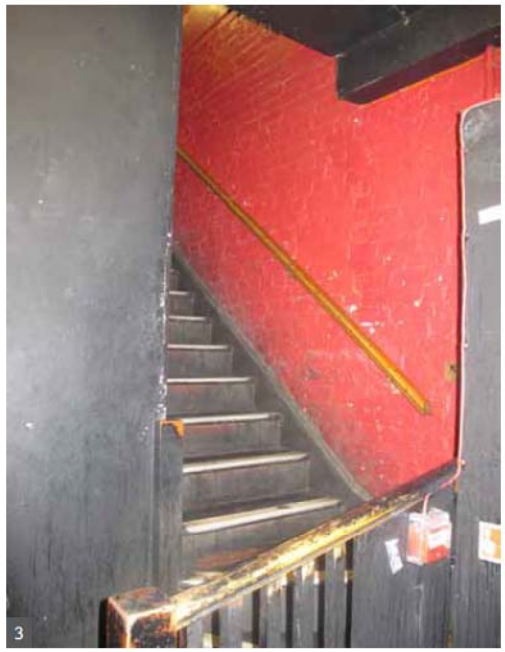
Existing Buildings
23 Denmark Place

History of construction and alteration

- Three-storey brick building that appears to have been built circa 1900
- The plain elevations with large windows suggest that it was built for an industrial use.
- The ground and first-floor interiors have been radically altered
- Second floor retains tongue-and-groove panelling, possibly original
- The east has been tied back to the floor structure with steel pattress plates at second floor level, suggesting that the floor structures are not adequately tied to the external brickwork.
- Beneath these pattress plates is a steel girder spanning the window opening, presumably in place of a failed brickwork arch.


1


2


3


4

5

1. *View of roof abutment between No. 26 & 23*
2. *Existing Eastern facade to Denmark Place*
3. *Staircase to upper floors*
4. *Norther facade with openings infilled*
5. *Ground floor connection to No. 26*

Chapter Two

Proposals

Proposals

Concept

The proposals are driven by the protect the listed buildings whilst de;livering the consented St. Giles Circus project

01 - Historical Layout

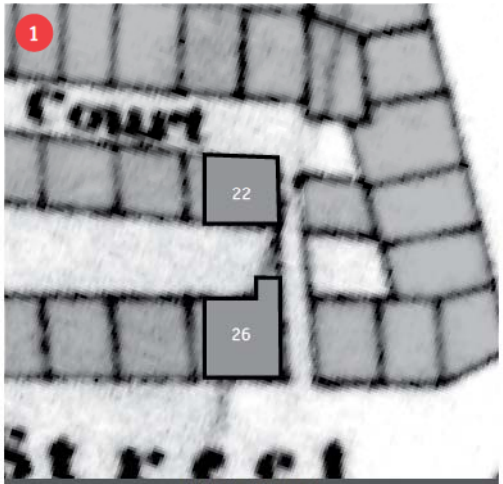
The two most significant buildings, No. 26 Denmark Street and No. 22 Denmark Place were originally unlinked.

02 - Victorian Infill

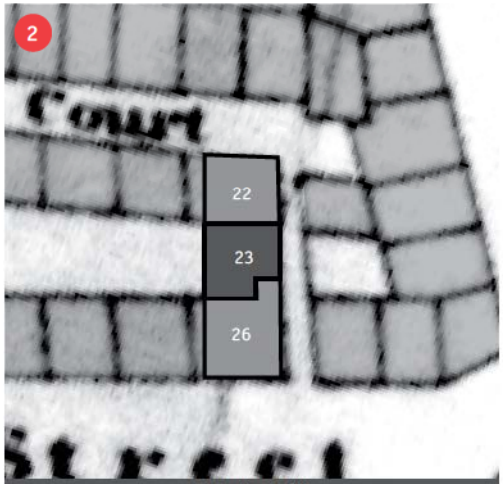
In 1908 an infill building was constructed between these two properties, obscuring the original built forms, crucially the closet wing of No. 26 Denmark Street.

03 - Contemporary Infill

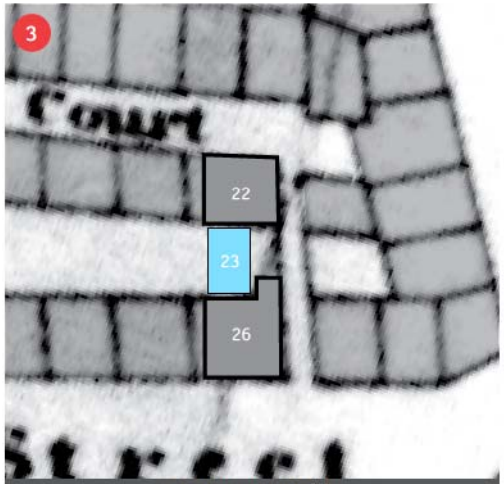
Rather than obscure the two buildings of significance our approach is to try a and replicate as closely as possible the ethos of the historical layout. The proposed contemporary infill is a single storey lightweight glass pavilion that gently sits between No. 26 Denmark Street and No. 22 Denmark Place. This creates a sense of openness and allows the existing buildings to be read in their original forms.



Historical Layout



Victorian Infill



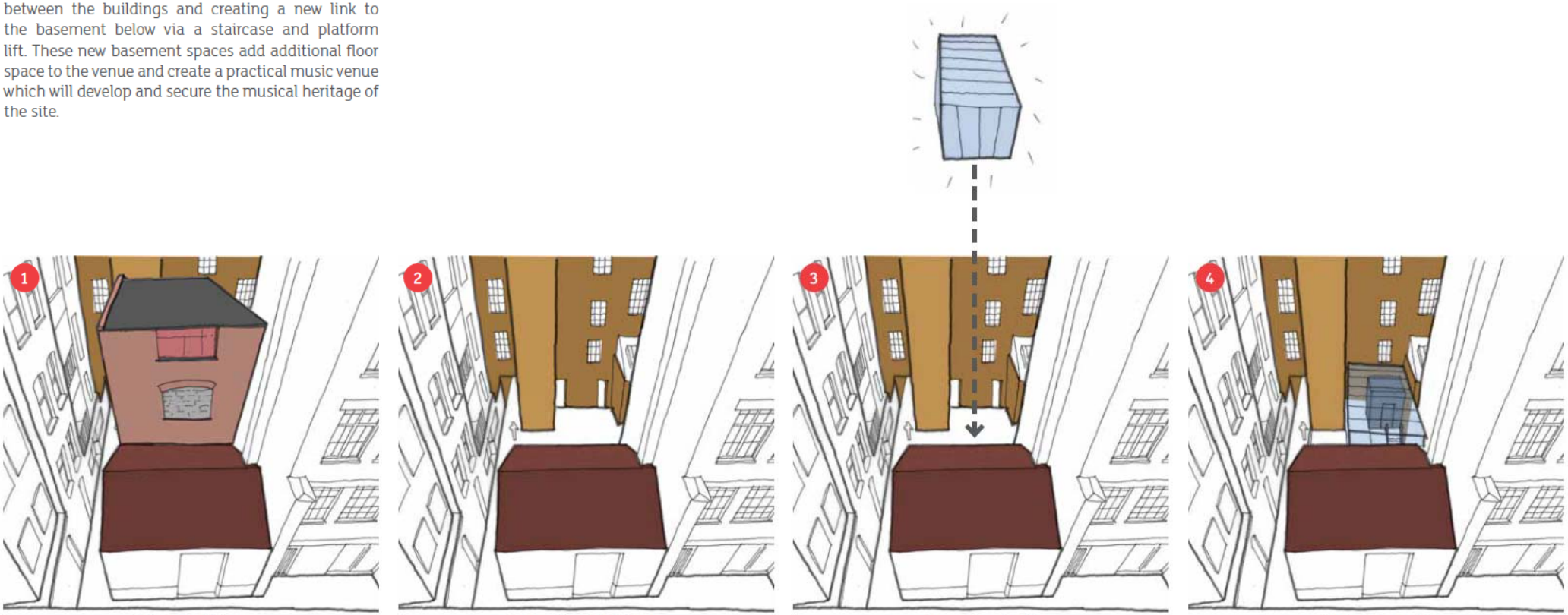
Contemporary Infill

Proposals

Concept

As outlined previously the 'contemporary infill' approach to the site allows for a greater understanding and appreciation of the significant buildings on site whilst creating a viable bar and music venue that will sustain the music heritage of the site, enhancing the setting and thereby the significance of No. 22 and No. 26.

As illustrated below, No. 23 is demolished, revealing the historic buildings. The new contemporary infill is skilfully and delicately inserted into the restored yard between No. 22 and No. 26. This lightweight 'glass jewel' redefines the character of the significant buildings whilst retaining a pragmatic connection between the buildings and creating a new link to the basement below via a staircase and platform lift. These new basement spaces add additional floor space to the venue and create a practical music venue which will develop and secure the musical heritage of the site.

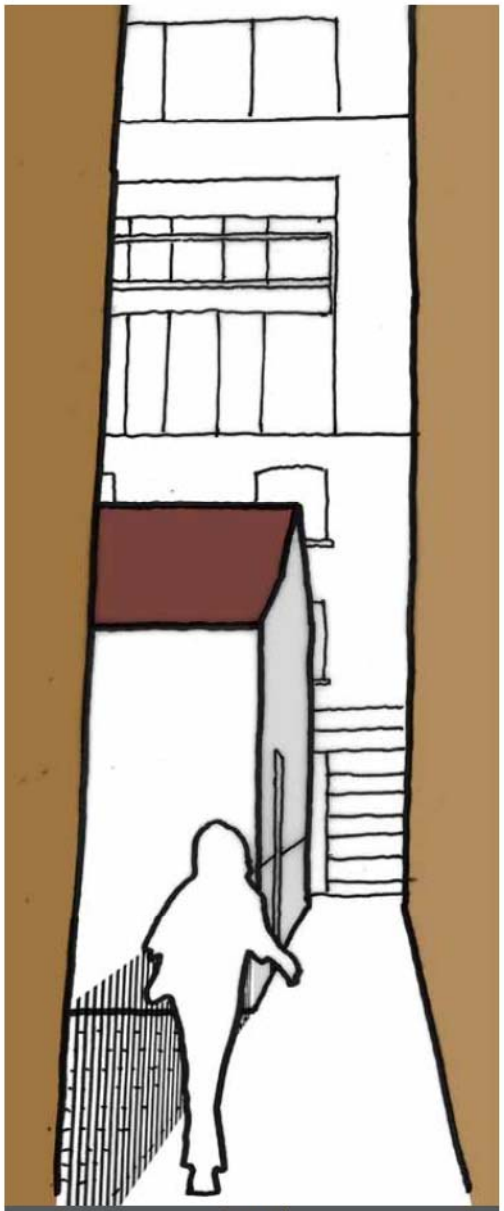


Existing Buildings | Reveal Historic Buildings | Insert Glass Jewel | Revised Proposals

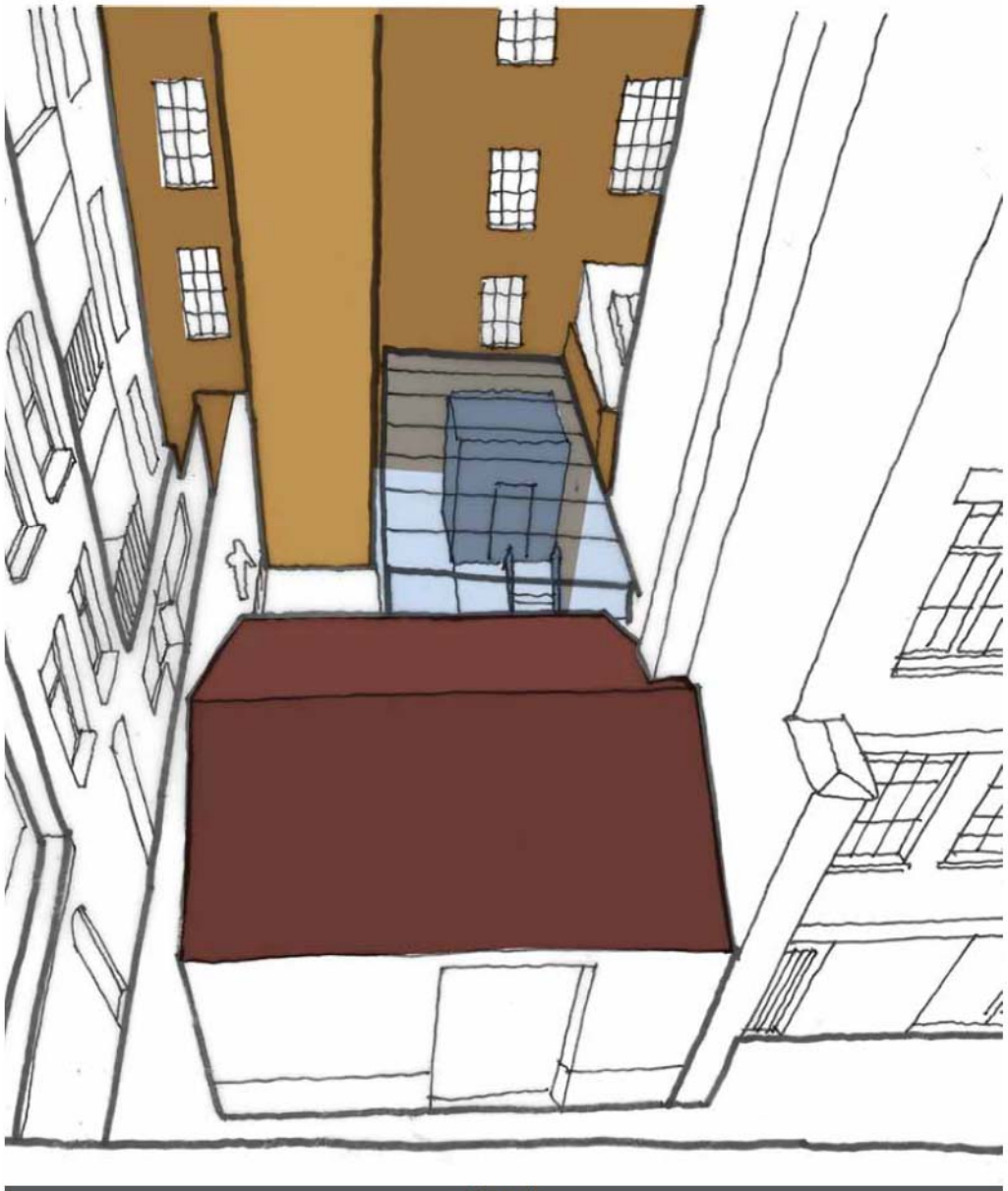
Proposals

Concept

Consented



Proposal



Proposal

Proposals

Concept

The character of Denmark Place remains unchanged and it remains unmistakably a traditional alleyway. The sketch views illustrate the new clarity of two separate significant buildings rather than a single wall of brick.

The 'glass jewel' is delicately slotted into the site. It slides behind the closet wing of No. 26 and is separated from the existing buildings by shadow gaps that help to clearly define old and new. Internally the 'external facades' of No. 26 and No. 22 are left exposed, further expressing the plan form of the original buildings.

The plot of No. 23 is defined by the introduction of an architectural metalwork balustrade, referencing the metalworking past of the coach smith's building and matching the scale of its render skirting. The metalwork theme is revisited internally with a feature raw steel staircase and lift. The characteristics described above are illustrated in the adjacent precedents.

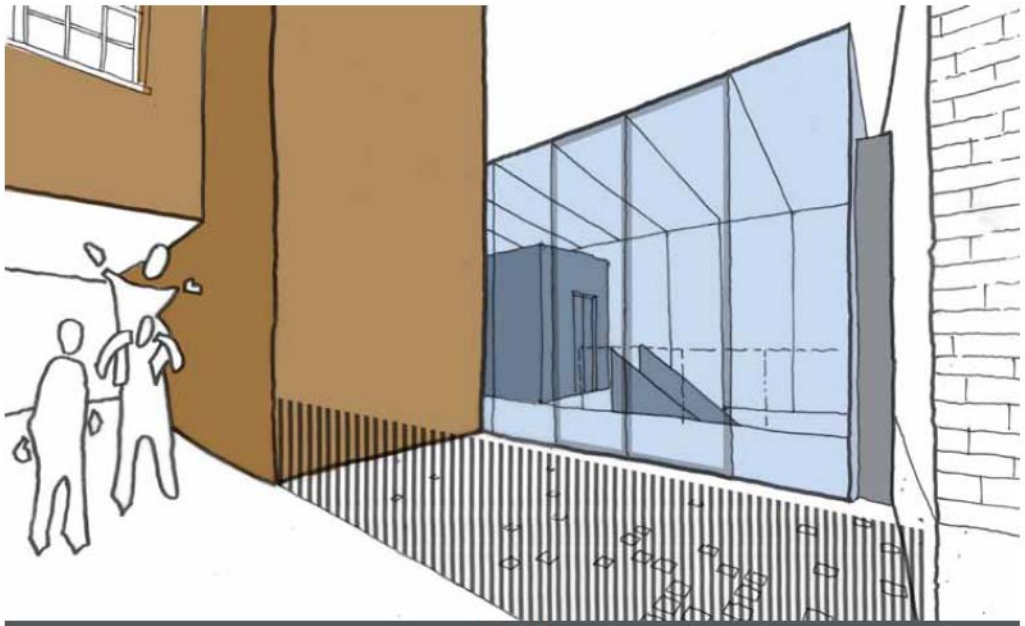

1


2


3

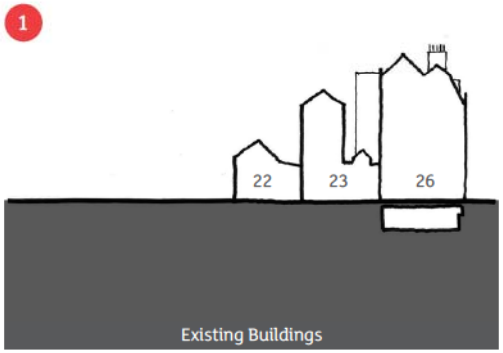
1. *Government Offices, Castilla y León*
2. *École de Musique Maurice Duruflé, Louviers*
3. *Levring House, London*

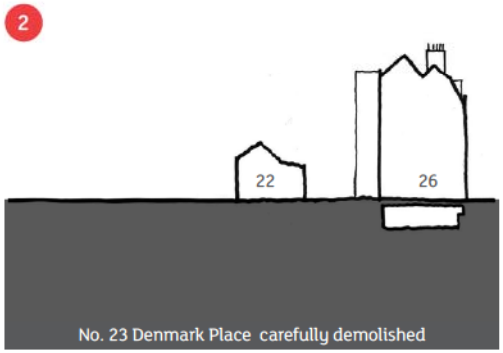

Existing


Proposal

Proposals

Process



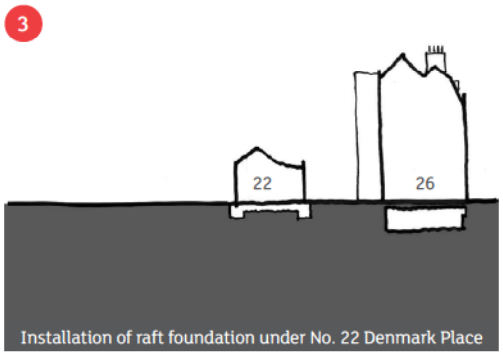


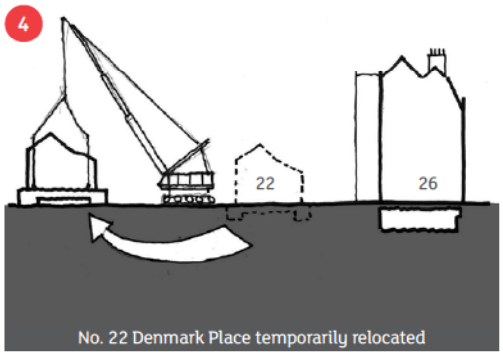
The following illustrated construction sequence will be undertaken in order to safeguard the significant buildings on site and deliver a new viable music venue with additional basement spaces.

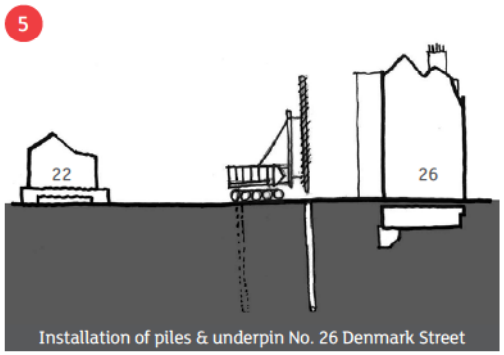
To facilitate the construction of the basement spaces a raft foundation is installed underneath No. 22 Denmark Street using traditional underpinning techniques. No. 22 Denmark Street is then temporarily relocated to another portion of the site to allow for installation of piles and is then moved back into its original position before the raft foundation is incorporated into the final ground floor slab. This process then enables the remainder of the works to progress.

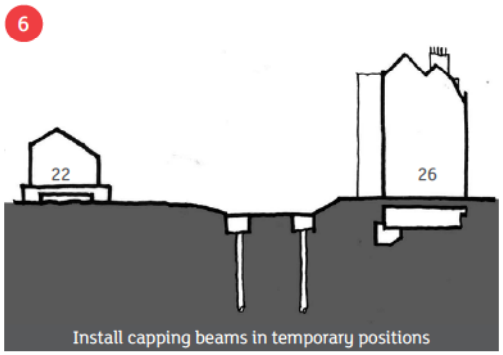
A detailed methodology of the lift sequence is outlined overleaf in a report by the specialist contractor, Abbey Pynford, who will be responsible for moving No. 22 Denmark Street.

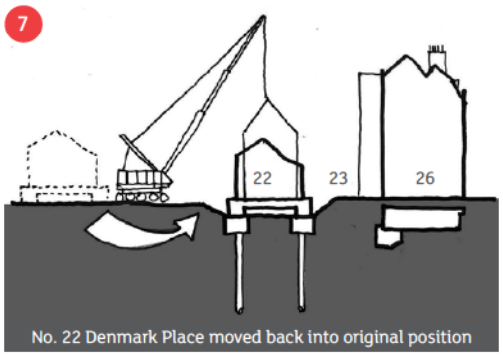
This methodology has a number of public benefits, both from a practical and cultural perspective. These are outlined in the coming pages.

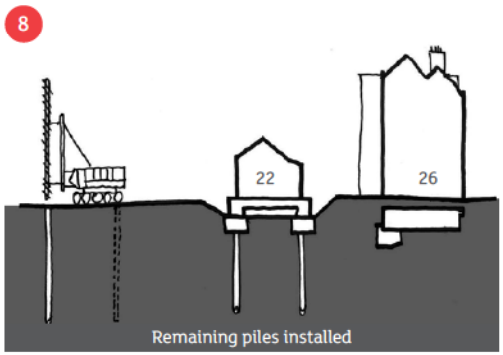


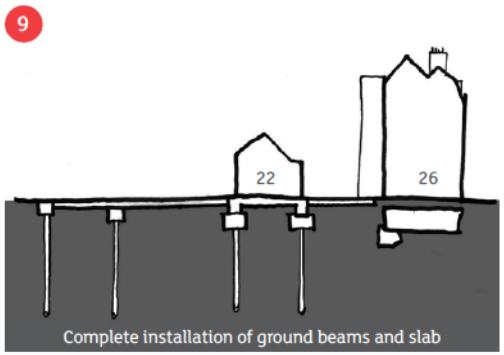


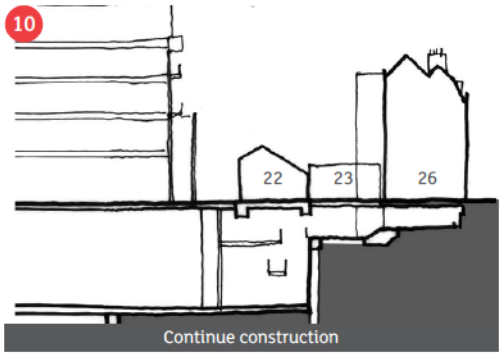












ABBEY PYNFORD

Our Ref: PNJ/GA20986/L8/np

Your Ref:

Date: 5th November 2015

Abbey Pynford Geo Structures Ltd
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Registered in England No. 8133914

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DRAFT

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DA1 2BJ

For the attention of: Mr. William Hepburn

Post and Email: willy@hsmith.co.uk
paulm@hsmith.co.uk
alan.wilsher@hsmith.co.uk

Dear Sirs

Re: GA20986 – "The Smithy" 26 Denmark Street, London, WC2H 8NN

Further to your instructions of 21st September 2015 we have completed a feasibility design with respect to the proposed moving of the above building by crane to a temporary new location as indicated on the marked up copy of the Enginuity drawing provided. This drawing suggests that the building needs to be moved a distance of approximately 27m. We understand that the building will in due course be located on a suspended ground floor slab and as such the preferred soffit detail for the slab is as indicated on Enginuity drawing 029-Z1/SK153.

Following extensive discussions since July 2015 with respect to the various possible means of moving the above building we confirm that it is our belief that the best way to minimise damage to the building we be to place it on a new reinforced concrete raft foundation to which the superstructure will be mechanically connected and to lift it onto a new temporary foundation with a large mobile crane.

Our lifting proposals are shown on the attached drawing GA20986/01A. As can be seen the proposed lifting points are inside the building which has the advantage of reducing the lift weight by reducing the amount by which the foundation slab needs to extend beyond the walls of the building and minimising the size and weight of the lifting beams. This will obviously effect the roof of the building which is in very bad condition. Please see below for comments with respect to the roof.

Our initial assessment of the temporary lifting condition is that the permanent reinforcement indicated on drawing SK153 is also satisfactory in the temporary condition.

Our assessment of the weight of the building based on the survey information provided is that the total weight to be lifted including the new reinforced concrete raft slab and building encapsulation will be approximately 1500kN to which needs to be added the weight of the crane hook and lifting beams at say an extra 15 tonnes. . It is within the capacity of an appropriately counter balanced 1000 tonne mobile crane to move this weight over a radius of at least 13.5m with a reasonable 15% capacity margin in a single lift.

The installation of the reinforced concrete raft foundation will be completed using standard underpinning techniques. The information currently available i.e. trial pits T26-1, 2 & 3 suggests that the existing walls extend well below ground level. The fact that there is an existing basement at number 25 would suggest a similar condition occurs on the wall adjoining number 25. Working on half the building at a time the underpinning raft slab will be installed by forming pockets in the external walls at the appropriate level below ground level, breaking out the brickwork in between, installing a prepared fair face soffit shutter and the appropriate reinforcement and casting the raft slab flooded up to the underside of the existing walls. Once half the building has been provided with a new foundation in this manner the operation will be completed on the other half of the structure. The appropriate lifting points will be installed at 4 locations in the internal corners of the raft slab. In order to provide a fair faced soffit to the foundation slab surface preparation for the raft slab will comprise 2 layers of polythene on hard board on 50mm of sand building installed to levels. The purpose of the polythene will be to debond the structural slab from the material beneath to facilitate the lifting operation.

In order to provide a surface to construct the raft slab on over the whole required area we have allowed for the existing small cellar under the Smithy and a sufficient part of the cellar of No25 being appropriately backfilled to the required level by yourselves. This backfilling will need to be Engineer designed so that stability is maintained to the piling mat on which the mobile crane will stand as the outrigger support pads for the crane will be placed on the piling platform in the gap between the crane and the back wall of the Smithy and therefore well above the existing cellar floor levels.

We have allowed to leave all surplus materials generated by our operations on site for clearance by others.

The foundation for the building at its temporary location will comprise a 250mm thick double mesh reinforced, reinforced concrete slab cast in an excavation in the top of the prepared piling platform, so that the top of the foundation is at the same level as the top of the piling platform, and topped off with 50mm of evenly raked sand so that the structure beds down onto the new foundation with no tendency for stress points to be generated by any unevenness of the surface. The level of the temporary foundation is a requirement of the mobile crane hire company as their delivery vehicles will need to be able to drive over it during erection of the crane and it will need to support the crane counterweights before the first lift as will the cellar backfill from which the building is lifted after the first lift.

In order to minimise any relative movement between the building super structure and the reinforced concrete foundation which is being lifted it will be our intention to cast short sacrificial sections of a proprietary shoring system into the raft slab such that subsequent to the foundation slab curing adequately longer sections of shoring can be bolted on so that the walls can be mechanically fixed to the foundation slab. This mechanical fixing must involve bolts or other fixings through the walls. This will be achieved wherever possible by bolting through existing window openings. There will however be walls, for example the wall facing number 25, which have no windows or other openings. In these locations it will be necessary to drill holes in the wall however this will be done on bed joints only and not through bricks. Also in order to make the super structure as rigid as possible we intend to infill window and door openings with block work which must also inevitably involve the removal of the existing door and window frames. We have allowed to carry out the infill block work but not to remove the existing door and window frames or to subsequently remove the block work after the building has been returned to its original position or to refit windows and doors.

With respect to the condition of the existing structure it was noted during the site inspection by our design department that the roof structure is in very poor condition with significant areas of rotten timber, fungal growth, warped timbers and loose connections. As such it will have to be repaired at some stage. We have allowed for this to be done before the move as a sound roof structure must contribute to the overall stability and rigidity of the building. To accommodate the internal lifting point referred to above the lifting cables will need to pass through the roof structure. Therefore it may be appropriate to replace the roof structure only before the lift and not replace the covering until the building is back in its final position. Temporary weatherproofing while the building is in its temporary location would be required which is not allowed for in this offer. This method of work would have the added advantage of further reducing the weight to be lifted. There is apparently a significant period of time available to get this work done before the lift. If the roof is not repaired before the lift holes will have to be made in it to accept the lifting cables and to extend the encapsulation to support the chimney and we will not be prepared to accept responsibility for damage to it during the lifts.

With respect to the lifting operation we have allowed for the piling platform for the large piling machine which is to be used on the site providing an adequate platform for the mobile crane. We are advised by the crane hire company that the advised capacity of the piling platform (414kPa) is adequate for their purposes.

We are advised that each lift is likely to take 3 days comprising 1 day set up, 1 day for the lift and 1 day to dismantle. As stated above we propose to sublet the lifting process as a "contract lift" making it the responsibility of the crane hire company.

We have not allowed to lift the building over any obstacles at ground level. Our offer is to lift the building just sufficiently to provide a reasonable clearance over general ground level.

We understand that the building is to be returned to the same location horizontally and vertically as that from which it was removed. It would be convenient if the prepared soffit from which the building will be lifted could be retained so that we could put it back in the same place and for the purpose if this proposal we have allowed for this to be possible. If this is not possible we will need to construct a second temporary foundation at the original location to return the building to while it is incorporated in the permanent suspended slab. This foundation will eventually need to be removed from under the building during the final dig out and this will need to be considered in the design of this foundation which will no doubt necessitate discussions with the contractor who will have to do the work. WE would request details of the tolerances to which the building needs to be returned to its original position.

We have now based on the latest information available prepared a preliminary estimate as detailed below:-

1 Detailed scheme design.

2 Install reinforced concrete underpinning raft slab in 2 sections incorporating appropriate lifting points

Install temporary framing including 3 month hire period for proprietary shoring equipment

3 Frame up existing structure with proprietary shoring including appropriate timber packing fixings etc.

4 In fill window and door openings with 100mm thick 7N block work

5 Construct temporary foundation

6 Attendance on lifting operations x2

7 Dismantle temporary framing

8 Clear Site

9 Lifting operation 2 x £

Total of preliminary estimate

The cost of the lifting operation includes a mark-up for ourselves to reflect our view of the need for us to manage and be responsible for the payment of the crane hire company. We would be entirely happy in the event that you elected to enter into contract with the crane hire company directly in which case no mark-up would apply would apply.

We have consulted our insurance brokers with respect to this project. We are insured with respect to our negligence in carrying out works of this type and the lifting operation itself will be insured as we intend to arrange for the lifting operations to be carried out as "contract lifts". We will require general insurance on the building to be maintained by the owner/ client/ main contract as appropriate and for the insurance situation as a whole to be reviewed before any work commences.

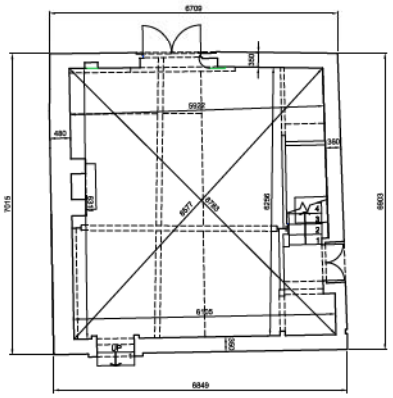
We trust that the above information is of use to you at this stage.

Yours faithfully
for **Abbey Pynford**

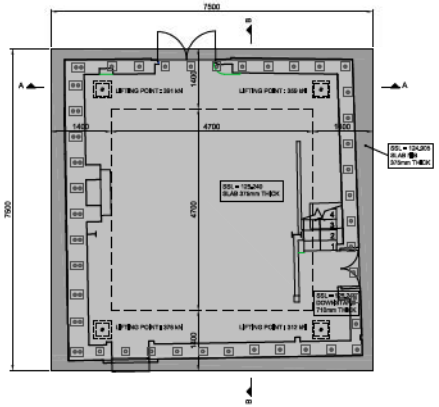
P N Jones BSc, C Eng, MICE
Business Development Director
Underpinning Division

Proposals

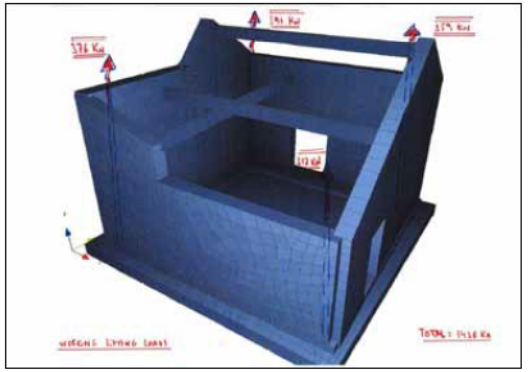
Process



GENERAL LAYOUT EXISTING BUILDING



SLAB LAYOUT



DO NOT SCALE Contractor to check all dimensions and report any omissions or errors

GENERAL NOTES:

ALL DIMENSIONS IN mm

THIS DRAWING IS TO BE READ IN CONJUNCTION WITH RELEVANT ABBEY PYNFORD DRAWINGS AND CALCS.

ALL SLAB PENETRATIONS TO BE CHECKED AND AGREED ON SITE PRIOR TO POUR.

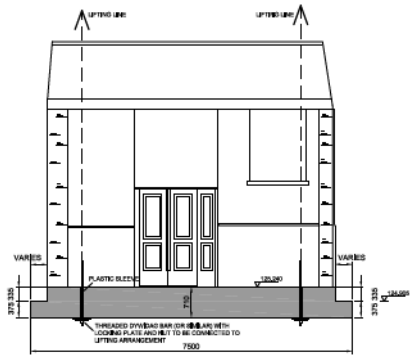
THIS DRAWING SHOULD NOT BE USED FOR SETTING OUT OF ANY EXISTING OR PROPOSED INCOMING AND OUTGOING BELOW GROUND DRAINAGE AND SERVICES. LOCATION OF ALL EXISTING BELOW GROUND DRAINAGE AND SERVICES SHOULD BE DETERMINED ON SITE PRIOR TO CONSTRUCTION.

SLAB NOTES:

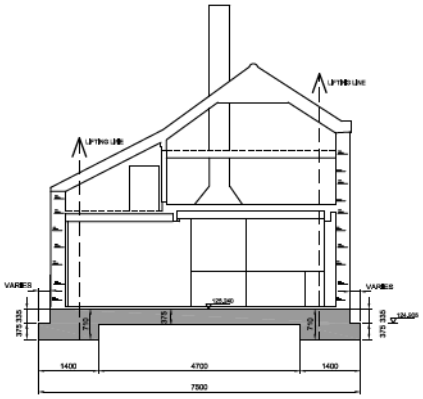
SLAB AREA = 66.25 m²

VOLUME OF CONCRETE = 29.5 m³

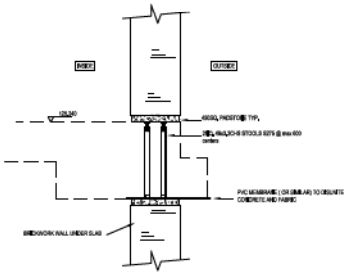
R.C. 35 DESIGNATED CONCRETE MIX



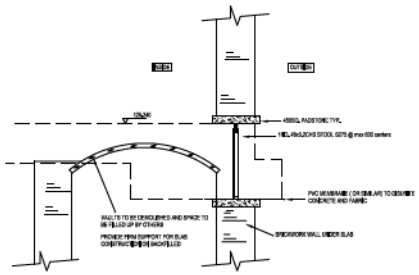
SECTION A-A



SECTION B-B



DOUBLE STOOLING



SINGLE STOOLING

Rev	Description	By	Chk	Date
A	FIRST ISSUE - CONCEPT DESIGN	JO	MJ	30.10.15

ABBEY PYNFORD

Project
22 DENMARK PLACE - THE SMITHY
LIFTING AND MOVING OF AN EXISITING BUILDING

Drawing Title
GENERAL ARRANGEMENT OF SLAB.
STOOLS SETTING OUT.
PRELIMINARY DETAILS.

Scale at A1	Drawn By	Date	Checked By	Date
1:50 / 1:20	BH	29/07/15	JO	29/07/15

Project No.	Type	Drawing No.	Revision
GA20986	U	01	A

INFORMATION ☒ APPROVAL ☐ CONSTRUCTION ☐ AS BUILT ☐

Proposals

Public Benefits

Both the scheme and the construction methodology create a number of public benefits, from a practical and cultural perspective. These are outlined below.

Consistent Restraint to the Crossrail Tunnel Beneath

The proposed scheme allows a consistent restraint along the length of the Crossrail tunnel using the same tension pile and adit beam technique. The combination of the two effectively forms a staple to hold the Crossrail tunnel down. This technique will simplify the construction sequence and reduce the risk of differential movement to the tunnel beneath compared with the previous scheme. The alternative scheme has been discussed with Crossrail and Crossrail have expressed a preference for the proposed scheme.

Better Protect 22 Denmark Place "The Smithy"

By temporarily moving the Smithy from the construction site we believe the building will be better protected. The planning scheme calls for substantial underpinning of the Smithy with the building in place to create a reduced level platform from which 3no. 2m diameter hand dug caissons will be dug. 2 of the 3 caissons will be directly beneath the walls of the Smithy. Although moving the building is in itself a large intervention, we believe that for a small building this will best protect it compared with the significant work required to keep the building in place and the risk of construction at such close proximity. Additionally, the proposed scheme works on the basis of a "top down" sequence of basement excavation rather than "bottom up". The defining advantage of this is to install the ground slab first, prior to excavation beneath. This is intended to lock the top of the retaining wall piles across the site, thus reducing ground movements and impact on existing buildings.

Better Protect 26 and 27 Denmark Street

The proposed scheme has several advantages over the original in terms of better protecting the existing buildings at 26 and 27 Denmark Street. Firstly, the deep excavation of the basement is pulled back away from the buildings. This physically moves the working area away from the buildings. Secondly, the large diameter piles and caissons are removed from the scheme, thus reducing the vibration and local movements associated with the type of machinery and construction techniques. Lastly the deep underpinning to the rear of No. 26 is removed and replaced with a standard piled retaining wall. Underpinning a wall this deep, though possible, would risk additional lateral and vertical movements.

Safer Means of Excavation and Pile Installation

The removal of the 23 Denmark Place and the moving of the Smithy ultimately provides a safer means of excavation and pile installation for the project. Under CDM regulations, we, as designers, must strive to design out risk where possible. The removal of the hand dug caissons and the deep underpinning in favour of conventional piling from ground level would reduce the risk to the workforce on site.

Support And Develop The Music Industry

The scheme allows for the creation of a viable and practical music venue and bar, securing the musical heritage of the site and retaining an iconic musical space. Our client, Consolidated Group, have worked to create an environment that will be a new centre of music for London. This includes the consented Events gallery music venue as well as the proposed music venue below the Smithy. This will compliment the existing music shops along Denmark Street.

As part of the design process we, along with Consolidated, have met with The Music Venues Trust, The Music Publishing Association and The Greater London Authority to discuss the scheme and take on their advice in the design.

All three of these bodies support the proposals. Letters of support are being prepared and will be issued under separate cover to sit alongside the application documentation.

Heritage Benefit To The Built Environment

The proposals will better reveal the significance of two rare and very important heritage assets, the former coach smith's premises at No. 22 Denmark Place and, crucially, the seventeenth-century house at No. 26 Denmark Street (Grade II).

Conclusion

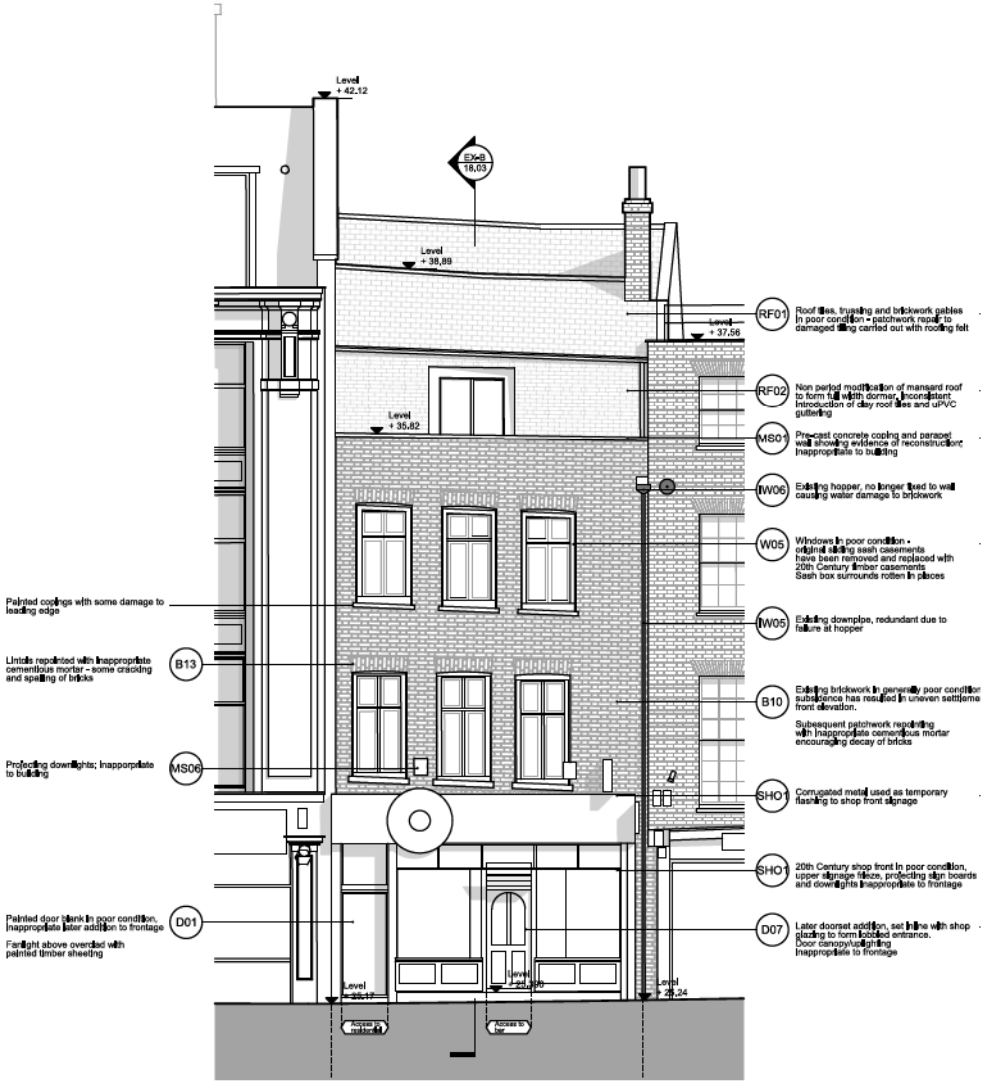
From a structural engineering perspective, the proposed scheme betters the original on almost every front. The proposed scheme will:

- Better restrain Crossrail with a similar retention system along its length.
- Better protect the historically important Smithy.
- Better protect the listed buildings at 26 and 27 Denmark Street.
- Be safer to build.

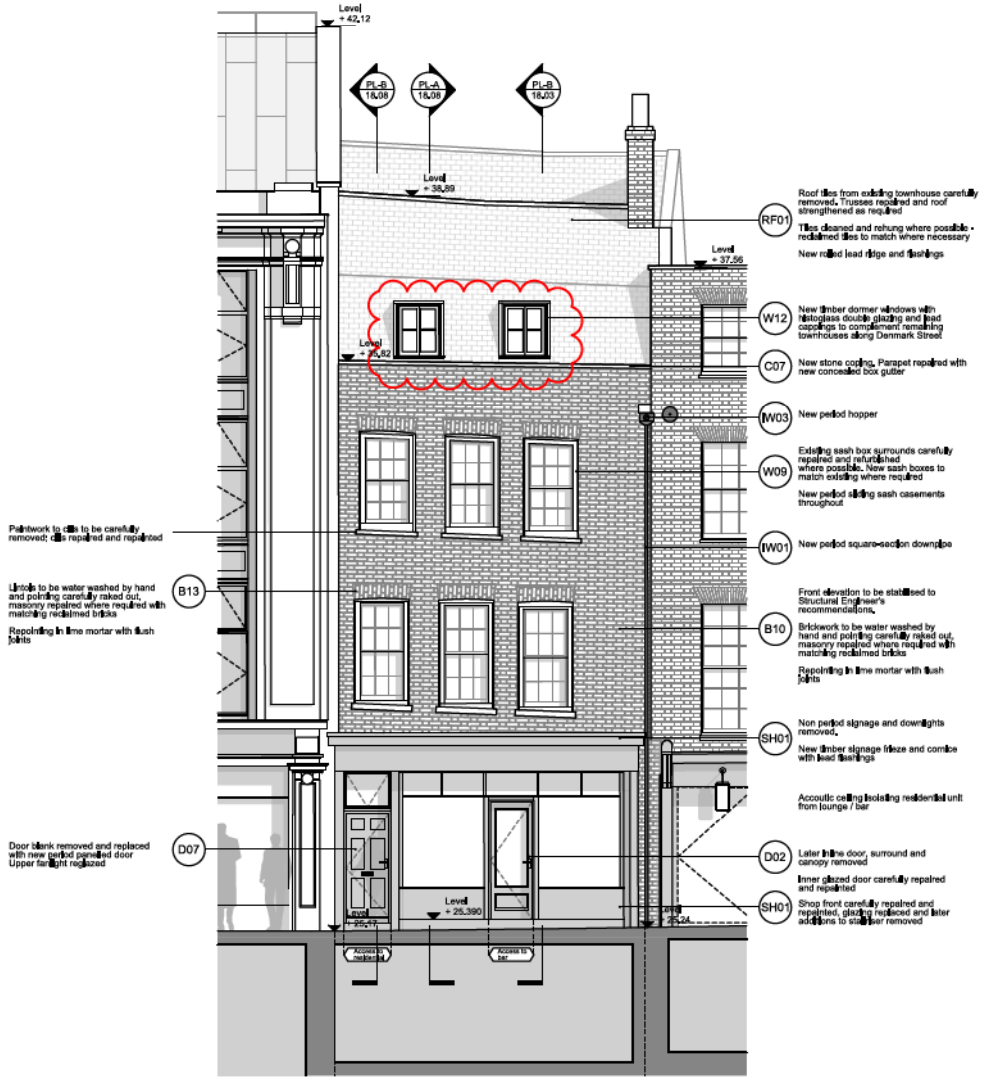
From a cultural perspective, the proposed scheme betters the original on almost every front. The

Proposals

Denmark Street Facade



Existing



Proposal

Proposals

Denmark Pla ce Facade

Proposals

Denmark Place Facade

1. *Existing East Elevation - Denmark Place showing applied decorative timber trussing.*
2. *English Heritage Photo Archive: 1989. View along alleyway to Denmark St at corner of No. 22/23 Denmark Place.*
3. *Site Visit: August 2009. View along alleyway to Denmark St at corner of No. 22/23 Denmark Place showing applied decorative timber trussing.*

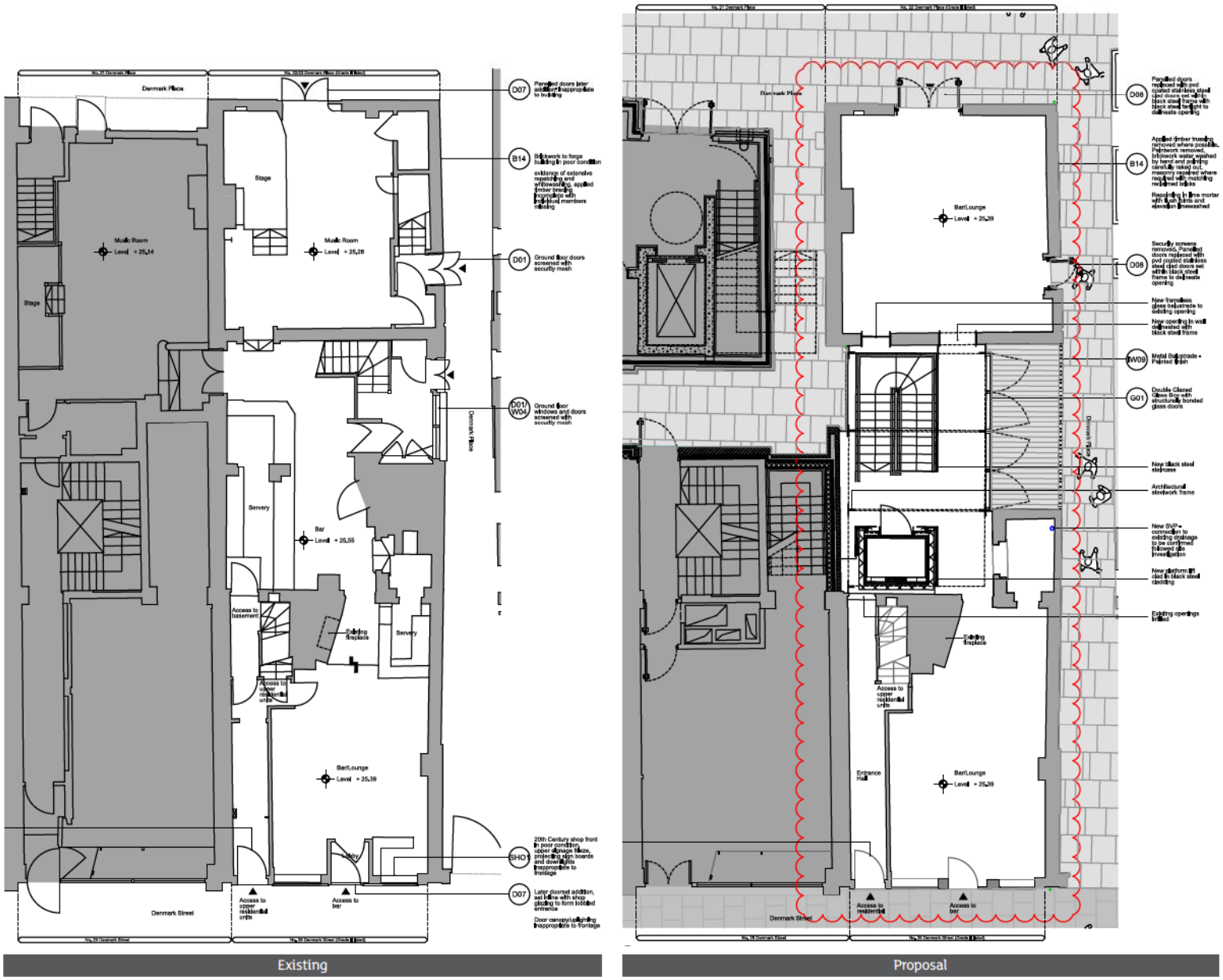
Within the wider scheme Denmark Place is to be considerably improved, with a number of heritage facades containing a new hotel and giving the alleyway a greater sense of place

The addition of a new pedestrian route under No. 21 Denmark Street (alongside the listed 20 Denmark Street) will also provide greater footfall and 'life on the street.'

No. 22 Denmark Place is in a poor state of repair and has been much adapted over the years. Illustrated on the far left are the existing and proposed facade conditions for No. 22 Denmark Place.

Proposals

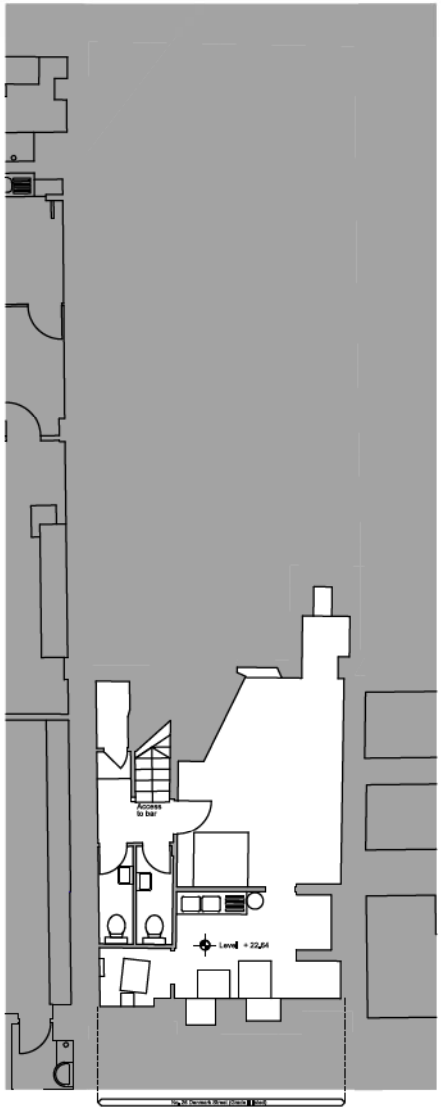
Ground Floor



Existing | Proposal

Proposals

Lower Ground



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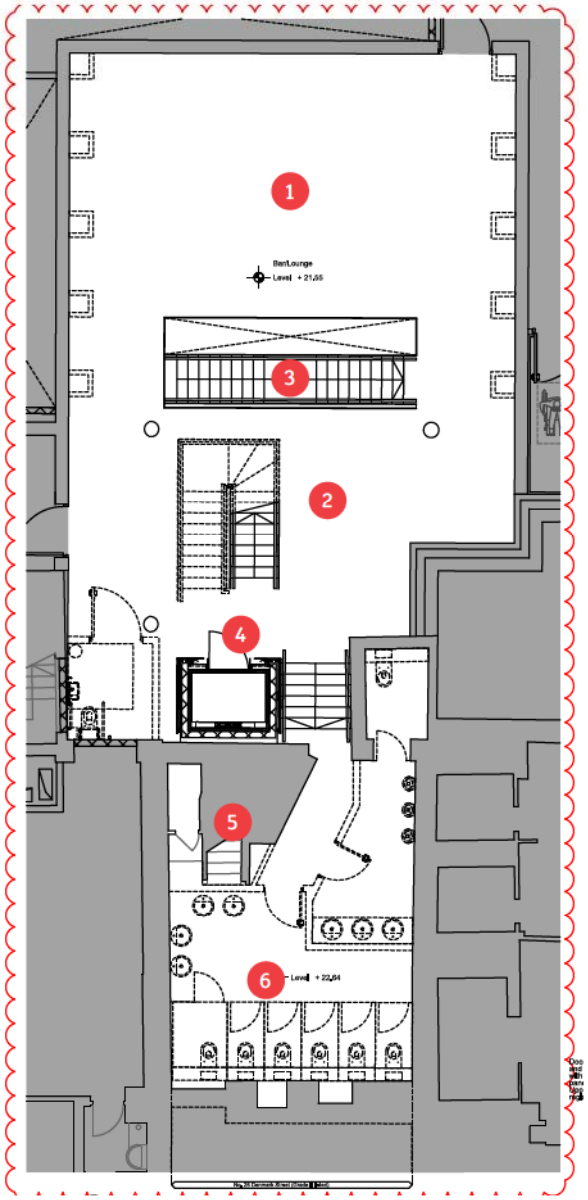
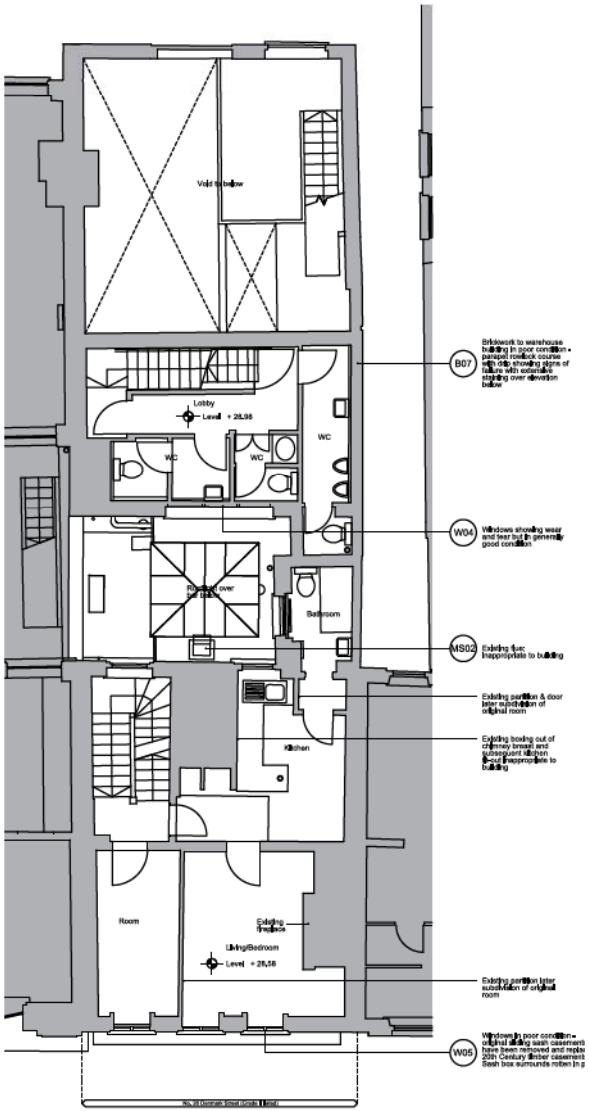


Proposal

1. Ground under No. 22 Denmark Place. reworked as new basement space.
2. New basement space under No. 23 Denmark Place.
3. New black steel feature staircase to Mezzanine level below.
4. New black steel feature staircase and lift to ground floor above.
5. Existing staircase boxed out but retained in plan form
6. Basement space in No. 26 Denmark Street reworked as larger toilet facilities.

Proposals

First Floor



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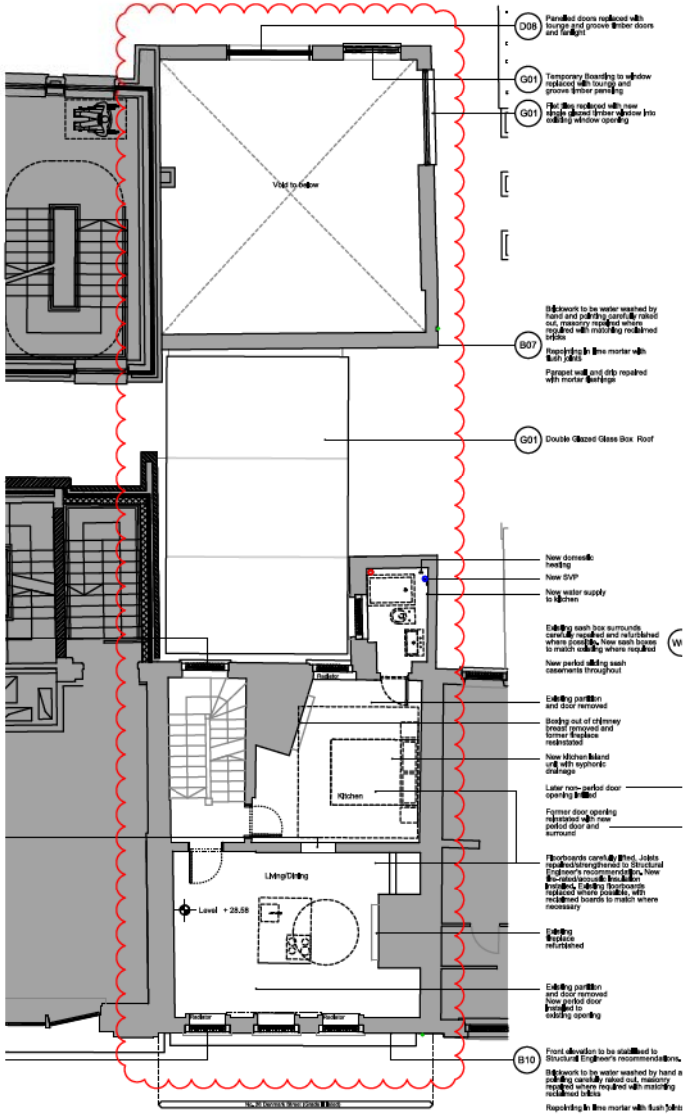

Existing