVHR

PROPOSED DUCTS THROUGH FLOOR. ALLOW FOR STEEL BEAMS TO SUPPORT FLOOR AROUND OPENING

PROPOSED DUCTS THROUGH FLOOR. ALLOW FOR STEEL BEAMS TO SUPPORT FLOOR AROUND OPENING

PROPOSED PLATFORM FOR VENTILATION EQUIPMENT ABOVE SMALL HALL. ALLOW FOR STEEL STRUCTURE. TO BE SUPPORTED AT ROOF LEVEL. FURTHER INVESTIGATION REQUIRED TO ROOF TO DETERMINE THE SUITABILITY. SUGGEST THAT THE PLANT IS RELOCATED TO FLAT ROOF DIRECTLY ADJACENT TO LARGE ROOM.

PROPOSED DUCTS THROUGH FLOOR. ALLOW FOR STEEL BEAMS TO SUPPORT FLOOR AROUND OPENING

PROPOSED DUCTS THROUGH FLOOR. ALLOW FOR STEEL BEAMS TO SUPPORT FLOOR AROUND OPENING

PROPOSED DUCTS THROUGH FLOOR. ALLOW FOR STEEL BEAMS TO SUPPORT FLOOR AROUND OPENING

PROPOSED DUCTS IN LIGHTWELLS. ALLOW FOR STEEL STRUCTURE TO SUPPORT DUCTS AND CLADDING. EXISTING DRAINAGE TO BE CONSIDERED. -SEE PHOTO

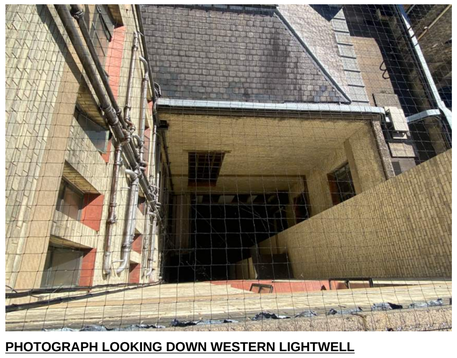
PROPOSED DUCTS IN LIGHTWELLS. ALLOW FOR STEEL STRUCTURE TO SUPPORT DUCTS AND CLADDING.

PROPOSED RISERS SHOWN INDICATIVELY. FURTHER INVESTIGATION REQUIRED INTO STRUCTURAL FRAMING. ALLOW FOR STEEL STRUCTURE TO SUPPORT FLOOR AROUND RISER. REFER TO MAX FORDHAM FOR LOCATION AND NUMBER.

FIRST FLOOR PLAN

PROPOSED RISERS SHOWN INDICATIVELY. FURTHER INVESTIGATION REQUIRED INTO STRUCTURAL FRAMING. ALLOW FOR STEEL STRUCTURE TO SUPPORT FLOOR AROUND RISER. REFER TO MAX FORDHAM FOR LOCATION AND NUMBER.

SECOND FLOOR PLAN



PHOTOGRAPH LOOKING DOWN WESTERN LIGHTWELL

PHOTOGRAPH LOOKING DOWN EASTERN LIGHTWELL

GENERAL NOTES

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3. INCOMING SERVICE ROUTES TO BE AGREED IN NEXT STAGE.
4. SMALL BOILER TANKS UP TO 250l ARE WITHIN CURRENT FLOOR LOADING ALLOWANCE.
5. ALLOW FOR STEEL BEAMS TO TRIM PROPOSED OPENINGS THROUGH FLOORS.

NOT FOR CONSTRUCTION

Rev	Date	Description	Drawn	Check
	14.10.2024	PRELIMINARY ISSUE	SM	PB
	10.09.2024	PRELIMINARY ISSUE	SM	PB

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Drawing Status
Scheme Design

Project
Cambridge Civic Quarter
Guild Hall

Date SEPT 2024
Scale 1:100
Drawn SM
Engineer SM

Title
PLANT - STRUCTURAL CONSIDERATIONS FIRST & SECOND FLOOR

Project No
240070

Drawing No
240070-CON-XX-00-DR-S-0012

Revision
P2

GENERAL NOTES

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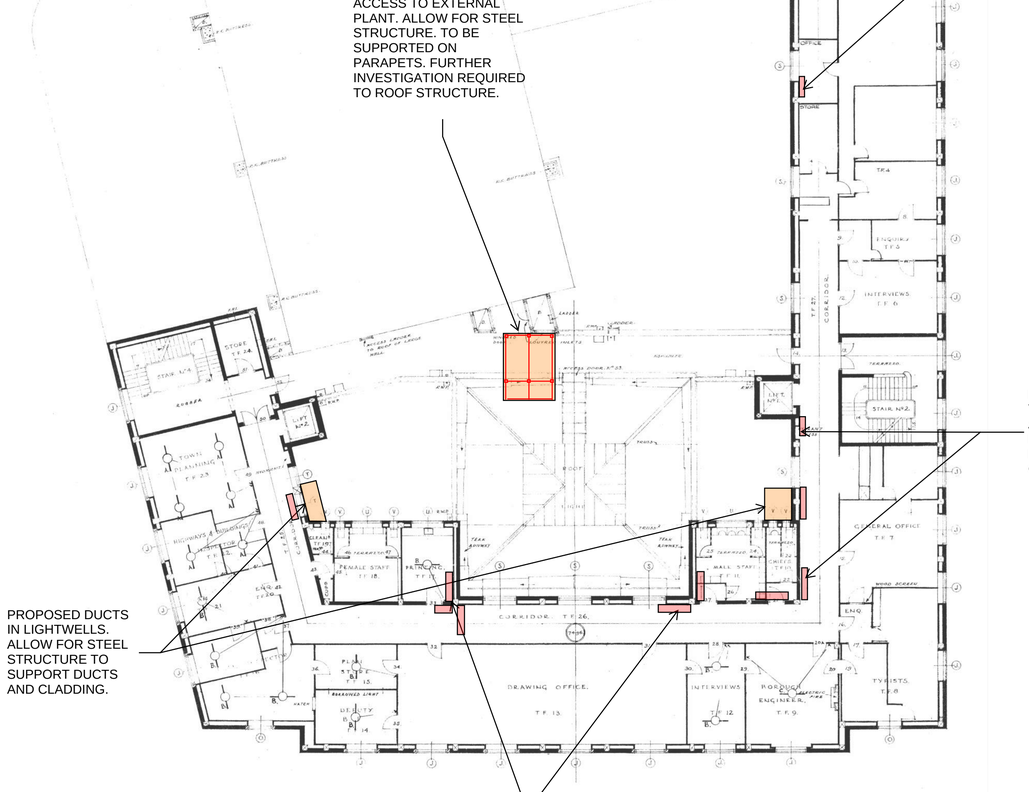
5. ALLOW FOR STEEL BEAMS TO TRIM PROPOSED OPENINGS THROUGH FLOORS.

PHOTOGRAPH OF CHAMBER ROOF AND REAR OF LARGE ROOM

PROPOSED PLATFORM FOR ACCESS TO EXTERNAL PLANT. ALLOW FOR STEEL STRUCTURE. TO BE SUPPORTED ON PARAPETS. FURTHER INVESTIGATION REQUIRED TO ROOF STRUCTURE.



PROPOSED DUCTS THROUGH FLOOR. ALLOW FOR STEEL BEAMS TO SUPPORT FLOOR AROUND OPENING

PROPOSED DUCTS THROUGH FLOOR. ALLOW FOR STEEL BEAMS TO SUPPORT FLOOR AROUND OPENING

PROPOSED DUCTS IN LIGHTWELLS. ALLOW FOR STEEL STRUCTURE TO SUPPORT DUCTS AND CLADDING.

PROPOSED RISERS SHOWN INDICATIVELY. FURTHER INVESTIGATION REQUIRED INTO STRUCTURAL FRAMING. ALLOW FOR STEEL STRUCTURE TO SUPPORT FLOOR AROUND RISER. REFER TO MAX FORDHAM FOR LOCATION AND NUMBER.

THIRD FLOOR PLAN

PROPOSED DUCTS THROUGH FLOOR. ALLOW FOR STEEL BEAMS TO SUPPORT FLOOR AROUND OPENING

PROPOSED DUCTS THROUGH FLOOR. ALLOW FOR STEEL BEAMS TO SUPPORT FLOOR AROUND OPENING

PROPOSED DUCTS IN LIGHTWELLS. ALLOW FOR STEEL STRUCTURE TO SUPPORT DUCTS AND CLADDING.

PROPOSED RISERS SHOWN INDICATIVELY. FURTHER INVESTIGATION REQUIRED INTO STRUCTURAL FRAMING. ALLOW FOR STEEL STRUCTURE TO SUPPORT FLOOR AROUND RISER. REFER TO MAX FORDHAM FOR LOCATION AND NUMBER.

FOURTH FLOOR PLAN

NOT FOR CONSTRUCTION

Rev	Date	Description	Drawn	Check
	14.10.2024	PRELIMINARY ISSUE	SM	PB
	10.09.2024	PRELIMINARY ISSUE	SM	PB

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Drawing Status: Scheme Design

Project: Cambridge Civic Quarter Guild Hall

Title: PLANT - STRUCTURAL CONSIDERATIONS THIRD & FOURTH FLOOR

Drawing No: 240070-CON-XX-00-DR-S-0013

Date: SEPT 2024
Scale: 1:100
Drawn: SM
Engineer: SM
Project No: 240070
Revision: P2

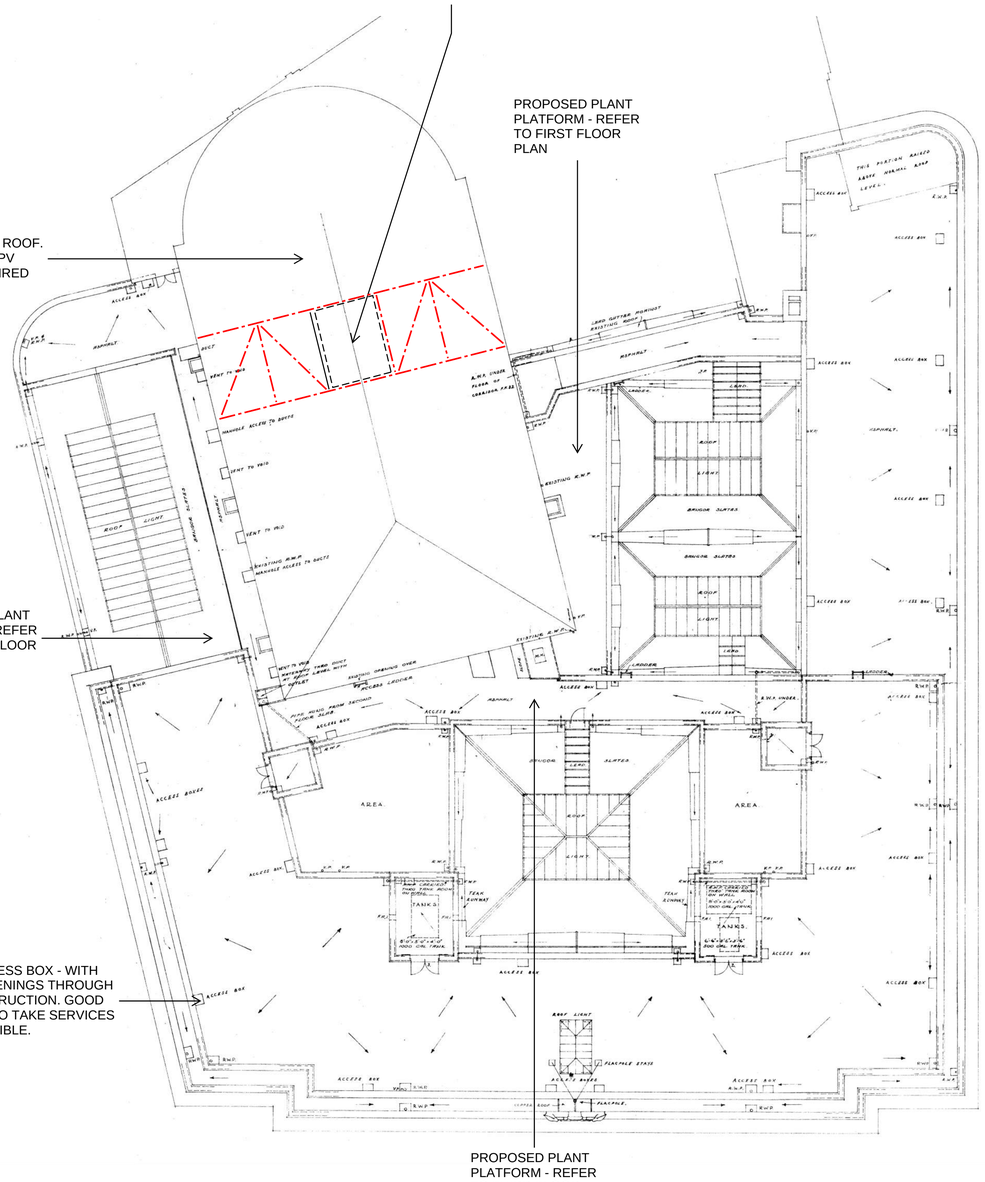
MVHR LOCATION TO BE RESOLVED:
UNLIKELY THAT THE EXSITING TIMBER ROOF STRUCTURE VOID WILL HAVE CAPACITY AND MODIFCIATION OF EXISTING BRACES REQUIRED TO PROVIDE CLEAR SPACE (REFER TO PHOTO).
ALLOW FOR NEW CRANKED STEEL LADDER FRAMING WITH PLAN BRACING TO FOLLOW CEILING PROFILE AND TRANSFER LOAD TO MASS-MASONRY WALLS OF HALL

PROPOSED PLANT PLATFORM - REFER TO FIRST FLOOR PLAN

PV PANELS ON ROOF. LIGHTWEIGHT PV SYSTEM REQUIRED

PROPOSED PLANT PLATFORM - REFER TO SECOND FLOOR PLAN

TYPICAL ACCESS BOX - WITH EXISTING OPENINGS THROUGH ROOF CONSTRUCTION. GOOD LOCATIONS TO TAKE SERVICES WHERE POSSIBLE.



PROPOSED PLANT PLATFORM - REFER TO THIRD FLOOR PLANS

ROOF PLAN

PHOTOGRAPH OF ROOF VOID ABOVE LARGE ROOM

EASTERN LIFT OVERRUN

ACCESS BOX

PHOTOGRAPH OF ROOF SHOWING PV, EDGE PROTECTION AND ACCESS BOX

GENERAL NOTES

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3. INCOMING SERVICE ROUTES TO BE AGREED IN NEXT STAGE.
4. SMALL BOILER TANKS UP TO 250l ARE WITHIN CURRENT FLOOR LOADING ALLOWANCE.
5. ALLOW FOR STEEL BEAMS TO TRIM PROPOSED OPENINGS THROUGH FLOORS.

NOT FOR CONSTRUCTION

Rev	Date	Description	Drawn	Check
	14.10.2024	PRELIMINARY ISSUE	SM	PB
	10.09.2024	PRELIMINARY ISSUE	SM	PB

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Drawing Status: Scheme Design

Project: Cambridge Civic Quarter
Guild Hall

Title: PLANT - STRUCTURAL CONSIDERATIONS ROOF

Drawing No: 240070-CON-XX-00-DR-S-0014

Date: SEPT 2024
Scale: 1:100
Drawn: SM
Engineer: SM
Project No: 240070
Revision: P2

PROPOSED PLANT PLATFORM - SUPPORTED FROM EXISTING WALLS OF LARGE ROOM AND SESSIONS/ POLICE COURTS

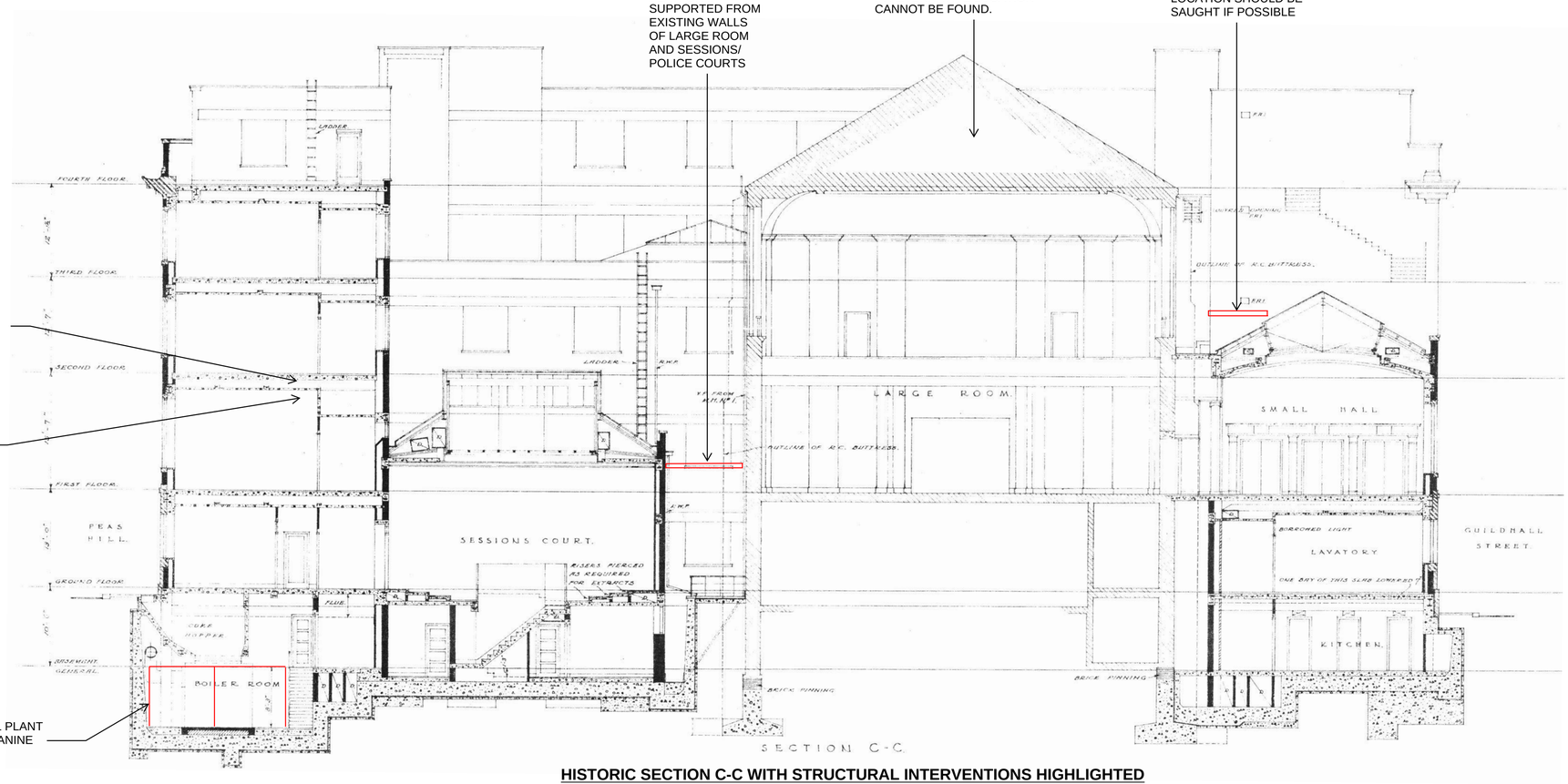
PROPOSED MVHR LOCATION - CURRENT STRUCTURE UNLIKELY TO BE ABLE TO SUPPORT PLANT. ALLOW FOR LARGE STEEL BEAMS IN ALTERNATIVE LOCATION CANNOT BE FOUND.

PROPOSED PLANT PLATFORM - SUPPORTED FROM SMALL HALL ROOF - ALTERNATIVE PLANT LOCATION SHOULD BE SAUGHT IF POSSIBLE

PRECAST CONCRETE SLABS BETWEEN CONCRETE ENCASED STEEL BEAMS

INSITU CONCRETE CEILING SLAB - FURTHER INVESTIGATION REQUIRED.

PROPOSED STEEL PLANT PLATFORM/ MEZZANINE STRUCTURE



HISTORIC SECTION C-C WITH STRUCTURAL INTERVENTIONS HIGHLIGHTED

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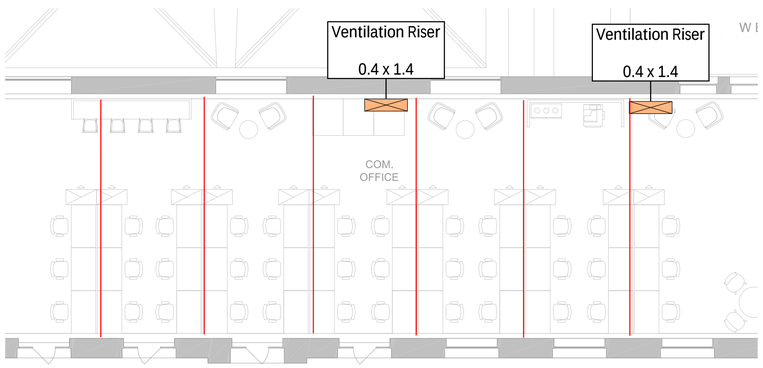
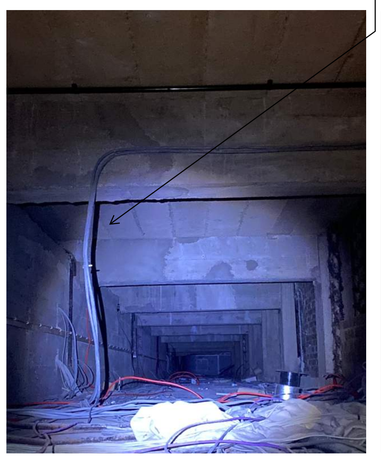
5. ALLOW FOR STEEL BEAMS TO TRIM PROPOSED OPENINGS THROUGH FLOORS.



TYPICAL WEST WING OFFICE RISER LAYOUT
LIKELY ENCASED BEAM LOCATIONS SHOWN IN RED (TO BE AVOIDED)

RISERS SHOULD RISE INBETWEEN BEAMS SO THAT MINIMAL FLOOR DISRUPTION IS REQUIRED. CONCRETE ENCASED BEAMS TO REMAIN INSITU.

SOME EXISTING CABLING MOVES BETWEEN FLOORS IN THE WALL VOID.



PHOTOGRAPHS SHOWING THE VOID ABOVE INSITU CEILING & EXISTING PRECAST FLOOR BEAMS AND ENCASED STEELWORK ABOVE

NOT FOR CONSTRUCTION

Rev	Date	Description	Drawn	Check
	10.09.24	PRELIMINARY ISSUE	SM	SM

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Drawing Status: Scheme Design

Project: Cambridge Civic Quarter Corn Exchange

Date: SEPT 2024
Scale: 1:100
Drawn: SM
Engineer: SM

Title: PLANT - STRUCTURAL CONSIDERATIONS SECTION & HOTEL ROOM RISERS

Project No: 240070

Drawing No: 240070-CON-XX-00-DR-S-0015

Revision: P1

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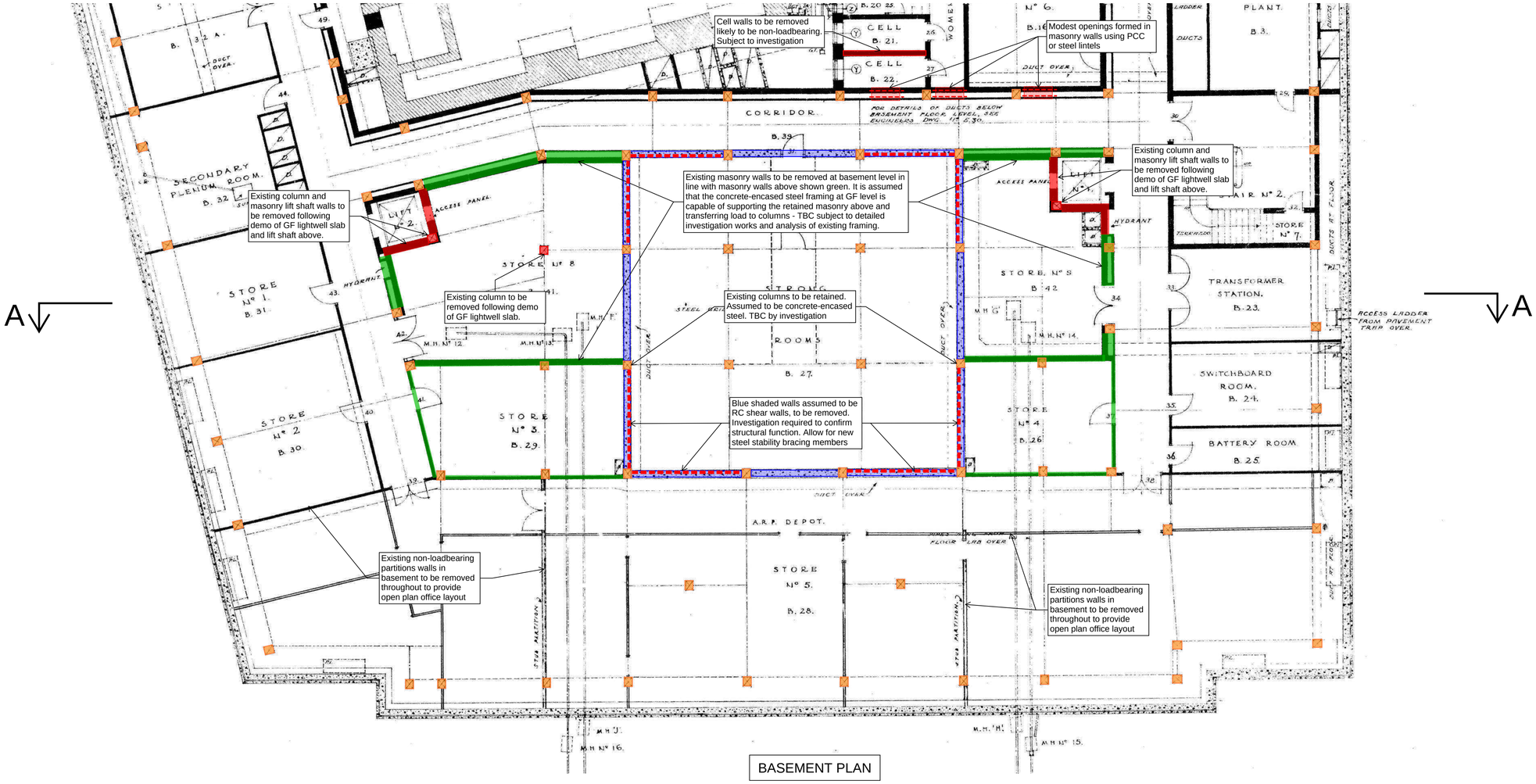
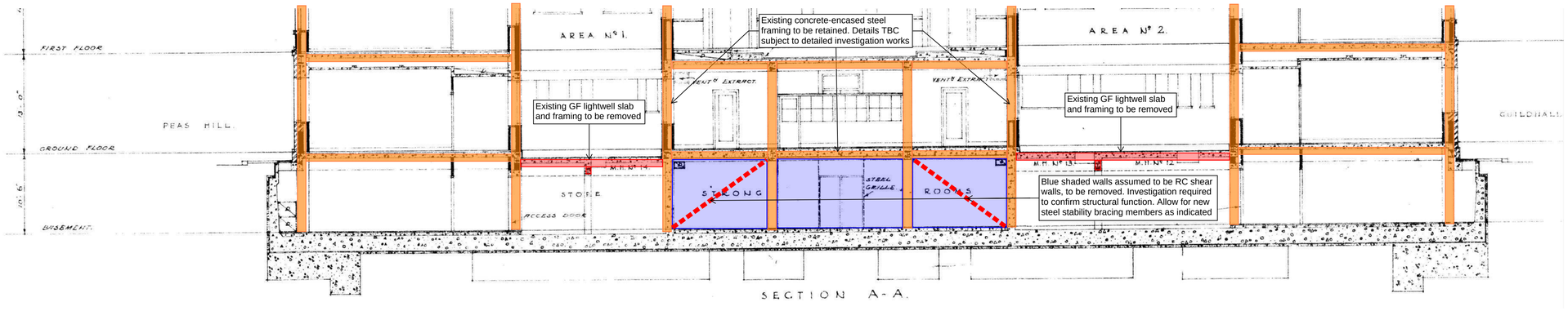


BASEMENT PLAN



SECTION A-A

NOT FOR CONSTRUCTION

Rev	Date	Description	Drawn	Check
	09.09.24	Issued for comment	PB	-

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Drawing Status: SCHEME DESIGN

Project: Cambridge Civic Quarter Guildhall

Title: Existing Basement wall removal

Drawing No: 240007-CON-XX-00XDR-S-0016

Date: AUG 2024
Scale: NTS
Drawn: PB
Engineer: BH
Project No: 240007
Revision: P1

GENERAL NOTES

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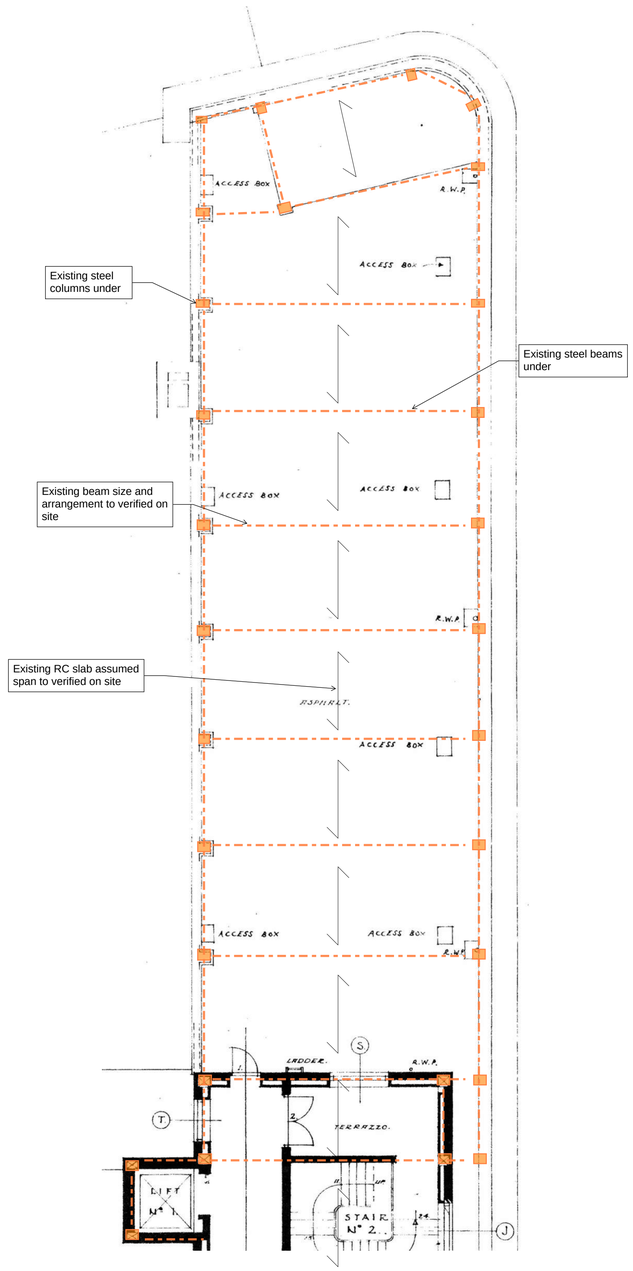
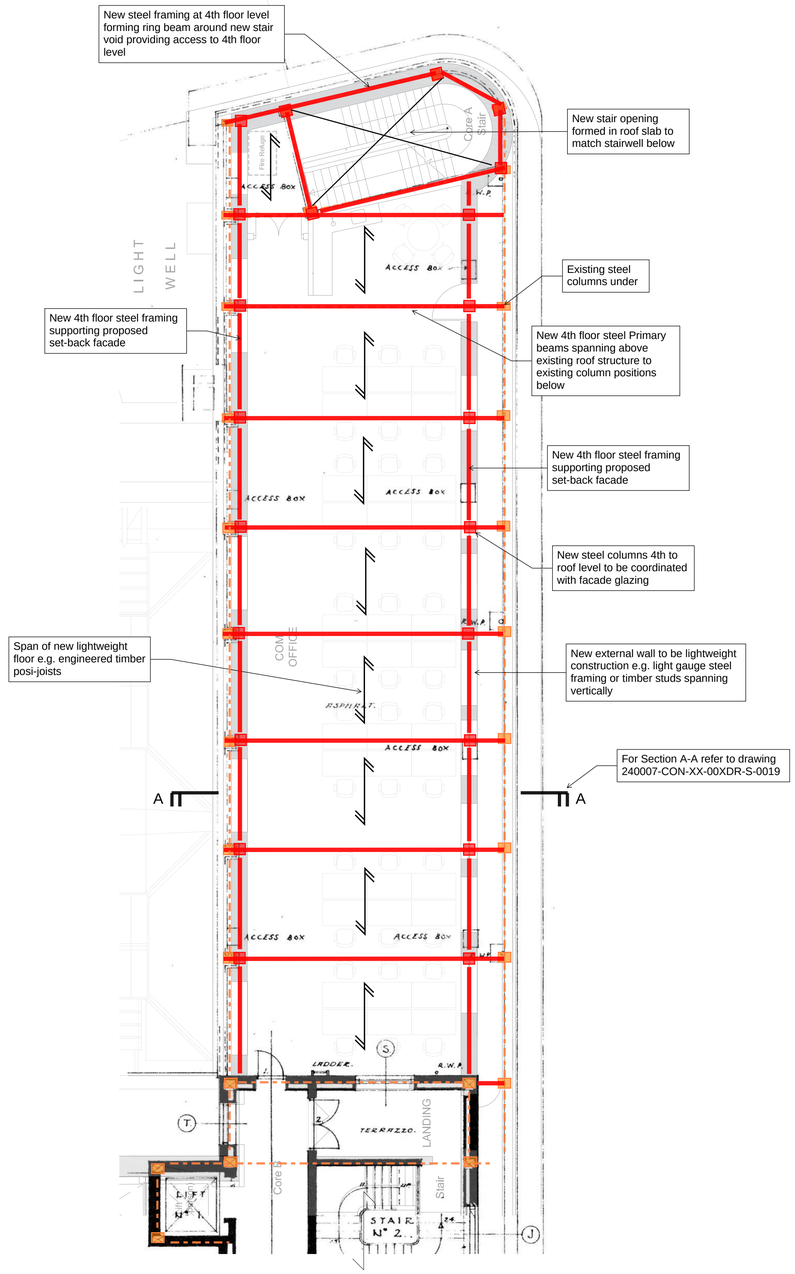


EXISTING WEST WING ROOF PLAN AT 4TH FLOOR LEVEL



PROPOSED 4TH FLOOR PLAN

NOT FOR CONSTRUCTION

Rev	Date	Description	Drawn	Check
P1	14.10.24	Stage 2 Issue	PB	PB

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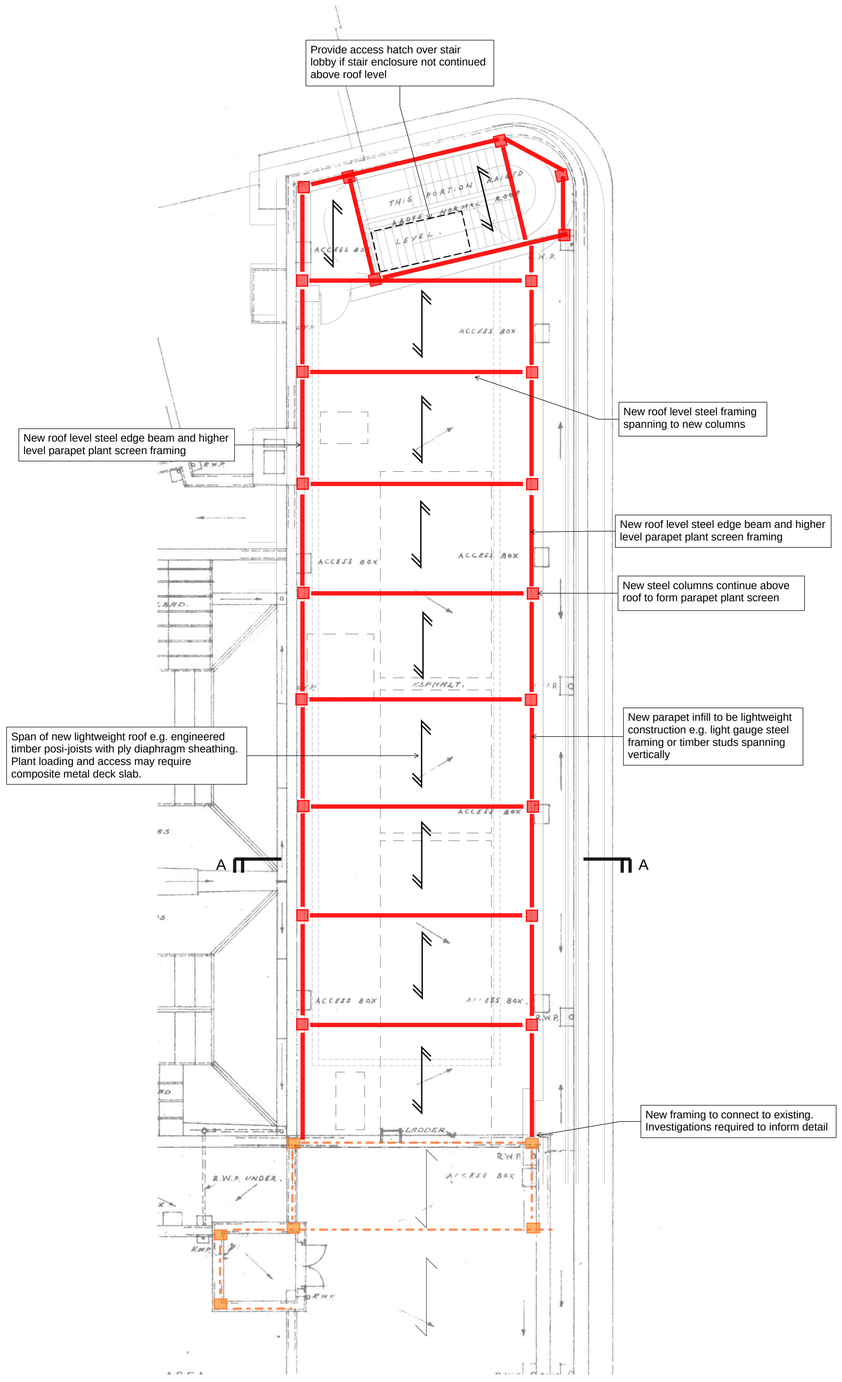
Drawing Status
SCHEME DESIGN

Project
Cambridge Civic Quarter
Guildhall

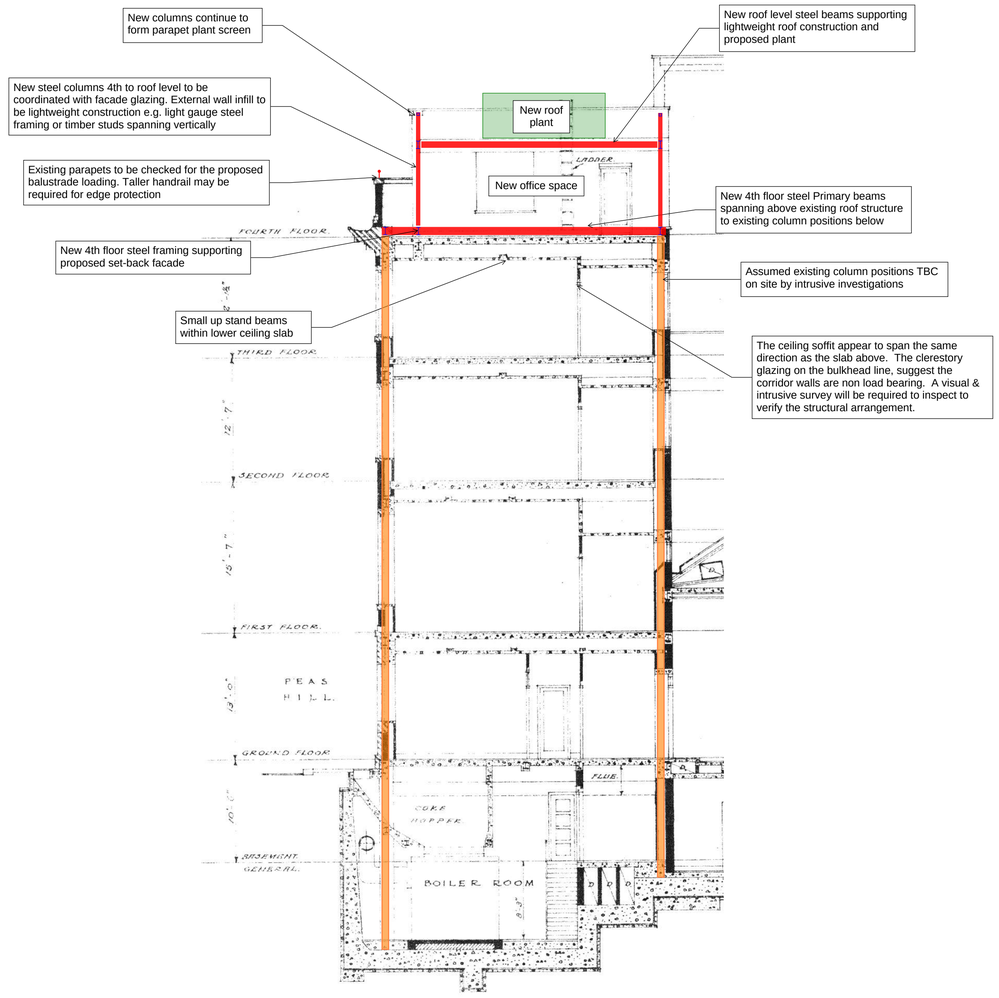
Title
West Wing - Proposed Extension
Existing Roof & Proposed 4th Floor Plans

Drawing No
240007-CON-XX-ZZ-DR-S-0018

Date OCT 2024
Scale NTS
Drawn PB
Engineer PB
Project No 240070
Revision P1



PROPOSED ROOF PLAN



SECTION A-A

GENERAL NOTES

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NOT FOR CONSTRUCTION

Rev	Date	Description	Drawn	Check
P1	14.10.24	Stage 2 Issue	PB	PB

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Drawing Status
SCHEME DESIGN

Project
Cambridge Civic Quarter
Guildhall

Title
West Wing - Proposed Extension
Proposed Roof Plan & Section A-A

Drawing No
240007-CON-XX-ZZ-DR-S-0019

Date OCT 2024
Scale NTS
Drawn PB
Engineer PB
Project No 240070
Revision P1

GENERAL NOTES

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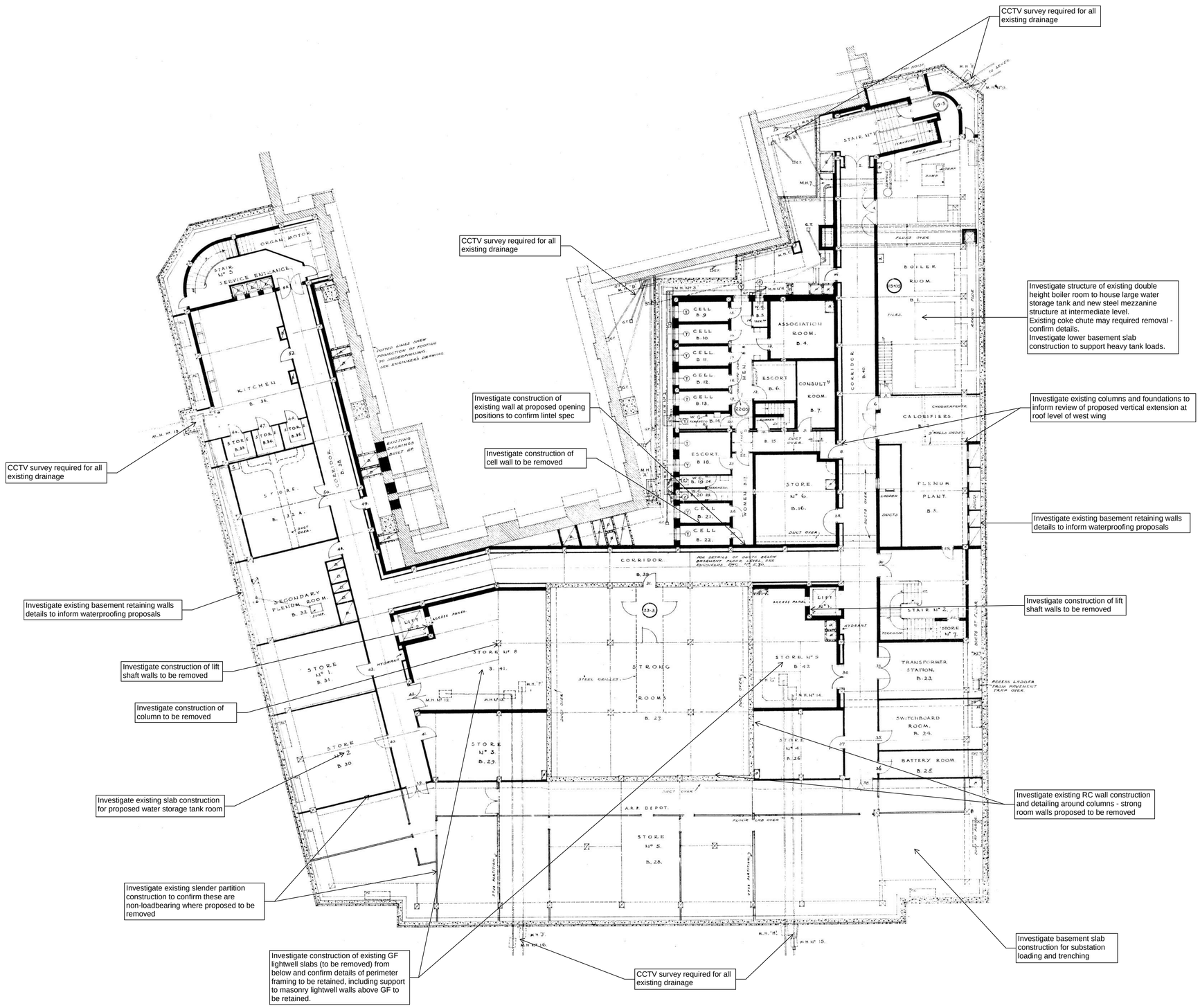

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Rev	Date	Description	Drawn	Check
P1	14.10.24	Stage 2 Issue	PB	-

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Drawing Status
Investigations Scope

Project
Cambridge Civic Quarter
Guildhall

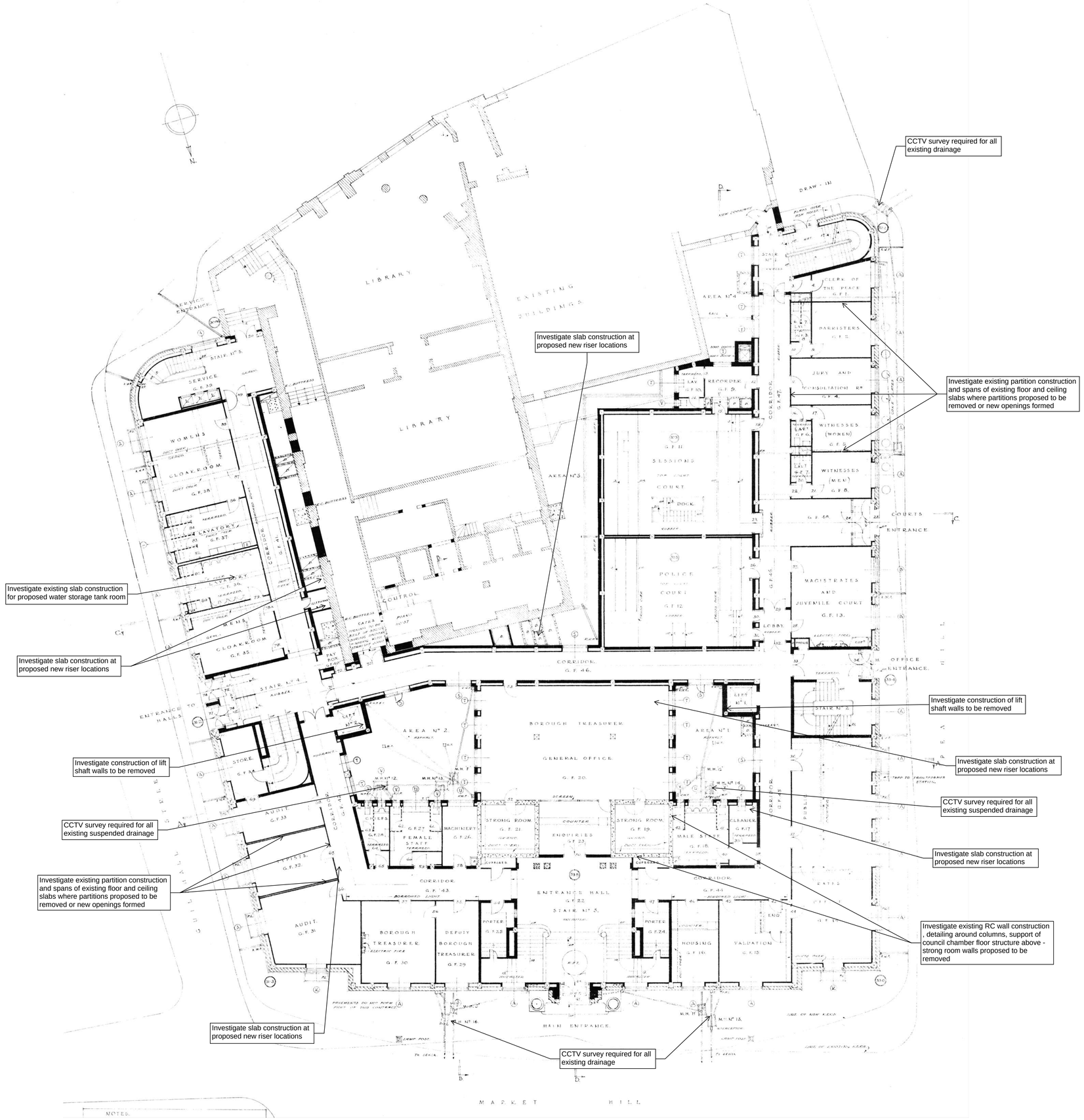
Date Oct 2024
Scale NTS
Drawn PB
Engineer PB

Title
Basement
Required Investigations

Project No
240070

Drawing No
240070-CON-XX-B1-DR-S-0199

Revision
P1



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Drawing Status
Investigations Scope

Project
Cambridge Civic Quarter
Guildhall

Title
Ground Floor
Required Investigations

Drawing No
240070-CON-XX-00-DR-S-0200

Date	Oct 2024
Scale	NTS
Drawn	PB
Engineer	PB
Project No	240070
Revision	P1

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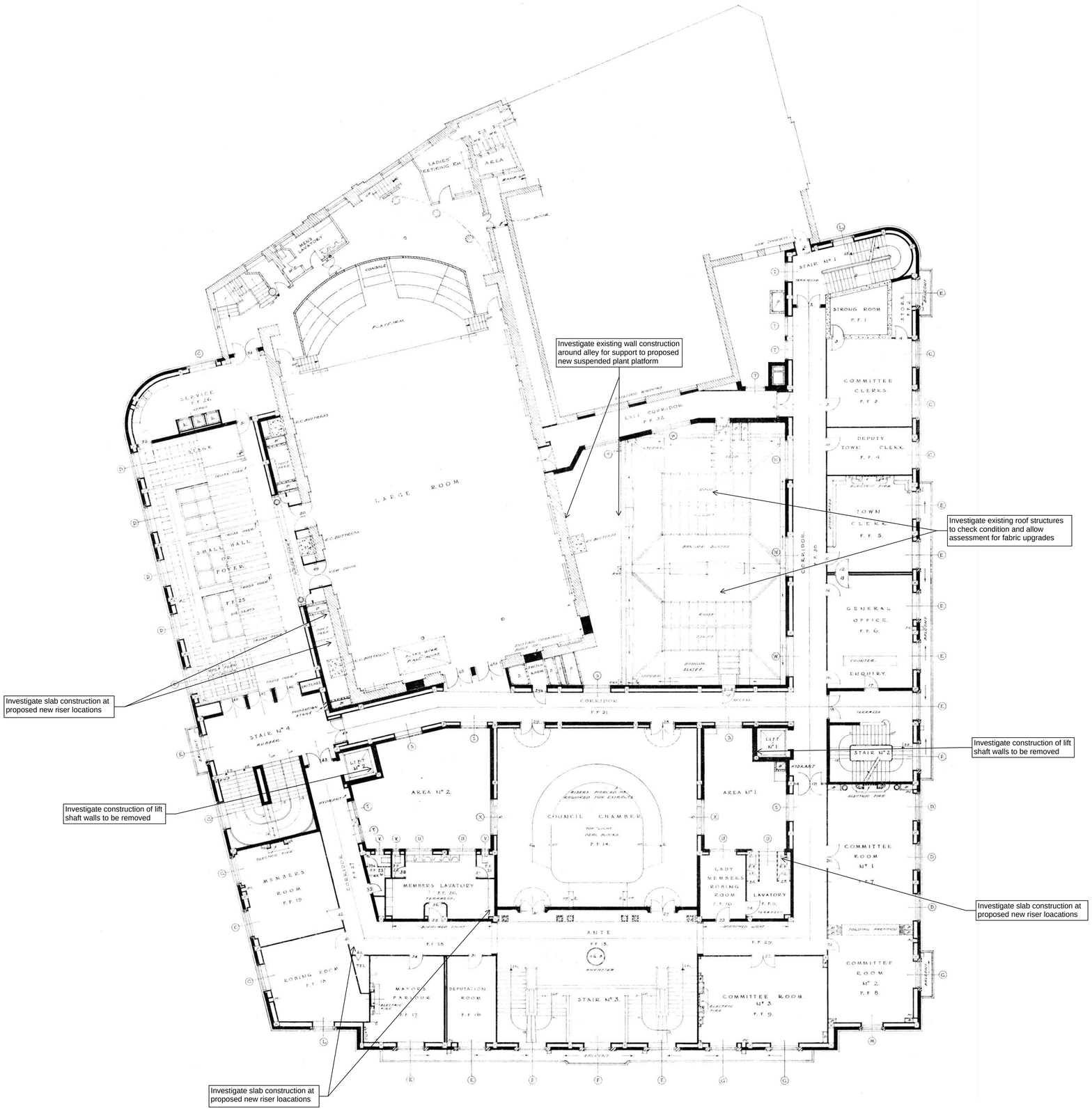

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P1	14.10.24	Stage 2 Issue	PB	-

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Drawing Status
Investigations Scope

Project
Cambridge Civic Quarter
Guildhall

Title
First Floor
Required Investigations

Drawing No
240070-CON-XX-01-DR-S-0201

Date	Oct 2024
Scale	NTS
Drawn	PB
Engineer	PB
Project No	240070
Revision	P1

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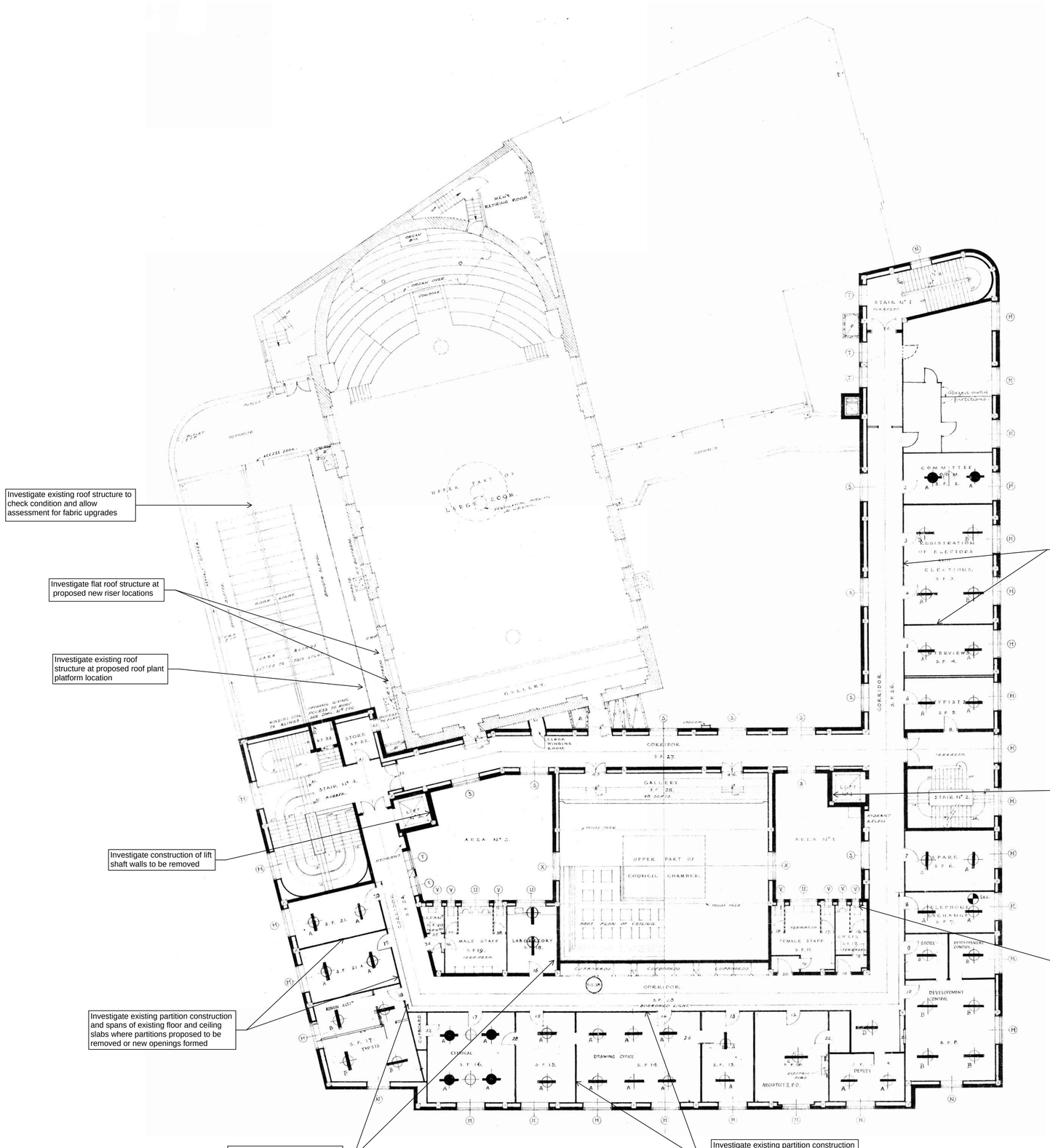

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Drawing Status
Investigations Scope

Project
Cambridge Civic Quarter
Guildhall

Title
Second Floor
Required Investigations

Drawing No
240070-CON-XX-02-DR-S-0202

Date	Oct 2024
Scale	NTS
Drawn	PB
Engineer	PB
Project No	240070
Revision	P1

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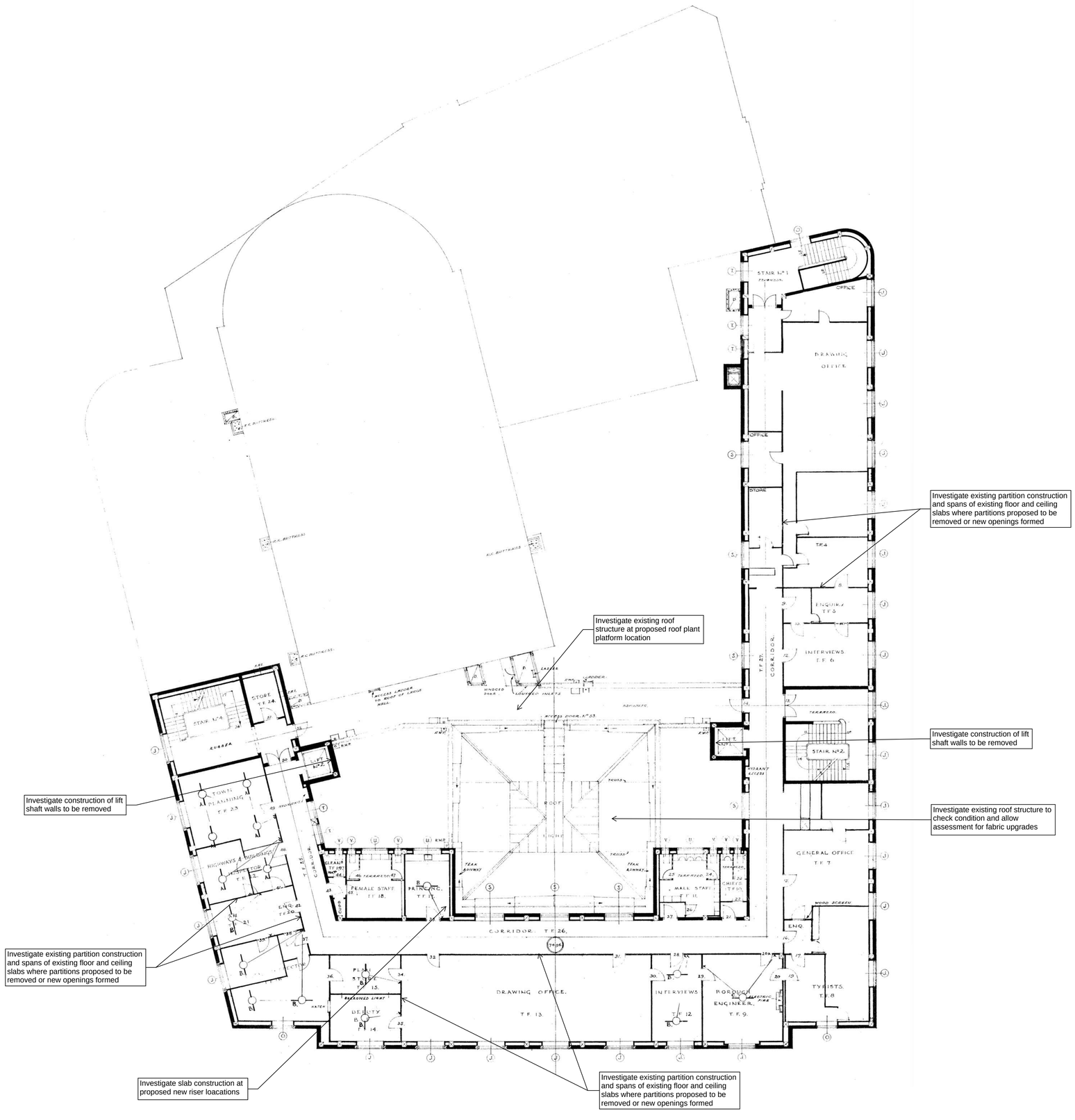

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Drawing Status
Investigations Scope

Project
Cambridge Civic Quarter
Guildhall

Title
Third Floor
Required Investigations

Drawing No
240070-CON-XX-03-DR-S-0203

Date Oct 2024
Scale NTS
Drawn PB
Engineer PB
Project No 240070
Revision P1

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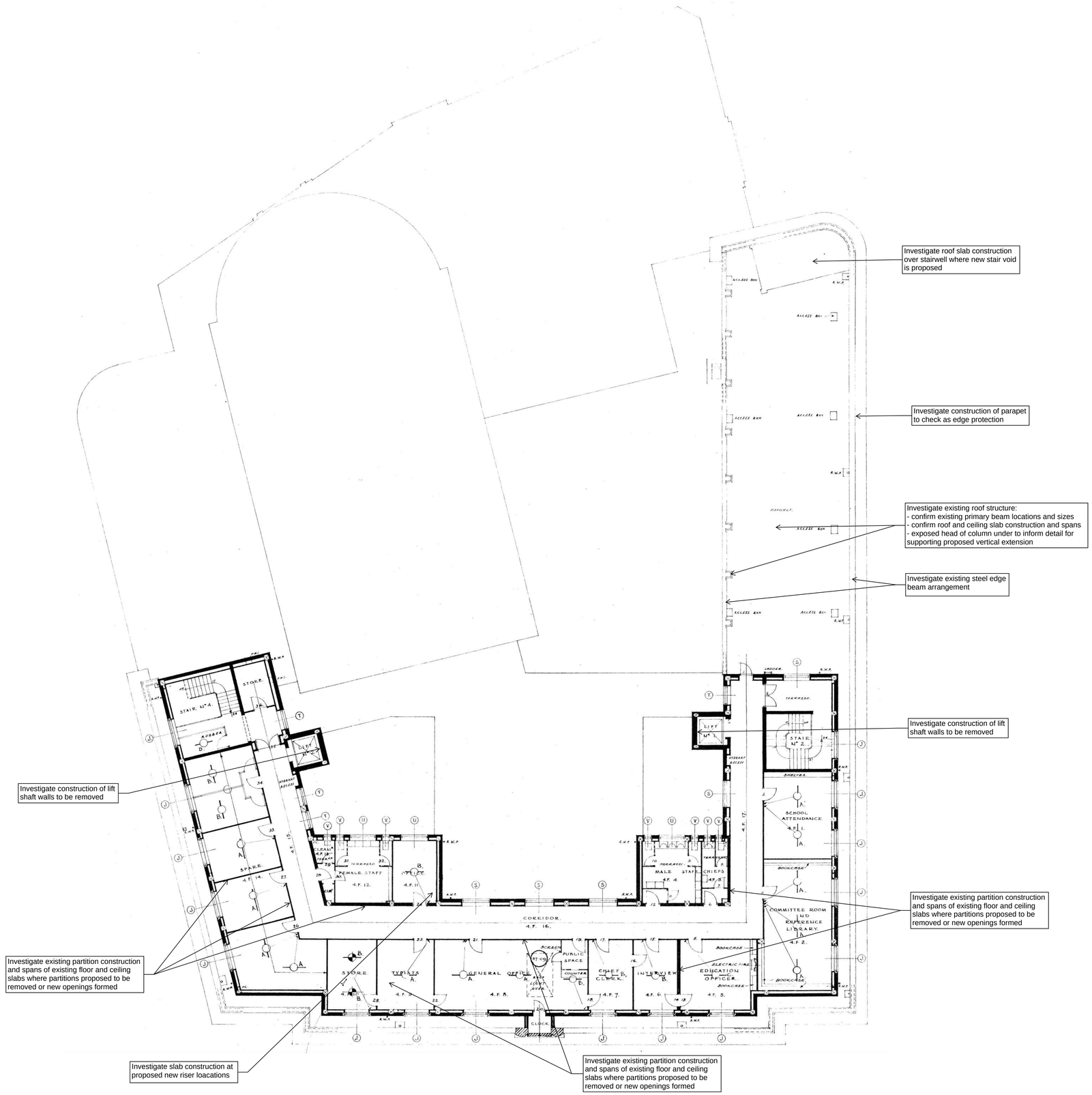

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Drawing Status
Investigations Scope

Project
Cambridge Civic Quarter
Guildhall

Title
4th Floor
Required Investigations

Drawing No
240070-CON-XX-04-DR-S-0204

Date	Oct 2024
Scale	NTS
Drawn	PB
Engineer	PB
Project No	240070
Revision	P1

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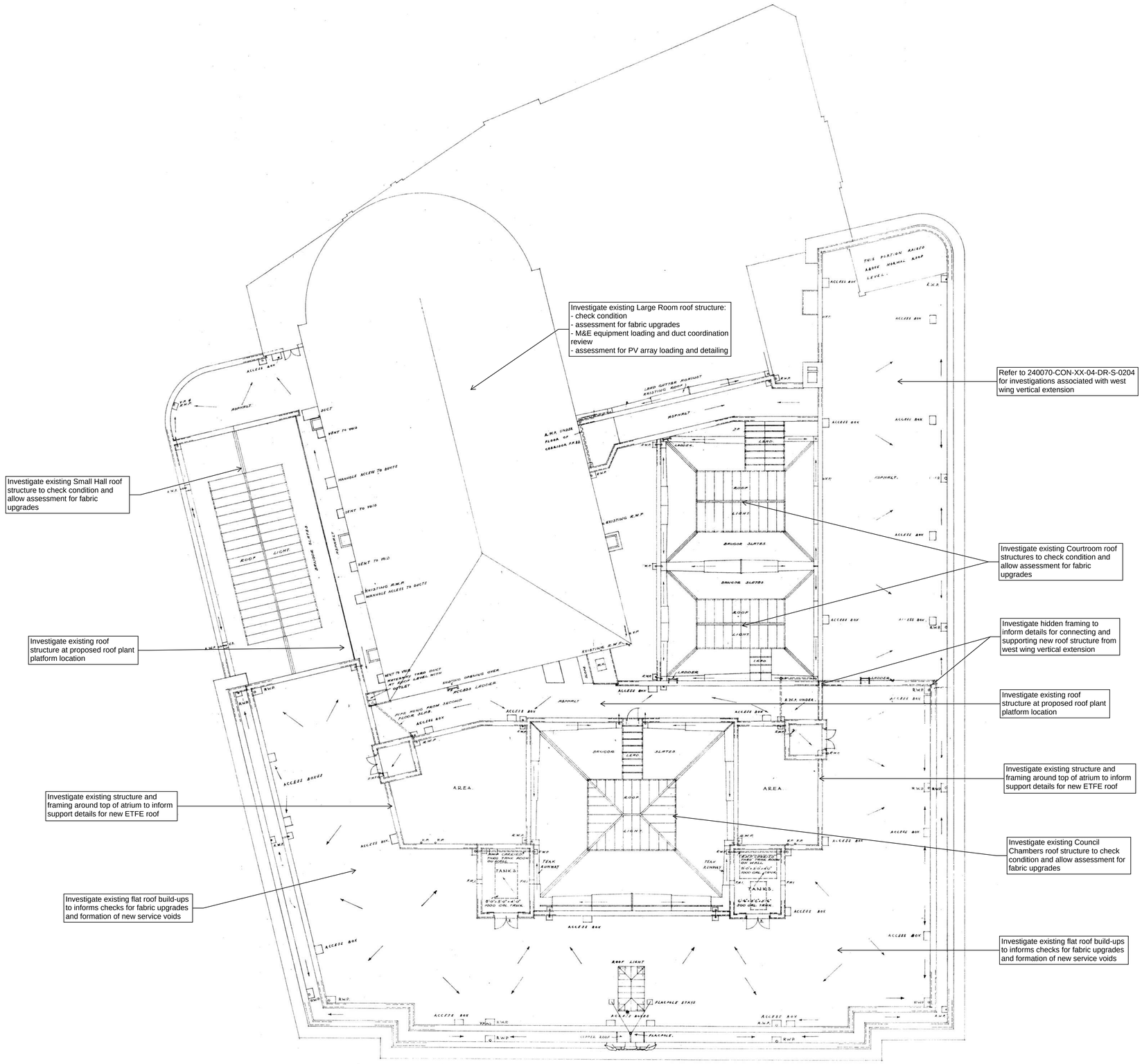

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P1	14.10.24	Stage 2 Issue	PB	-

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Drawing Status
Investigations Scope

Project
Cambridge Civic Quarter
Guildhall

Title
Roof Level
Required Investigations

Drawing No
240070-CON-XX-RF-DR-S-0205

Date	Oct 2024
Scale	NTS
Drawn	PB
Engineer	PB
Project No	240070
Revision	P1

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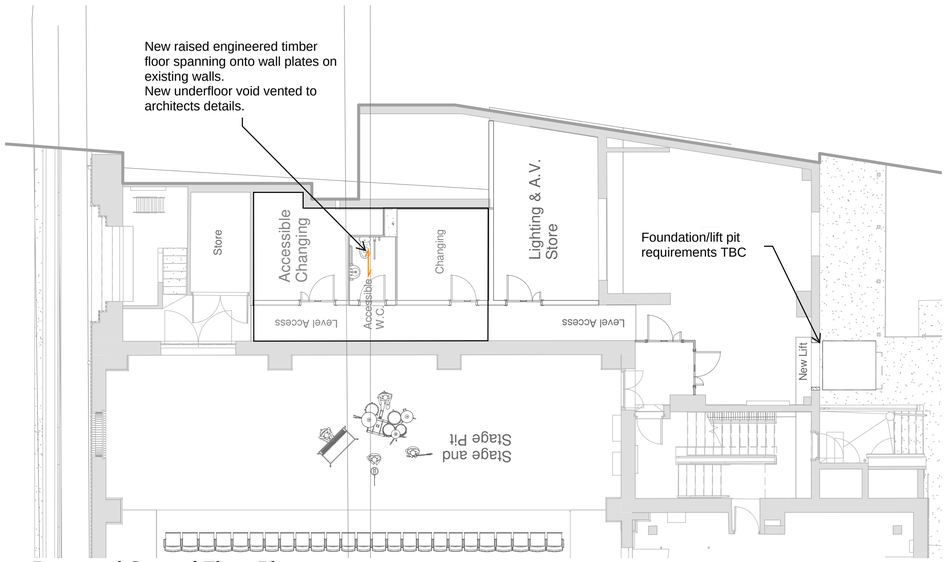
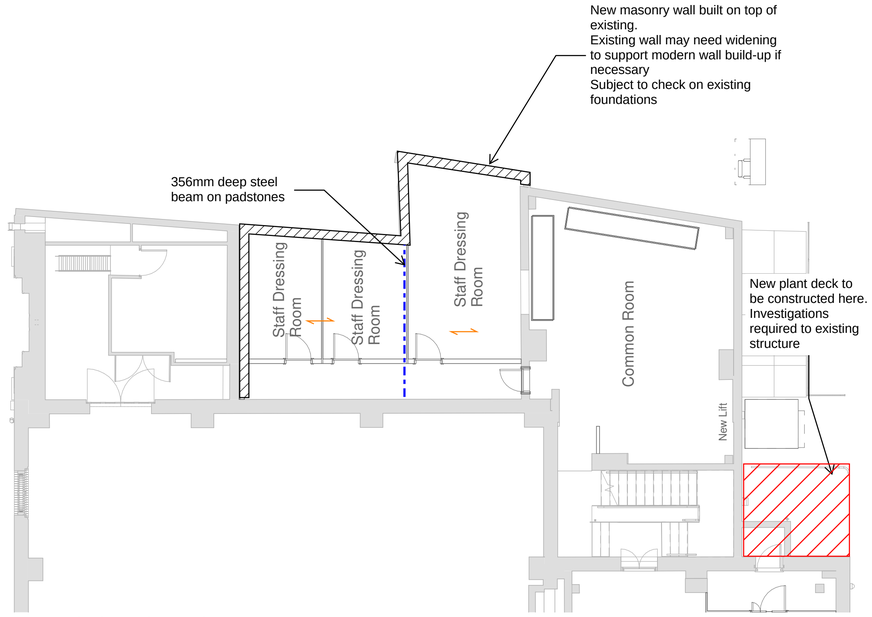


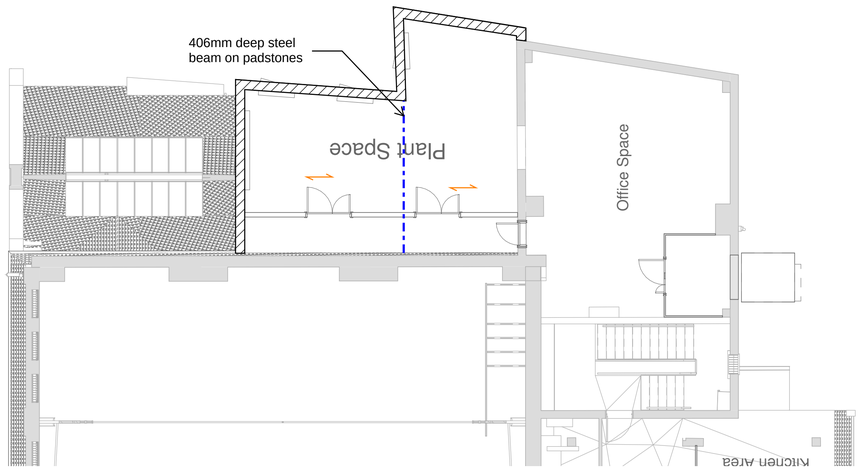
Proposed Ground Floor Plan



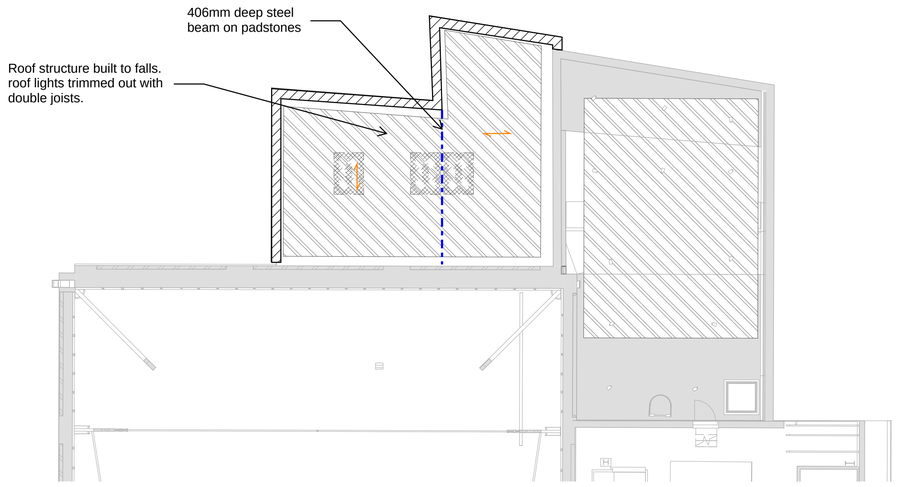
Proposed First Floor Plan

Legend:

- Proposed new steel beam
- Proposed new steel column
- Proposed new concrete pad footing
- Proposed new lightweight floor/roof (eg timber joists)
- Proposed new masonry cavity wall



Proposed Second Floor Plan



Proposed Roof Plan

Option 1 - if existing structure and foundations found sufficient to support additional floors and walls.

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Rev	Date	Description	Drawn	Check
P2	14.10.24	Stage 2 Issue	RF	PB
P1	30.8.24	Preliminary Scheme Design	RF	PB

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Drawing Status: Scheme Design

Project: Cambridge Civic Quarter Corn Exchange

Title: Back of Stage Alteration Works - Option 1

Drawing No: 240070-CON-XX-00-DR-S-0006

Date: Aug 2024

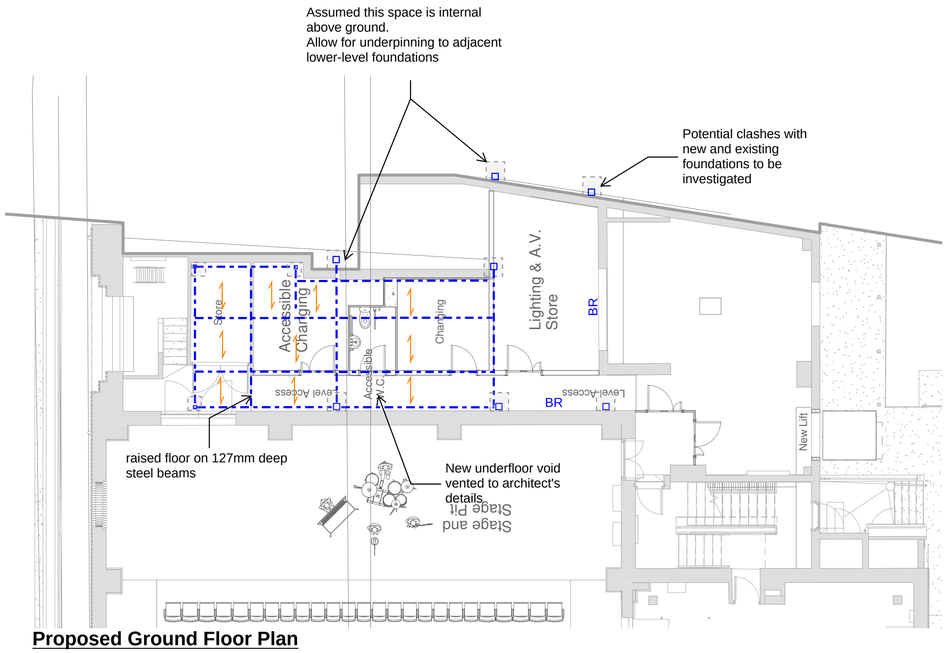
Scale: 1:100

Drawn: RF

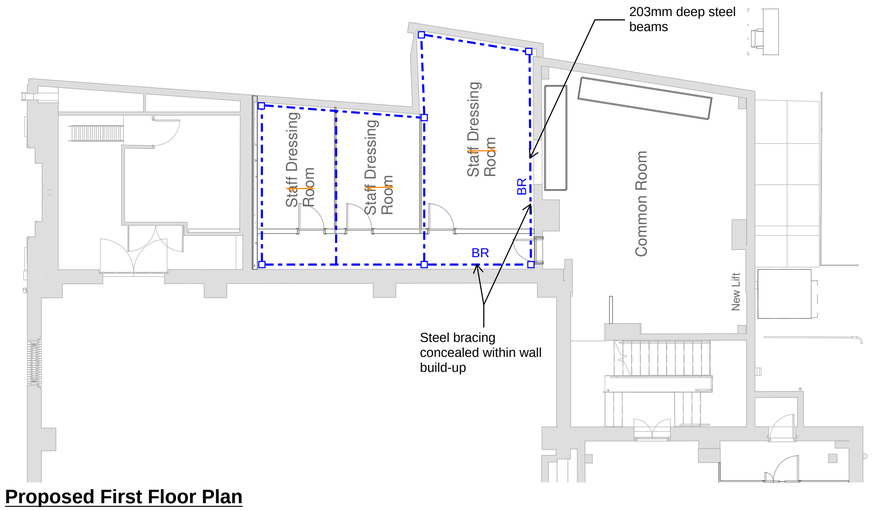
Engineer: SM

Project No: 240070

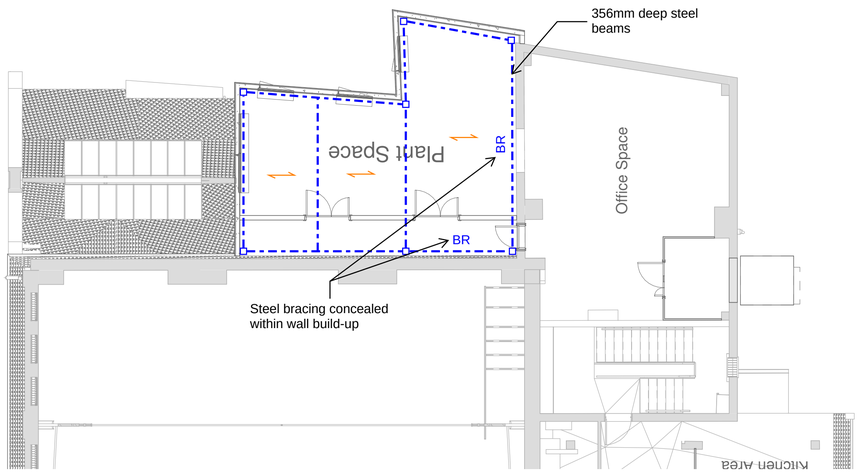
Revision: P2



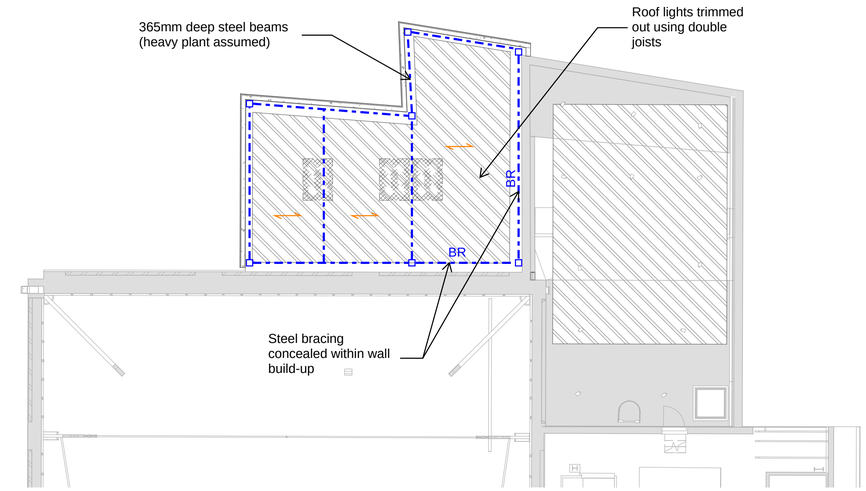
Proposed Ground Floor Plan



Proposed First Floor Plan



Proposed Second Floor Plan



Proposed Roof Plan

Option 2 - if existing structure and foundations insufficient to support new floors and separate frame is required

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Legend:

- Proposed new steel beam
- Proposed new steel column
- Proposed new concrete pad footing
- Proposed new lightweight floor (eg timber joists)

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Rev	Date	Description	Drawn	Check
P2	14.10.24	Stage 2 Issue	RF	PB
P1	30.8.24	Preliminary Scheme Design	RF	PB

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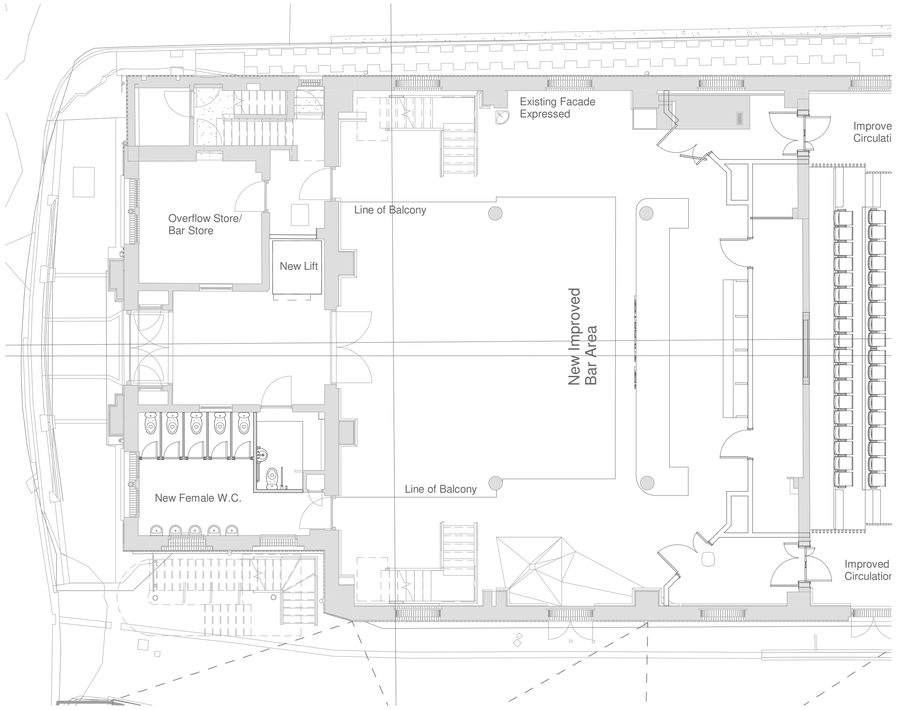
Drawing Status: Scheme Design

Project: Cambridge Civic Quarter Corn Exchange

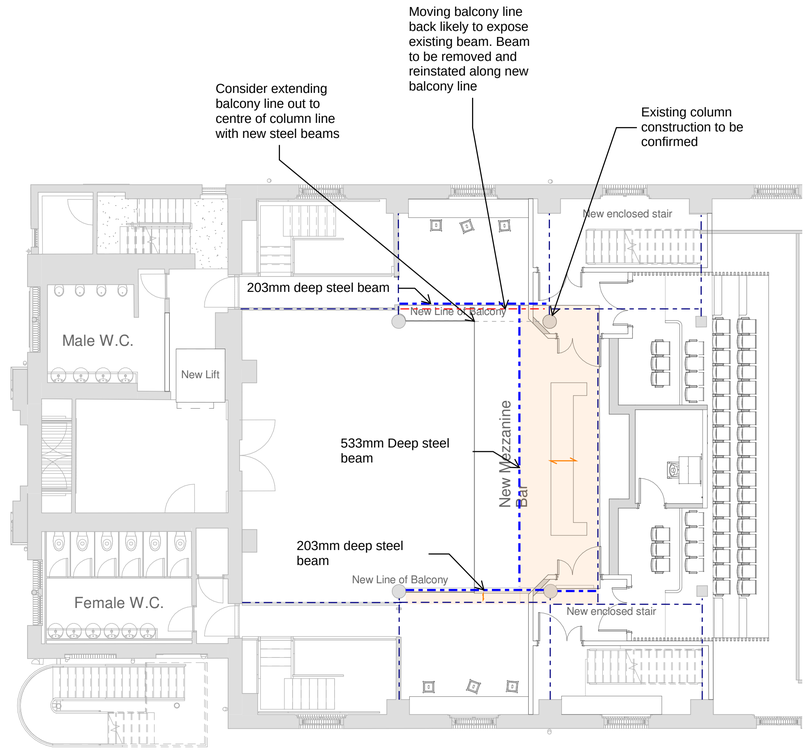
Title: Back of Stage Alteration Works - Option 2

Drawing No: 240070-CON-XX-00-DR-S-0007

Date: Aug 2024
Scale: 1:100
Drawn: RF
Engineer: SM
Project No: 240070
Revision: P2



Proposed Ground Floor Plan



Proposed First Floor Plan

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Legend:

- Proposed new steel beam
- Proposed new steel column
- Proposed new concrete pad footing
- Proposed new lightweight floor (eg timber joists)
- Proposed new masonry cavity wall
- Assumed existing beam, TBC through site investigation
- Assumed existing beam to be removed, TBC through site investigation

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Rev	Date	Description	Drawn	Check
P2	14.10.24	Stage 2 Issue	RF	PB
P1	30.8.24	Preliminary Scheme Design	RF	PB

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Drawing Status: Scheme Design

Project: Cambridge Civic Quarter Corn Exchange

Title: Foyer Works

Date: Aug 2024
Scale: 1:100
Drawn: RF
Engineer: SM
Project No: 240070

Drawing No: 240070-CON-XX-00-DR-S-0008
Revision: P1

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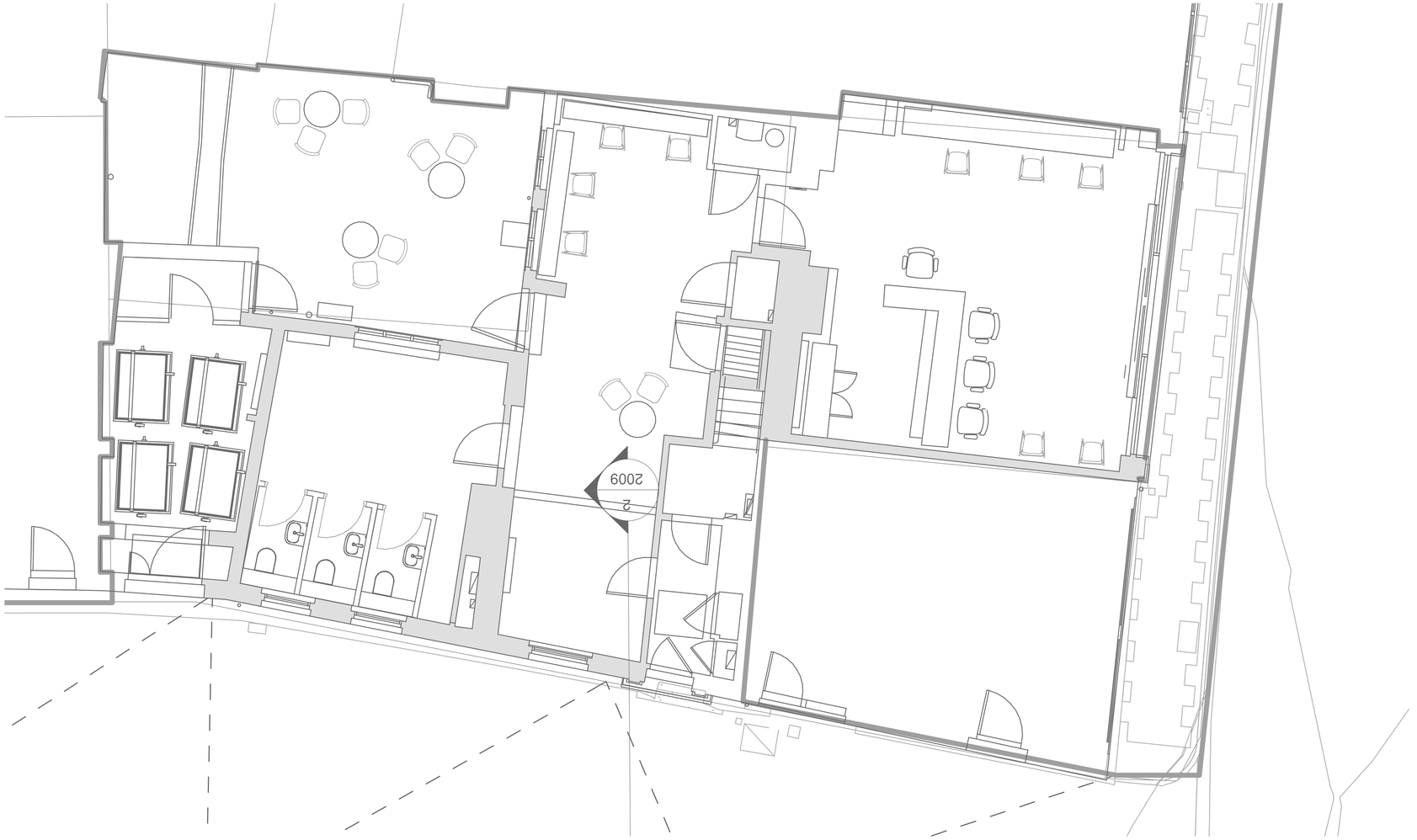

No notable structural alterations noted to Parsons court area.
Any new structural openings to be formed by needling through existing wall and installing a new lintel (concrete or stone to match existing where visual).
Removal of significant masonry shear walls may require introduction of steel moment frame to provide lateral stability.
Any openings to be closed should be infilled with new compatible masonry and compatible mortar, tied into existing wall eg. using furfix wall starters or dowels.

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Rev	Date	Description	Drawn	Check
P2	14.10.24	Stage 2 Issue	RF	PB
P1	30.8.24	Preliminary Scheme Design	RF	PB

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Drawing Status
Scheme Design

Project
Cambridge Civic Quarter
Corn Exchange

Title
Level 01 - Parsons Court

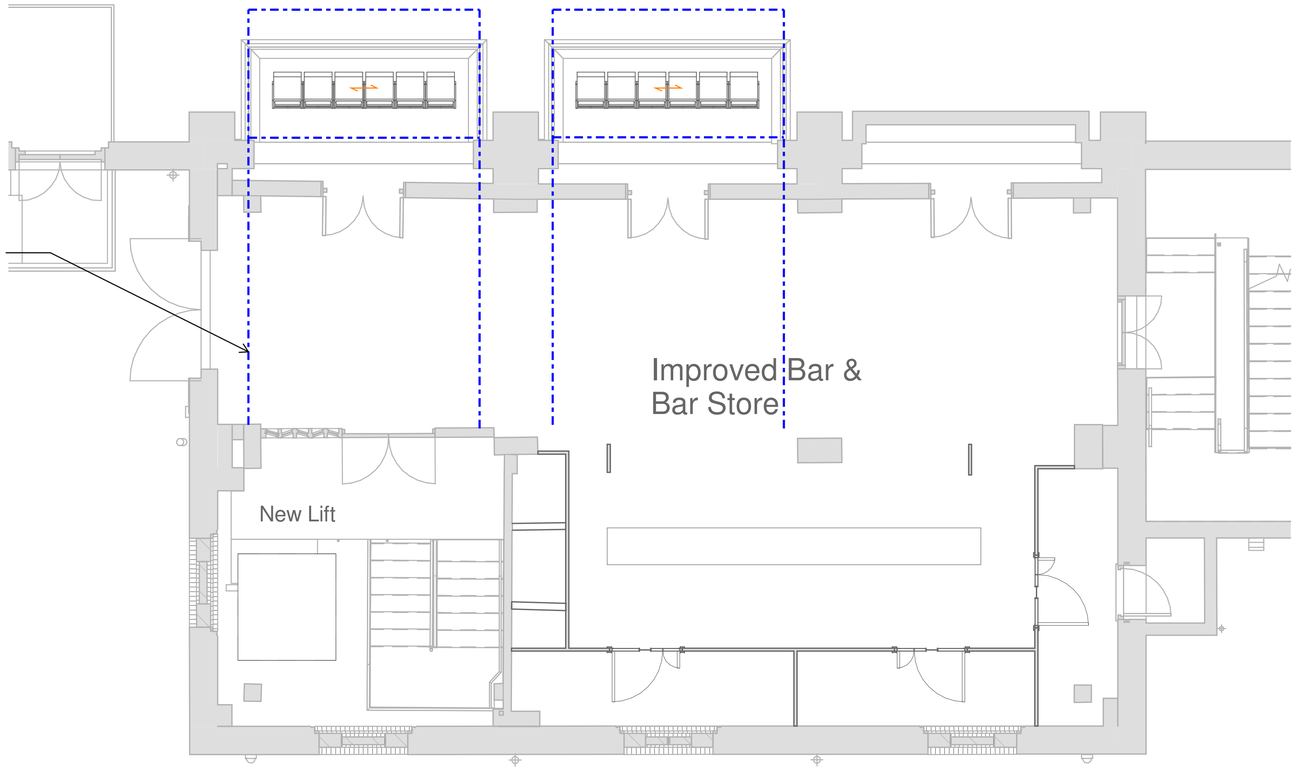
Date Aug 2024
Scale 1:100
Drawn RF
Engineer SM

Project No
240070

Drawing No
240070-CON-XX-00-DR-S-0009

Revision
P2

New steelwork tied back to existing floor structure.
Existing structure TBC following site investigation
Beam size dependent on size of extension.



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Legend:

- Proposed new steel beam
- Proposed new steel column
- Proposed new concrete pad footing
- Proposed new lightweight floor (eg timber joists)
- Proposed new masonry cavity wall
- Assumed existing beam, TBC through site investigation
- Assumed existing beam to be removed, TBC through site investigation

Potential Proposed Balcony Extensions

Any new openings eg for fire escapes to be formed from stone or concrete lintels to match existing, as above photographs. Temporary support eg needling required to form and install.

NOT FOR CONSTRUCTION

Rev	Date	Description	Drawn	Check
P2	14.10.24	Stage 2 Issue	RF	PB
P1	30.8.24	Preliminary Scheme Design	RF	PB

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Drawing Status: Scheme Design

Project: Cambridge Civic Quarter
Corn Exchange

Title: Box Extension & Proposed External Facade Openings

Drawing No: 240070-CON-XX-00-DR-S-0010

Date: Aug 2024
Scale: 1:100
Drawn: RF
Engineer: SM
Project No: 240070
Revision: P2

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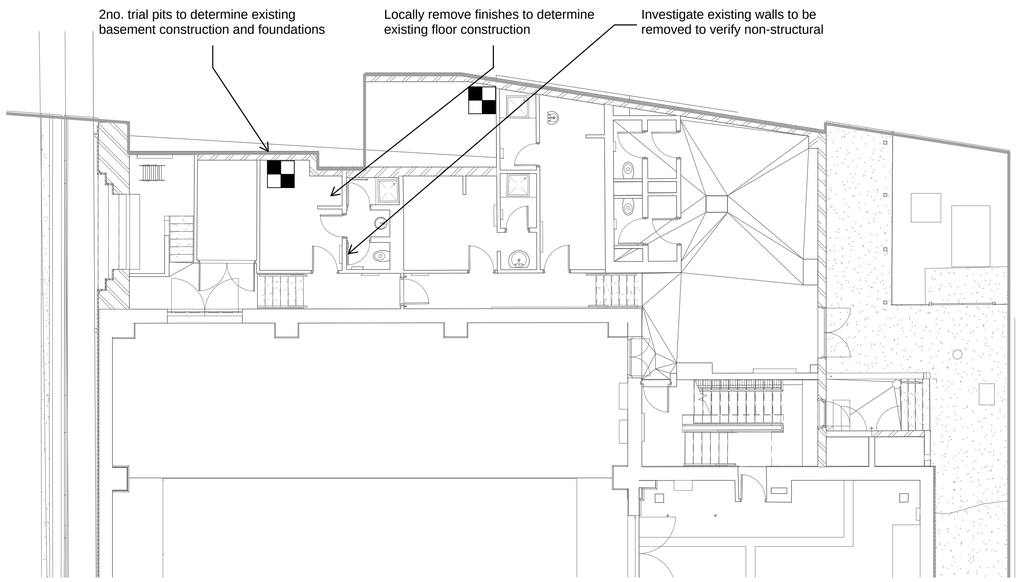
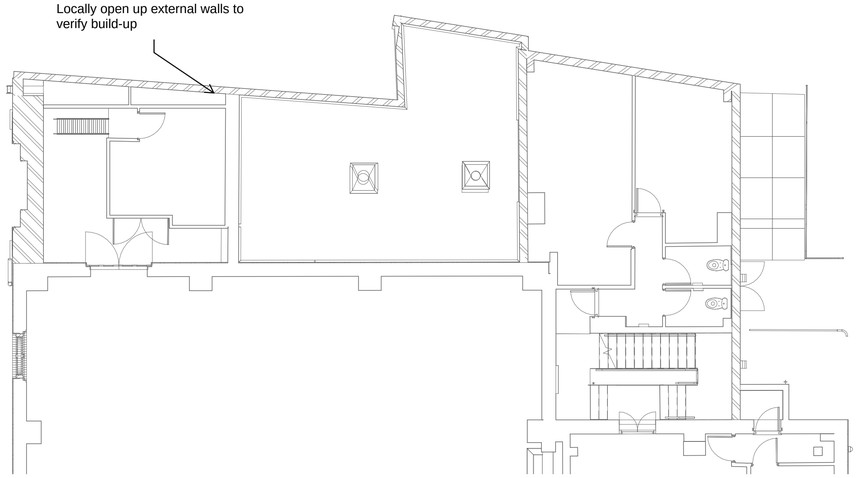
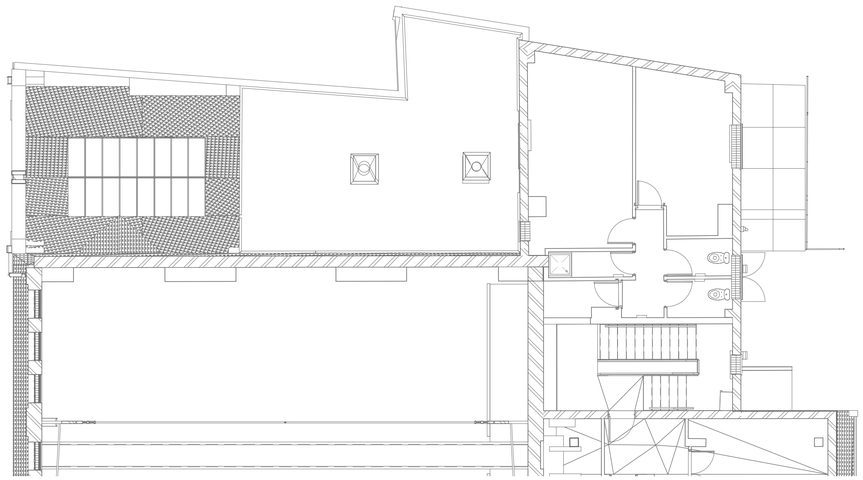


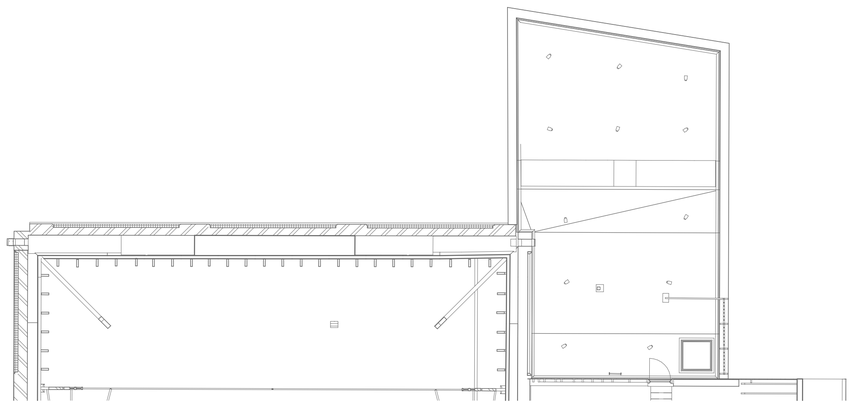
Existing Ground Floor Plan



Existing First Floor Plan



Existing Second Floor Plan



Existing Roof Plan

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Rev	Date	Description	Drawn	Check
P1	14.10.24	Stage 2 Issue	RF	PB

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Drawing Status
Investigations Scope

Project
Cambridge Civic Quarter
Corn Exchange

Title
Back of Stage Alteration Works - Required Investigations

Drawing No
240070-CON-XX-00-DR-S-0250

Date Oct 2024
Scale 1:100
Drawn RF
Engineer PB
Project No 240070
Revision P2

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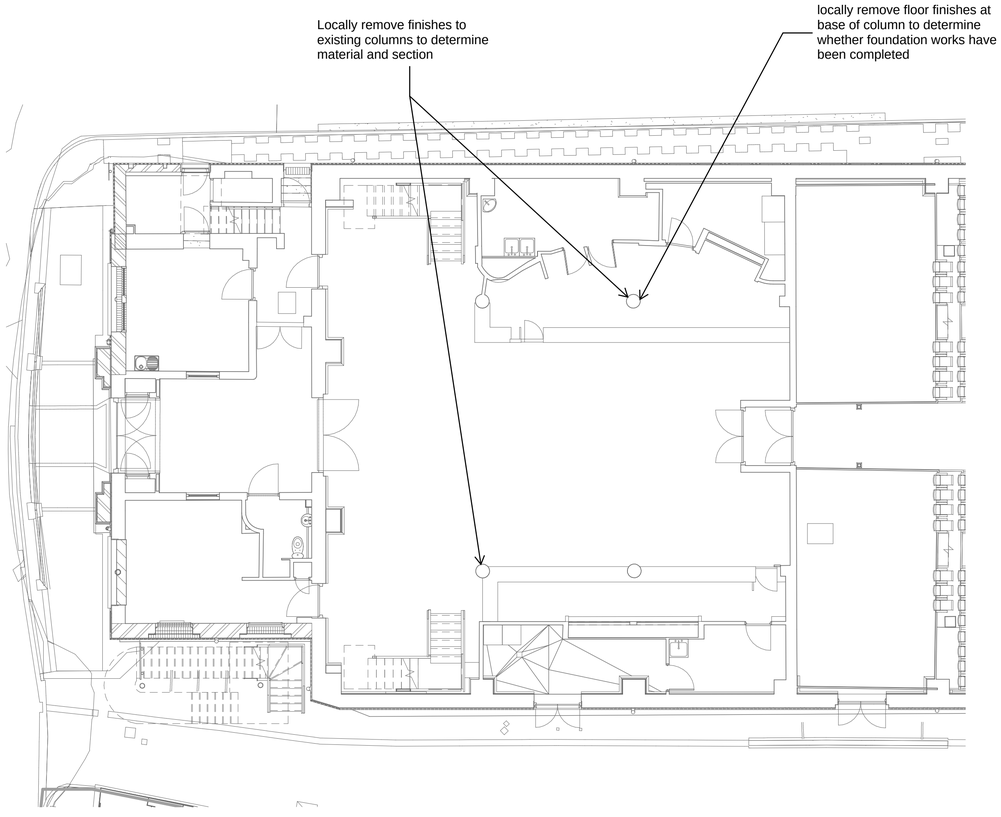
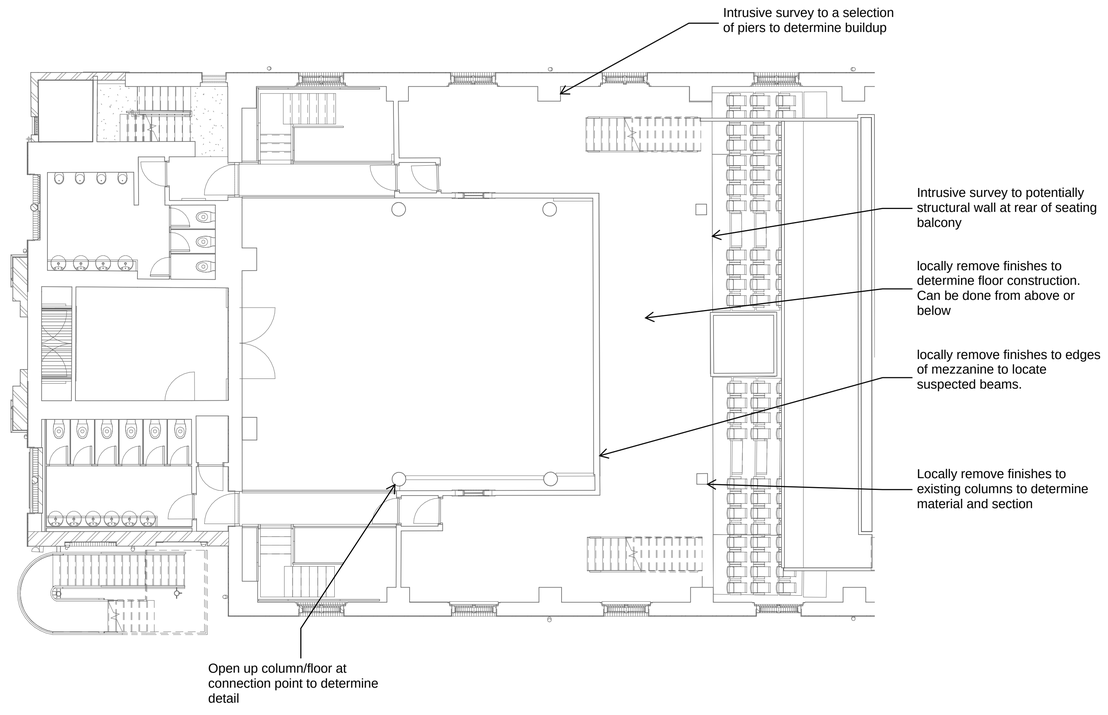


Existing Ground Floor Plan



Existing First Floor Plan

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Drawing Status
Investigations Scope

Project
Cambridge Civic Quarter
Corn Exchange

Title
Foyer Works
Required Investigations

Drawing No
240070-CON-XX-00-DR-S-0251

Date	Oct 2024
Scale	1:100
Drawn	RF
Engineer	PB
Project No	240070
Revision	P1

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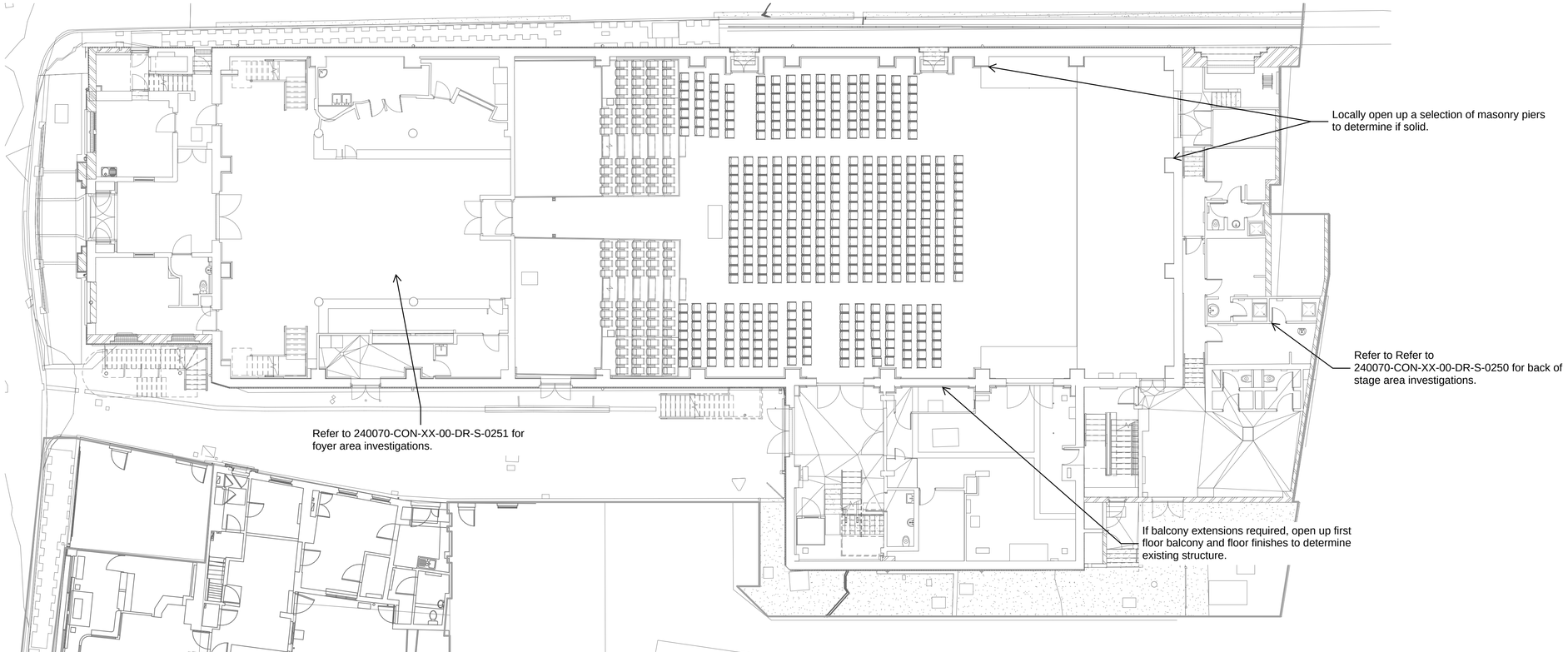
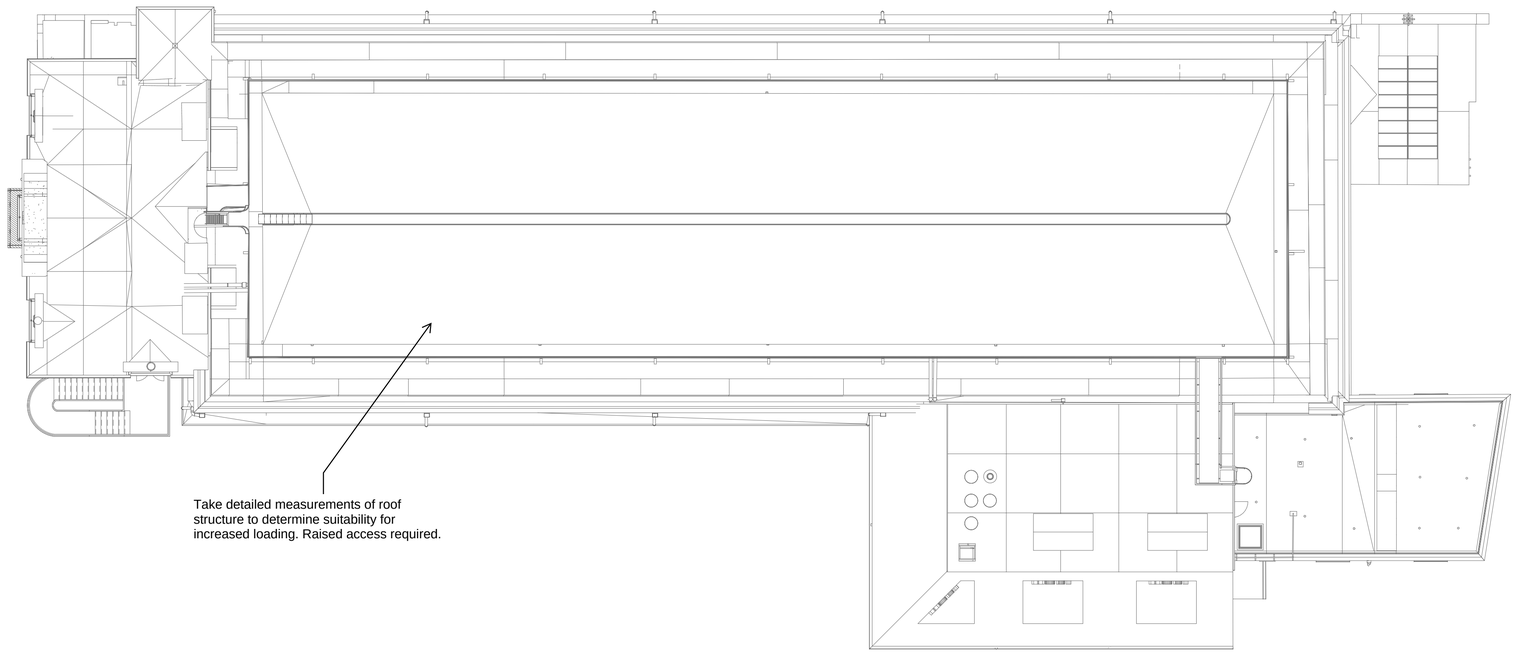
Existing Ground Floor



Existing Roof



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Rev	Date	Description	Drawn	Check
P1	14.10.24	Stage 2 Issue	RF	PB

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Drawing Status
Investigations Scope

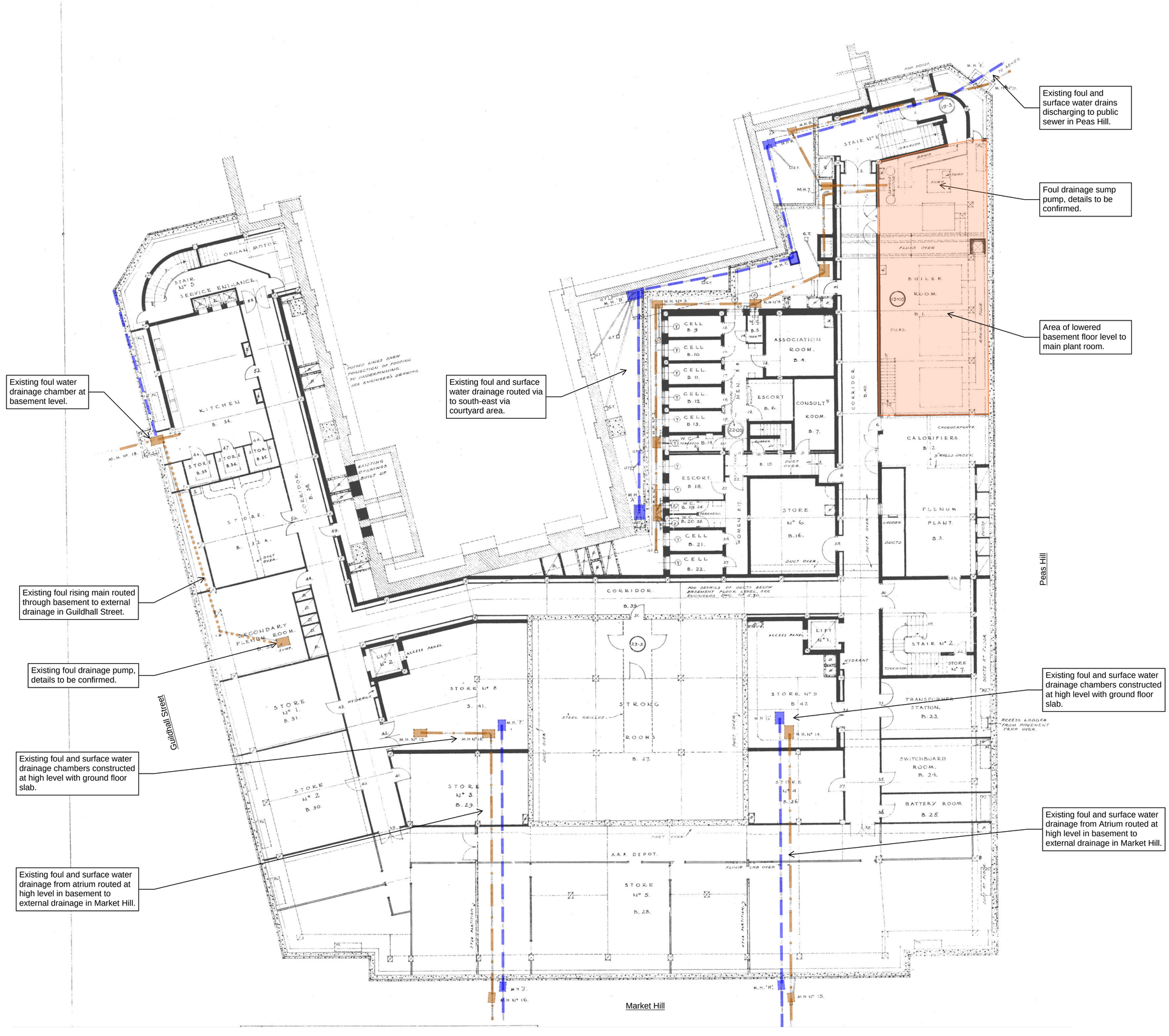
Project
Cambridge Civic Quarter
Corn Exchange

Title
Main Hall Ground Floor & Roof
Required Investigations

Drawing No
240070-CON-XX-00-DR-S-0252

Date Oct 2024
Scale 1:100
Drawn RF
Engineer PB
Project No 240070
Revision P1

APPENDIX B – CIVIL DRAWINGS



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Rev	Date	Description	Drawn	Check
P01	13.09.24	First Issue	AM	AM

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Drawing Status
S2 - SUITABLE FOR INFORMATION

Project
Cambridge Civic Quarter

Title
Guildhall
Existing Drainage - Basement

Drawing No
240070-CON-XX-B1-SK-C-0001

Date	Sept 24
Scale	NTS
Drawn	AM
Engineer	AM
Project No	240070
Revision	P01

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Drawing Status
S2 - Suitable for information

Project
Cambridge Civic Quarter

Title
Guildhall
Existing Drainage - Ground Floor

Drawing No
240070-CON-XX-00-SK-C-0001

Date Sept 24
Scale NTS
Drawn AM
Engineer AM
Project No 240070
Revision P01

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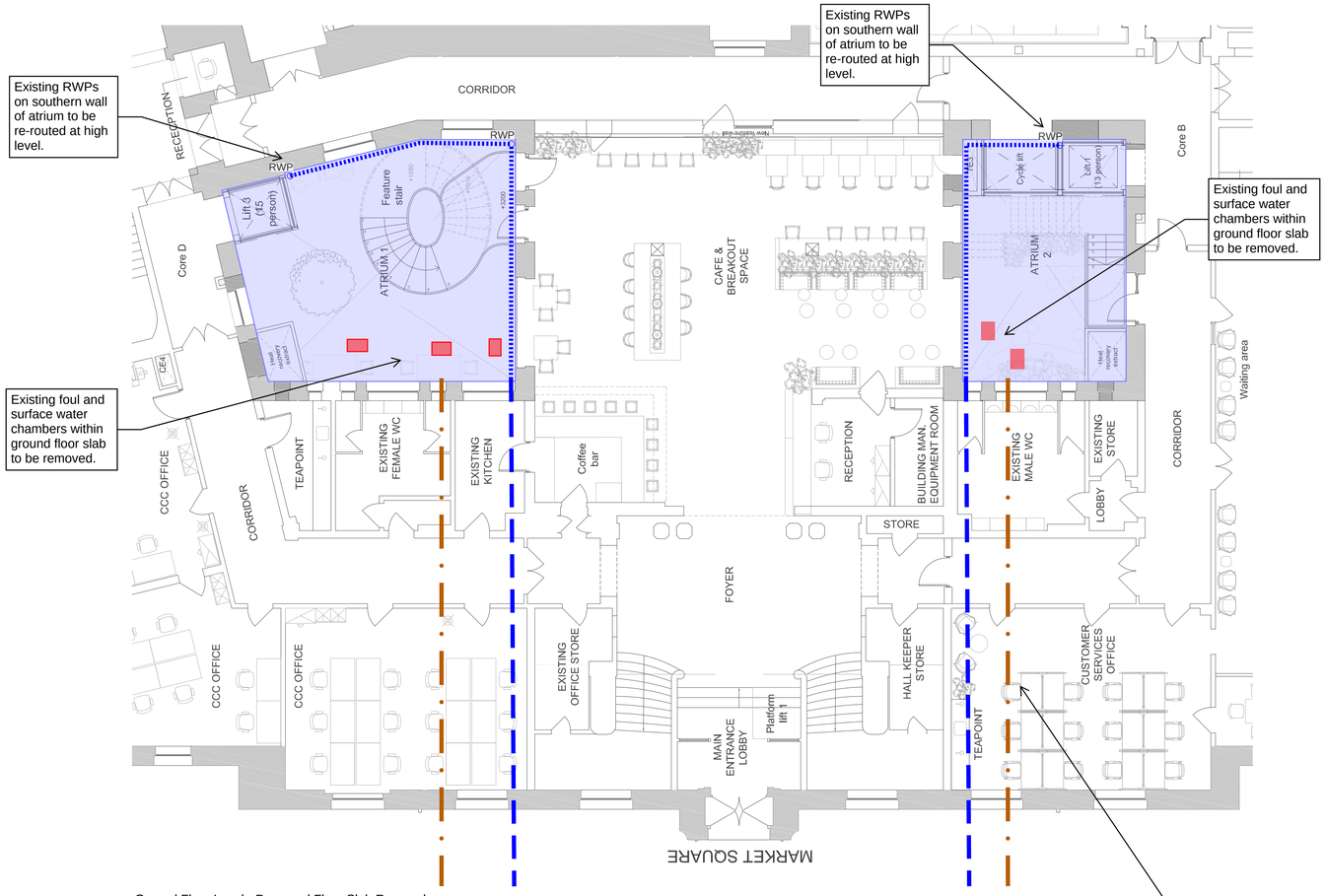

Ground Floor Level - Proposed Floor Slab Removal

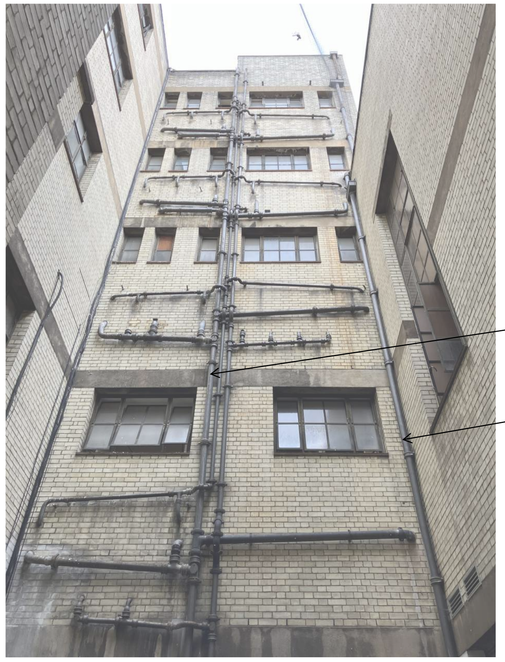

Photo 1 - Existing SVP / SS / RWP routed down north wall of atrium.

Photo 2 - Existing drainage chambers with atrium ground floor slab

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Drawing Status
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Project
Cambridge Civic Quarter

Date Sept 24
Scale NTS
Drawn AM
Engineer AM

Title
Guildhall
Proposed light wells

Project No
240070

Drawing No
240070-CON-XX-00-SK-C-0002

Revision
P01

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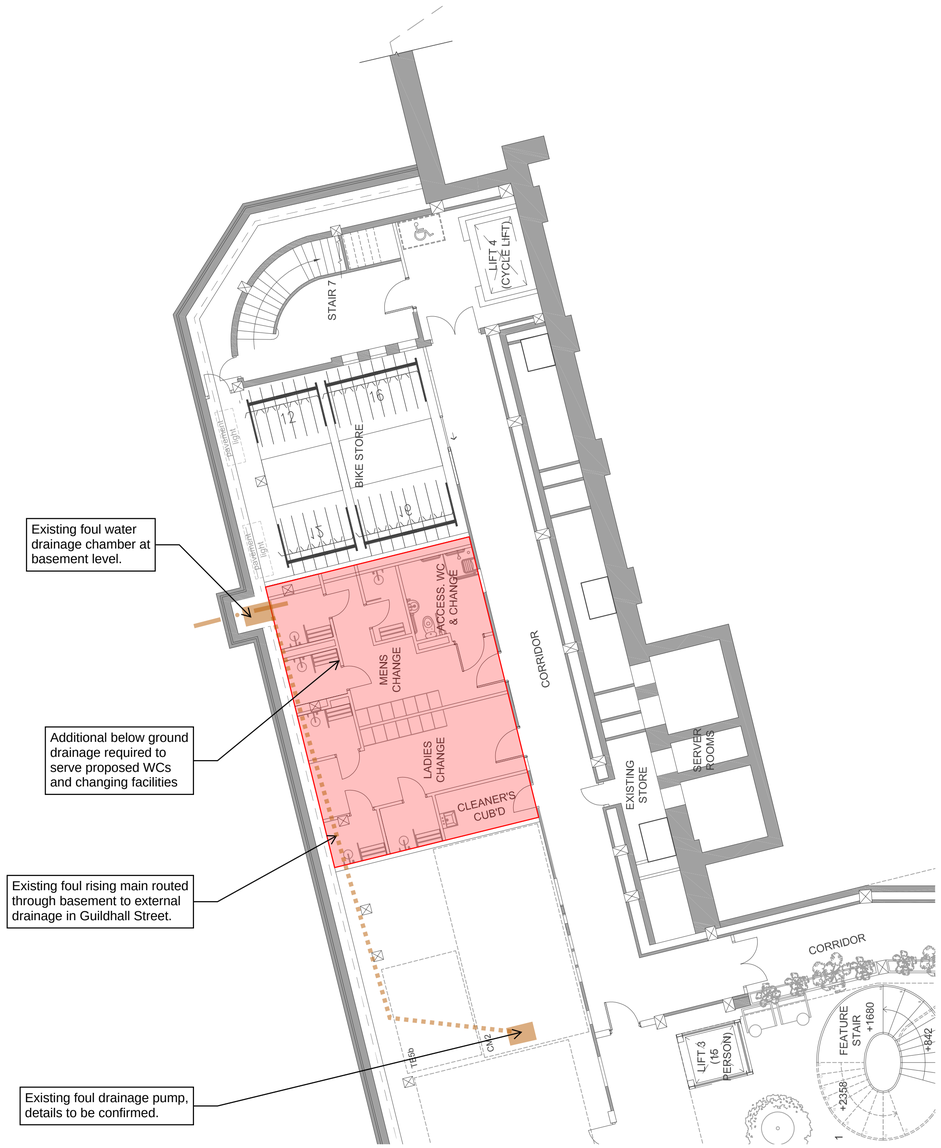

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Drawing Status
S2 - Suitable for information

Project
Cambridge Civic Quarter

Date Sept 24

Scale 1:100@A1

Drawn AM

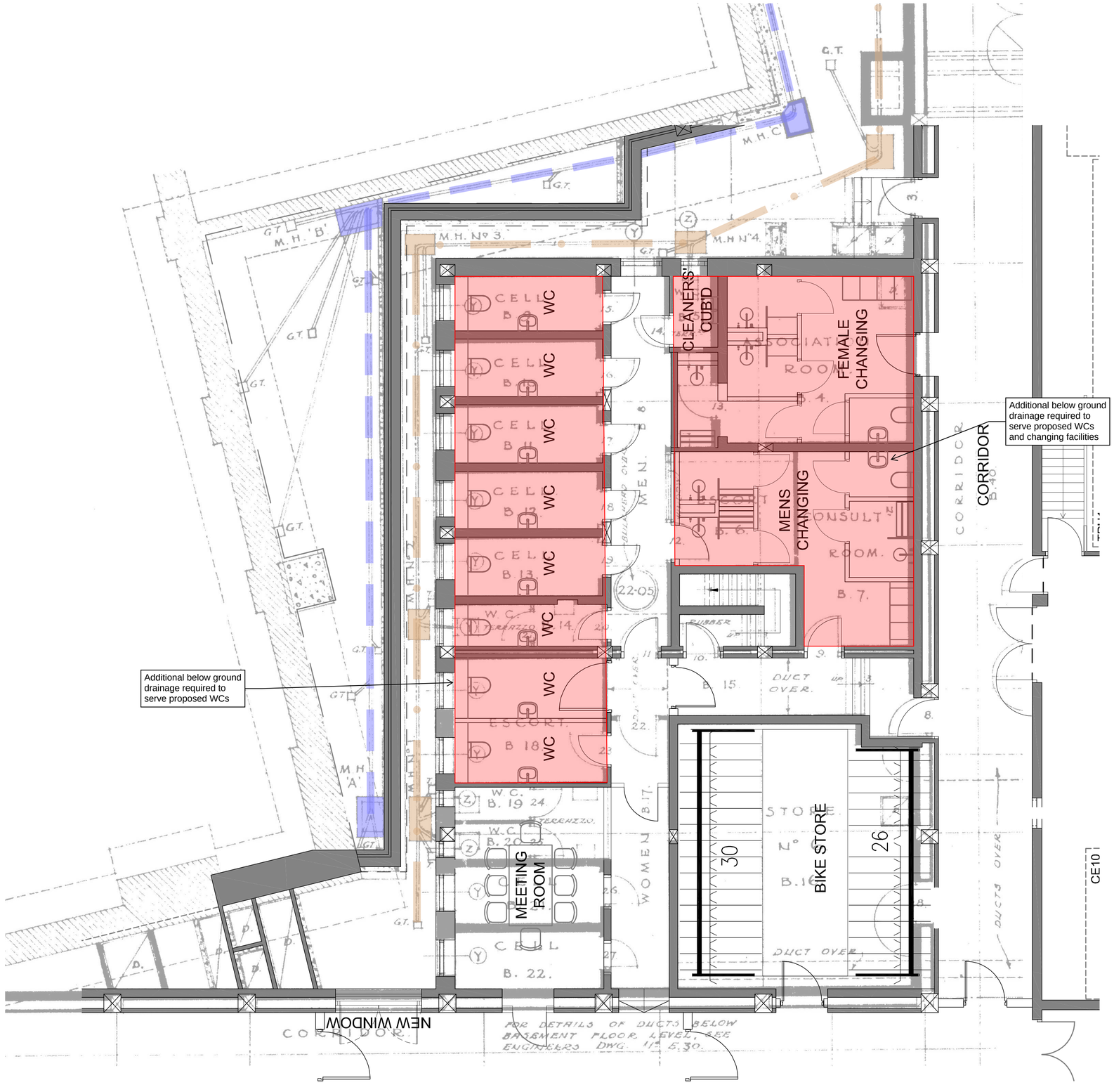
Engineer AM

Title
Guildhall
Basement East Wing
WCs and Changing

Project No
240070

Drawing No
240070-CON-XX-00-SK-C-0003

Revision
P02



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Drawing Status
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Project
Cambridge Civic Quarter

Date Sept 24
Scale NTS
Drawn AM
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Title
Guildhall
Basement Cells
WCs and Changing

Project No
240070

Drawing No
240070-CON-XX-00-SK-C-0004

Revision
P02

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KEY

= ELECTRICAL CABLES & DUCTS - UKPN

= FOUL DRAINAGE - HURST SURVEYS 1991

= SURFACE WATER DRAINAGE (ABANDONED) - HURST SURVEYS 1991

= SURFACE WATER DRAINAGE (CURRENT) - HURST SURVEYS 1991

= GAS MAINS - CADENT

E - STALL ELECTRICAL SUPPLY CABLE

WM - WATER METER

FH - FIRE HYDRANT

G - SURFACE WATER GULLY

MH - FOUL & SURFACE WATER MANHOLE

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Drawing Status
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Project
Cambridge Civic Quarter

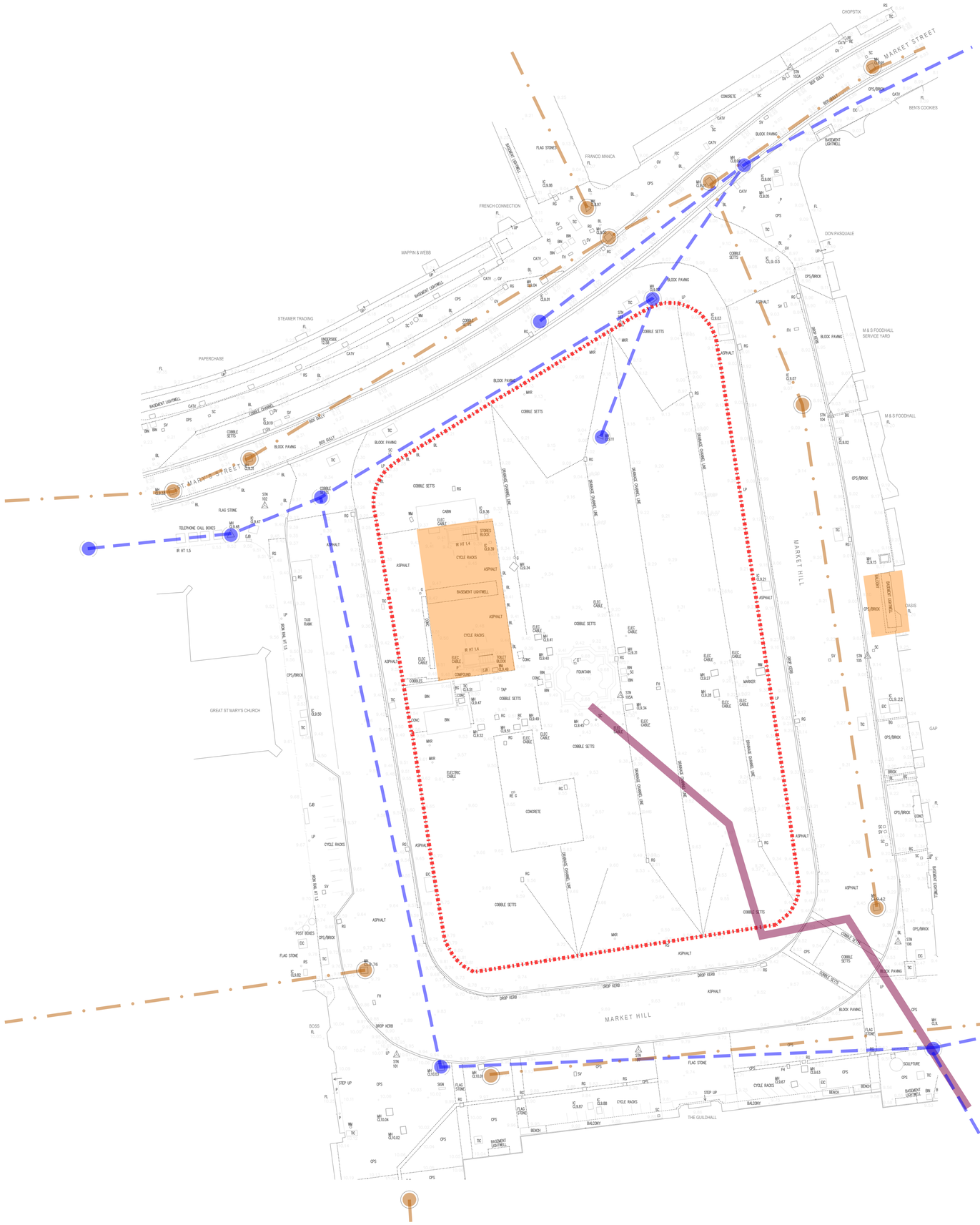
Date Sept 24
Scale 1:200@A1
Drawn AM
Engineer AM

Title
Market Square
Below Ground Services

Project No
240070

Drawing No
240070-CON-MS-00-SK-C-0001

Revision
P01



Legend

- Highway Boundary
- Existing Basement (approximate extent)
- Hobsons Conduit (historic route)
- Existing Anglian Water Foul Sewer
- Existing Anglian Water Surface Water Sewer

GENERAL NOTES

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Drawing Status
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Project
Cambridge Civic Quarter

Date Sept 24
Scale 1:200@A1
Drawn AM
Engineer AM

Title
Market Square
Existing Anglian Water Sewers

Project No
240070

Drawing No
240070-CON-MS-00-SK-C-0002

Revision
P01

Legend

- Highway Boundary
- Existing basement (approximate extent)
- Hobsons Conduit (historic route)
- Existing Anglian Water foul sewer
- Existing Anglian Water surface water sewer
- Existing foul drain
- Existing surface water drain
- Existing road gully
- Existing highway channel drain

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Drawing Status
S2 - Suitable for information

Project
Cambridge Civic Quarter

Title
Market Square
Existing drainage to Market Square

Drawing No
240070-CON-MS-00-SK-C-0003

Date Sept 24
Scale 1:200@A1
Drawn AM
Engineer AM
Project No 240070
Revision P01