

DESIGN AND ACCESS / HERITAGE STATEMENT

GHK ARCHITECTS

Project:	No12 Gray's Inn Square London WC1R 5AZ First Floor North - Existing Floor Structure Repairs/ Beam Strengthening	Ref/File No:	HK 2191/3.1
Client:	The Honourable Society of Gray's Inn		
Title:	Design and Access / Heritage Statement		
Date:	16th March 2016		

Introduction:

No12 Grays Inn Square dates from mid c.1680's and has been in use as Barristers Chambers / Residential accommodation since that date. Parts appear to have been extensively restored in the 1950's following Second World War damage, particularly areas above First Floor and the External façade to Grays Inn Road. The adjoining property of No11 Grays Inn Square appears to have been completely rebuilt in the 1950's with an internal lightwell created at the South end against the dividing wall to No12 Grays Inn Square. Small narrow more modern casement windows exist into the Lightwell and were probably incorporated in the 1950s rebuilding.

First and Second Floors are currently linked internally with No 13 and the property is listed Grade II* as a part of a group with Nos.13&14 Gray's Inn Square together with their attached railings (see listing description below).

It would appear that the upper floors of No 12 Gray's Inn Square (North) have previously undergone substantial refurbishments previously and possibly from rebuilding of bomb damage after the Second World War, together with subsequent refurbishments. This can also be seen on the East elevation where the North façade facing brickwork appears to have been rebuilt - vertical saw tooth brick separation rebuilding lines between the Staircase windows façade and No 12 North accommodation section of the facade.

These upper floors at First/ Second Floors (North) also do not retain any of the historic features that exist on the lower floors eg; no fireplaces or historic wall panelling evident within the rooms. The majority of the finishes appear to be modern timber stud with plain plaster/ plasterboard construction wall finishes. Instead of historic moulded timber cornices modern coved cornices are provided to parts of some existing Offices although not all rooms. Coved cornices were widely used in properties rebuilt in 1950's after the Second World War as can be seen in many 1950's buildings on the Honourable Society of Gray's Inn Estate.

The sets of Existing Barristers Office Accommodation (First and Second Floors North) became vacant at the end of November 2015.

In addition to this Application to repair and strengthen the timber bressumer beams and timber floor structure to No12 Grays Inn Square First floor North only, separate Planning and Listed Building Consent Applications have been made to the London Borough of Camden to change the First and Second Floors North from Office use to Residential. These Applications have recently been validated.

Listing Description:

No12 Gray's Inn Square is a Grade 2* Listed Building located within The Honourable Society of Gray's Inn Estate.

Description:-

The Existing property of No12 Gray's Inn Square forms part of the Terrace of Nos 12, 13 & 14 Gray's Inn Square and these are Listed Buildings located within The Honourable Society of Gray's Inn. No12 and the Nos 13 &14 properties are described in the listing as noted below:-

Grade 2*

Listed Terraced Chambers dated c1684-88, with later restorations. Four storeys and cellar. The properties are set on the East side of Gray's Inn Square and form an important part of the scale, character and quality of the formal setting of the square within The Honourable Society of Gray's Inn and The Bloomsbury Conservation area.

Exterior:

The properties consist of brown brick with red brick dressings and brick bands between floors. Tiled roof with 4 storeys and cellars. 7no timber framed windows to each, the Gatehouse has two windows and No.14 has additionally 2 half windows. Stone doorcases with consoles and broken segmental pediments with balls in centre. Gauged red brick flat arches and dressings to flush frame windows with boxing and glazing bars. Wood block bracketed eaves cornices.

Interior:

The properties retain some panelled rooms. All have timber dog-leg stairs with turned balusters and square newels to the central staircases.

Subsidiary features:

attached cast-iron railings with urn finials to Lightwell areas.

The Gatehouse: between Nos 13 & 14 has brown brick with rusticated stone on the Ground floor. Rusticated stone quoins and stone bands. Flat arch carriage entrance with Griffin carved on keystone. Windows with stone architraves and flush frames with glazing bars. Enriched modillion cornice with pediment. Gray's Inn Road elevation is similar but windows have red gauged flat arches and dressings. In the carriageway/archway, windows and doorway are located of former C18 bookshop with frame for shutters and panelled surround.

Existing timber floor structure – First Floor North

Following the vacation of the First Floor to No12 Gray's Inn Square First Floor North floor carpet finishes were peeled back to carry out repairs to loosening floor boards in the centre of the First floor North Hall where there also appeared to be 60 to 80mm of historic settlement – similar to other c1680's properties within Gray's Inn Estate.

Beneath the Hall flooring construction was found to be timber bressumer beam/joists construction - original and part modified floor structures. Directly below the Hall there was a junction of two bressumer beams with the main central beam spanning North / South and a junction of a subsidiary beam running West to the external wall to Gray's Inn Square. This beam was in poor condition visually with horizontal splitting in the centre of the beam horizontally and a narrower split in the centre of the beam vertically, additionally this timber beam had been heavily notched in the past for services crossovers. See photograph sheet P040 enclosed with this Application

Upon further structure safety investigation of the floor structures generally, other bressumer beams exhibited some splits and shakes and adjacent to the Gray's Inn Road external wall a pocket of rot was found penetrating the whole depth of the centre of the bressumer beam, possibly from a long term old pipe leak as it is adjacent to an old heating pipe crossover/notch. Parts of the North / South centre bressumer beam and a second beam junction running West to the Gray's Inn Square external wall are concealed under existing Toilet partitioning and modern ceramic tiled Toilet flooring, but from camera investigations there are similar splits/shakes apparent in the sides of the bressumer..

Timber floor boards did not appear to be original, and were probably 1950s replacements narrow square edge timber floor boards as encountered in other 1950.s rebuilt properties within Gray's Inn. Original floor boards would have been much wider random width boards as have been noted in other 1680's properties within The Gray's Inn Estate. Existing floor boards removed for the structural safety review have been retained within the rooms for reinstallation.

Similarly partitions to this First Floor North accommodation appear to be formed with hollow clay blocks and plain plastered finishes, again a typical construction detailing frequently encountered in the 1950s rebuilds. Large format coved cornices are provided within the rooms and it is clear that the partition construction at First Floor North is typical and in keeping with 1950's rebuild detailing.

See also Photosheet P040 enclosed with this Application for details of the existing flooring.

In conclusion; following the structure safety review additional timber structure strengthening, repairs are required, as soon as practically possible, and additional support would be required to carry out the repairs . Partitions at Ground floor below are not directly below First floor bressumer beams and do not offer structural support from Ground Floor- possibly hollow clay block construction partitions. Ground floor ceilings are plaster on metal mesh reinforcement.

Analysis of options for First Floor North Timber floor structure:

We have initially looked at repairs using flitch plates or stainless steel rod /resin repairs and strengthening plates to the underside/top of the beams or additional supports posts/columns at Ground floor /Basement vault level as there are no direct supporting walls under the bressumer beams at Ground Floor Level.

At First Floor level, 1950's partitions run across the tops to parts of the timber bressumer beams. Secondary bressumer beams/joists are also of the same depth as the principal North/South centre beam ruling out flitch plates applied to the sides of the beams.

Proposals:

It thus became clear that any solution to avoid disruption and support columns at Ground Floor would need to be installed at First floor with some temporary removal of the 1950's partitions/finishes and ceramic tiled toilets. However It is not generally practical to just alter sections of the 1950's clay block partitions as they become unstable and impossible to repair. We suggest that these partitions where required to be removed are replaced by similar appearance lighter weight timber stud partitions with plain plaster finishes/existing skittings refixed to allow repairs to the tops of the existing timber bressumer beams, particularly under the toilet areas. See drawing Nos HK 2191/SK 036 and SK037 enclosed with this Application. Introducing permanent posts or columns into the spaces at Ground floor, to reduce the span of the beams was not thought to be acceptable to either the appearance or use of the rooms at Ground floor, or the consequential effects on Basement vaults/floor slabs and foundations.

It is proposed to carry out repairs / strengthening to the timber bressumer beams and floor joists at First Floor retaining and repairing the existing timbers with some temporary propping required at Ground floor during and after installation to allow beams to be supported, repairs and resins to adequately cure together with sections of First floor North partitions and toilet finishes removed and replaced on completion to match existing. Repairs proposed are as follows:-

- North/South centre Bressumer beam: Top surface laminations of wbp plywood strips glued and screwed above rod reinforced slot in the top of the beam and filled with bonded epoxy resin
- East/West Bressumer beam from centre North /South beam to the Grays Inn Road Elevation: Full depth pocket of rot to be cut out with stainless steel cross stitching and filling the area of decay with low viscosity epoxy grout.
- 2no East West Bressumer beams from the centre North/South beam to the External wall to Grays Inn Square: Cross stitching and resin filling of all face shakes and splits including below Toilet floors/partitions. Filling and stainless steel stitching of the split sections of beam under The Hall where fixed to the North/South centre beam.
- Other repairs and strengthened beam/joist details are proposed as indicated on the drawings enclosed with this Application.
- Existing floor boards will be reinstated on completion with additional treated timber continuous firrings applied to the tops of floor joists /beams to the level of the top surface laminations to the centre bressumer running North/South in the floor structure. Skitrings/doors to be adjusted

and modified to suit and a ramped threshold provided to the Entrance doors from the Main Staircase.

Although the proposed works bring stresses within the beam to an acceptable level, the structure still fall short of modern office loadings. In order to reduce weight and given that the room contained no original historic or decorative plasterwork, it is proposed that the Ground Floor existing mesh reinforced plaster ceilings be retained with mineral wool insulation installed between the First floor beams and joist to upgrade the construction of the First floor.

See also the proposals contained on the drawings submitted with this Application.

Access:

All access to and from the property will remain as existing and there are no access implications for this Application to repair and strengthen the timber bressumer beams and the timber floor structure to No12 Grays Inn Square First floor North.

Prepared by
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