/ APPENDIX G
// HEYNE TILLETT STEEL STRUCTURAL SURVEY

24th February 2020
Ref: 2300-04
Visit by: Sam Ling

Grange Central Saint Martins – Site Visit Report No.4

This report summarises the findings of the structural condition survey completed by HTS in the week commencing 17.02.2020. It discusses elements in obviously poor condition or where further investigations are required. A location plan can be found attached.

In all locations where water ingress has been identified the source of the water ingress should be identified and rectified as part of the proposed works.

Actions Key: Urgent
Not urgent

Basement

B.1 Corroded steel joist trimming the edge of the pavement light.

Clean and reinstate cover.

B.2 A beam supporting the underside of the lecture theatre is heavily corroded.

Cover to full length of beam to be removed to determine corroded length.

B.2 Significant water ingress is apparent around the beam support.

Remove all cover in areas with obvious water ingress to determine the extent of corrosion.

B.3 Corroded steel joist trimming the edge of the pavement light.

Expose full length of joist, clean and reinstate cover.

B.4 Corroded steel joist trimming the edge of the pavement light.

Expose full length of joist, clean and reinstate cover.

B.5 Heavy water ingress noticeable at high level with significant cracking along assumed length of joists.

Remove cover to joists in order to determine extent of corrosion.

B.6 Mortar has disintegrated between bricks.

Repoint masonry.

B.7 Mould and damp is apparent around the corbelling and against the masonry wall.

Remove area of paint to determine extent of damage to masonry.

B.8 Water ingress noticeable at high level.

Remove cover to joists in order to determine extent of corrosion.

B.9 Water ingress and significant damp found in pavement vault.

B.10 Water ingress in the vaults had led to significant corrosion and delamination of numerous beams and joists.

Underside of slabs and beams to be propped immediately.

A permanent solution is to be determined.

B.10 Continued.

B.10 Continued.

B.10 Continued.

B.11 Corrosion to the joist is apparent.

Remove cover to length of joist to determine extent of corrosion.

Lower Ground Floor

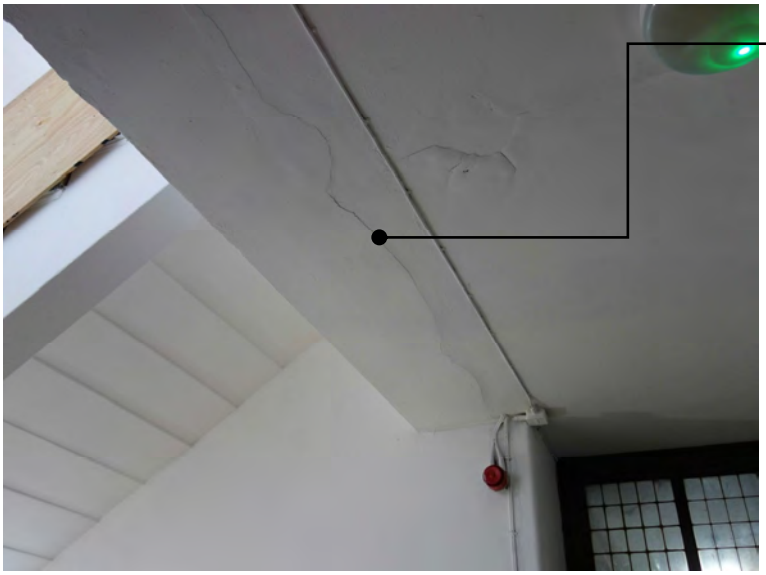
~~LG.1~~ Joists in the floor structure over the historic lecture theatre appear to have buckled/warped

As the joists are to be removed in the proposed scheme, it is recommended that this floor is removed as soon as possible.

Ground Floor

G.1 Water ingress noticeable at high level.

Remove cover to joists in order to determine extent of corrosion.



G.2 Cracking is evident to the underside of the beam supporting the stair.

Remove plaster and concrete cover to determine extent of corrosion to steel beam within.

G.3 Water ingress noticeable at high level.

Remove cover to joists in order to determine extent of corrosion.

G.4 Cracking is evident on the underside of the arch.

Remove plaster to determine if cracking extends to the structure above.

G.5 Water ingress noticeable at high level.

Remove cover to steel in order to determine extent of corrosion.

First Floor

1.1 Cracking in plaster as base of arch.

Remove plaster to determine if cracking extends to the structure within.

1.2 Cracking can be seen along the length of the beam.

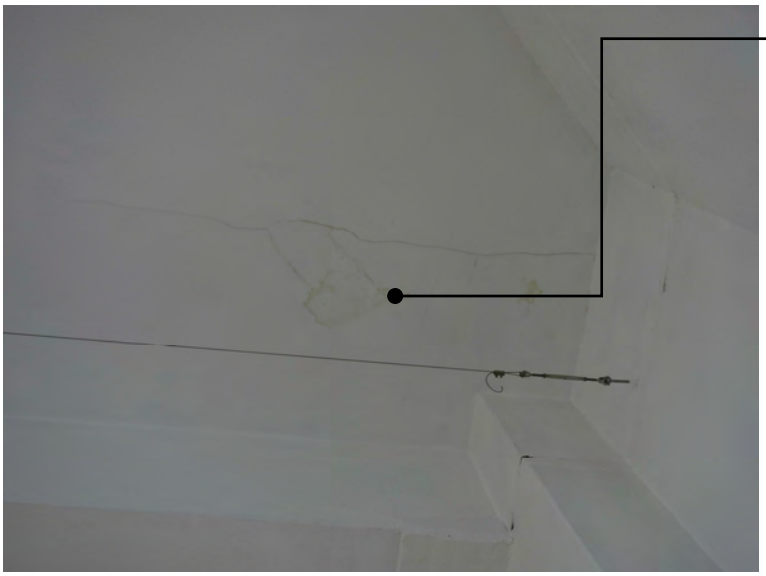
Remove plaster and cover to the beam to determine the extent of corrosion within.

1.3 Cracking can be seen along the side of the stair beam.

Remove plaster and cover to the beam to determine the extent of corrosion within.

1.4 Significant cracking can be seen in assumed joist locations.

Remove plaster and cover to determine extent of corrosion to the joists.



1.5 Water ingress noticeable at high level.

Remove cover to joists in order to determine extent of corrosion.

1.6 Water ingress noticeable at high level.

Remove cover to joists in order to determine extent of corrosion.

1.7 Water ingress in the masonry is apparent externally.

Review cause of water ingress, assumed to be the drainage, and fix to allow the wall to dry out.

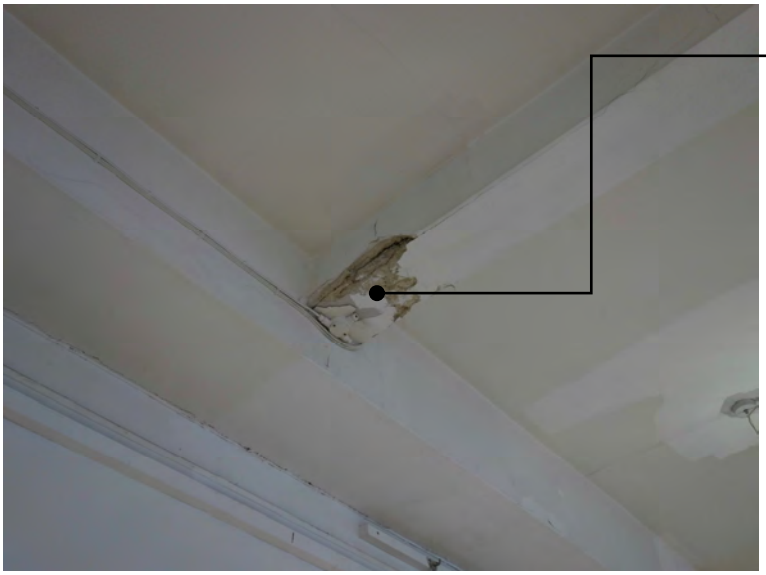
1.8 Water ingress noticeable at high level.

Remove cover to joists in order to determine extent of corrosion.

1.9 Cracking apparent in assumed joist locations.

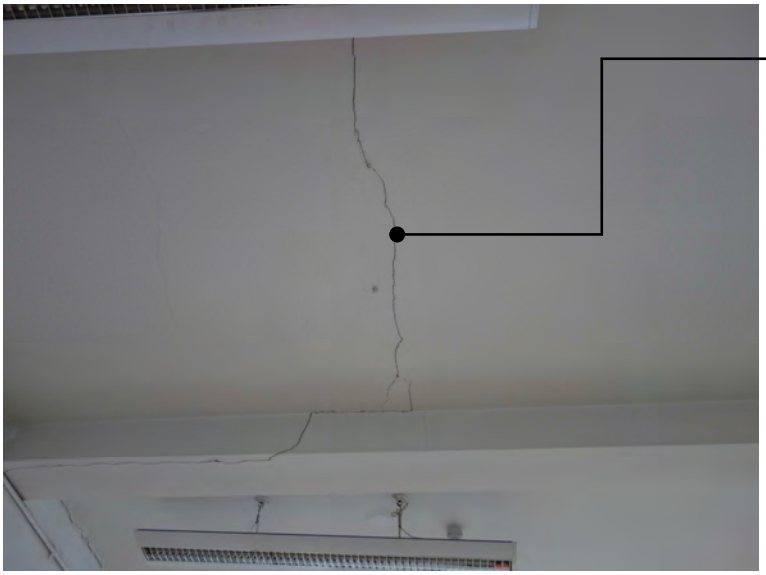
Remove cover to joists in order to determine extent of corrosion.

Second Floor



2.1 Disintegration of the plaster is apparent at the end of the secondary beam.

Remove plaster encasement to the beam to determine extent of corrosion to steel within.



2.2 Cracking in an assumed joist location continues down the supporting beam.

Remove cover to joists in order to determine extent of corrosion.

2.3 Water ingress apparent in the masonry wall.

Remove finishes to determine the state of the masonry within.

2.4 Water ingress and cracking in lintel can be seen,

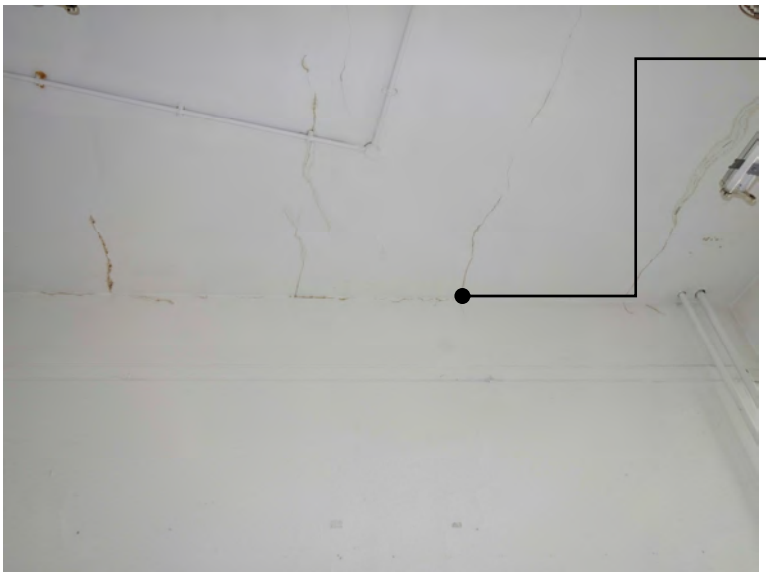
Remove finishes to lintel to determine extent of corrosion.

2.5 Water ingress can be seen at the head of the wall and on the bottom of the slab.

Remove finishes and cover to the joists to determine the extent of corrosion.

2.6 Water ingress and cracking is apparent along the beams supporting the stair and within the wall above the window.

Remove the finishes and concrete cover to determine the severity of the corrosion.

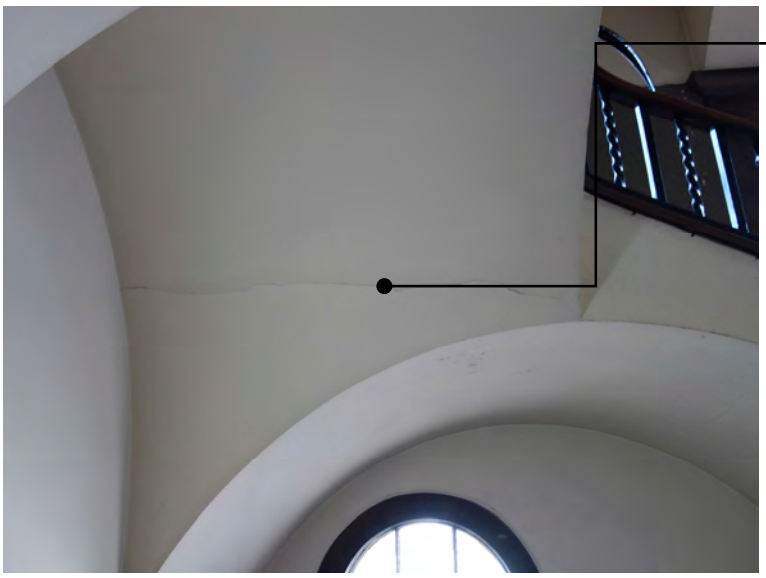


2.7 Cracking and possible signs of corrosion apparent at end of assumed joist locations.

Remove finishes and cover to joists to determine extent of corrosion to joists.

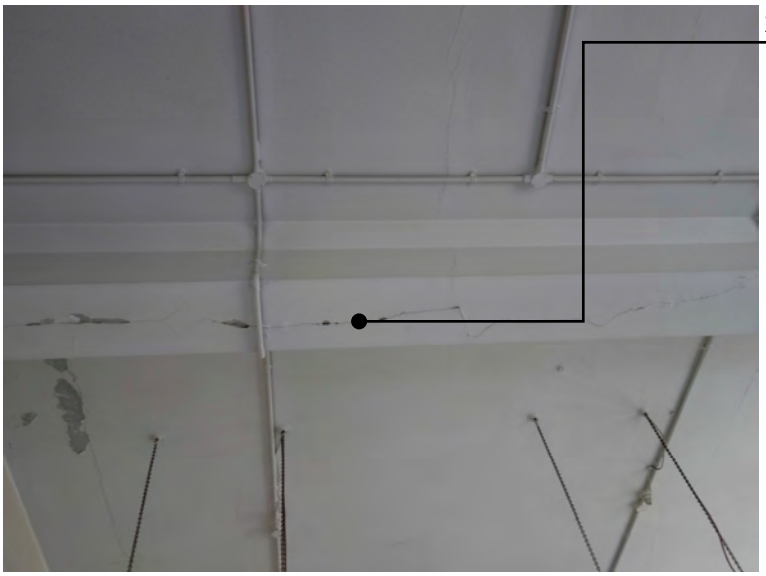
2.8 Cracking in plaster as base of arch.

Remove plaster to determine if cracking extends to the structure within.



2.9 Cracking at the base of the stair arches can be seen.

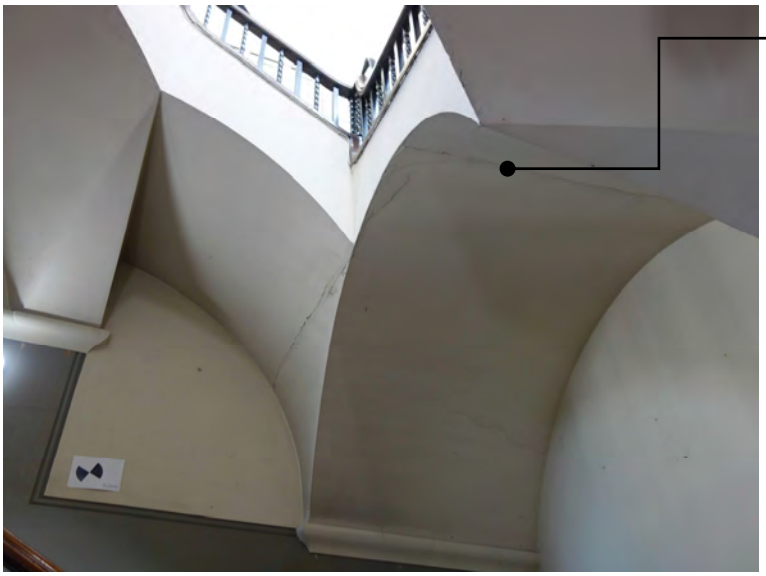
Remove plaster to determine if cracking extends to the structure within.



2.10 Cracking to the plaster to the underside of the beam.

Remove plaster and cover to the beam to determine the extent of corrosion within.

Third Floor

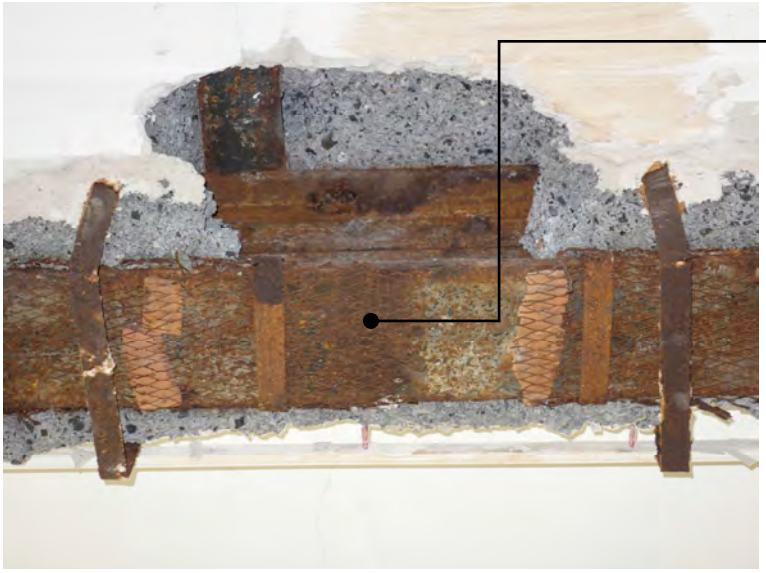


3.1 Cracking at the base of the stair arches can be seen.

Remove plaster to determine if cracking extends to the structure within.

3.2 Cracking in plaster as base of arch.

Remove plaster to determine if cracking extends to the structure within.

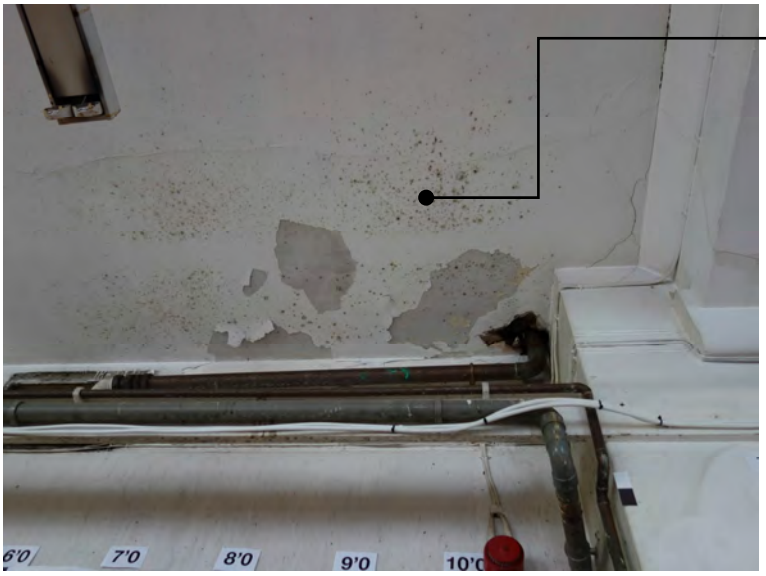


3.3 Light corrosion to beam.

Clean beam and reinstate cover.

3.4 Cracking along the joist adjacent to the wall can be seen.

Remove finishes and cover to the steel to determine extent of corrosion within.



3.5 Mould on the ceiling indicates moisture within the slab.

Remove plaster to determine condition of structure within.

3.6 Cracking to the plaster beneath the steel joists extends into the window arch.

Remove finishes to the base of the arch to determine if cracking extends to the structure within.

3.7 A hole has been core drilled through the slab, cutting through one of the steel joists.

Temporarily prop each side of the cut joist to the slab below (within the service void).

Permanent repair required.

3.8 Significant cracking to masonry adjacent to the window.

Remove finishes to the masonry to determine if cracking extends to the masonry behind.

3.9 Water ingress and cracking is apparent along the beams supporting the stair and within the wall above the window.

Remove the finishes and concrete cover to determine the severity of the corrosion.

3.10 Water ingress apparent at end of primary beam and within slab.

Remove finishes and cover to beam and slab joists to determine extent of corrosion within.

Fourth Floor

4.1 Exposed steelwork shows signs of heavy corrosion.

Remove plaster to underside of entire beam to determine the extent of corrosion.

4.2 Corrosion to steelwork and water ingress on the wall is apparent.

Remove plaster and underside of concrete encasement to the length of the steelwork to determine the extent of corrosion.

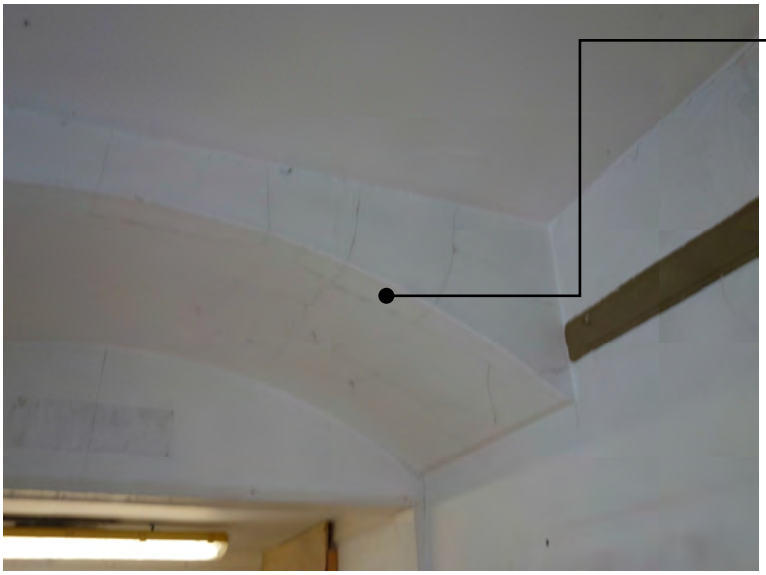
Remove plaster to the wall to determine the damage to the structure within.

4.3 Damage to the plaster from water ingress is apparent.

Remove plaster to determine extent of damage to structure within.

4.4 Damage to the plaster from water ingress is apparent.

Remove plaster to determine extent of damage to structure within.



4.5 Cracking is evident on the underside of the arch.

Remove plaster to determine if cracking extends to the structure above.

4.6 Damage to the plaster below the high-level windows indicating water ingress.

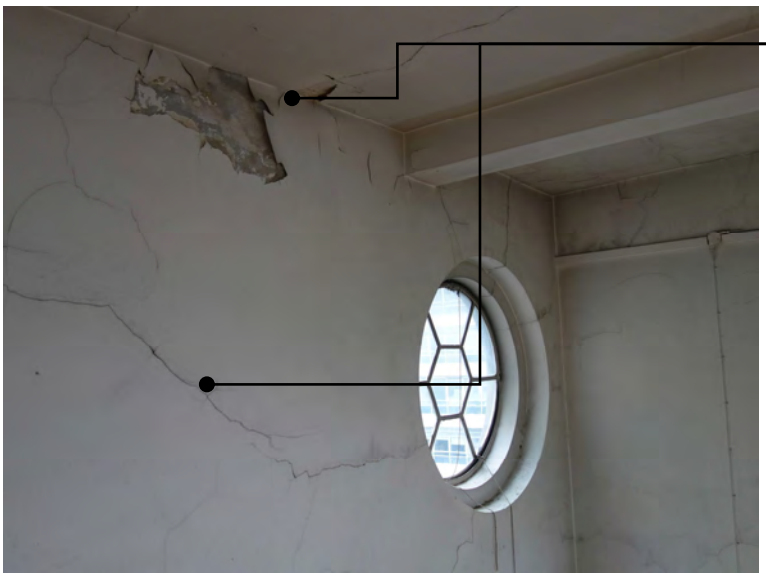
Remove plaster to determine extent of damage to structure within.

4.7 Cracking in the wall internally continues externally.

Remove plaster to expose extent of damage to the structure within.

4.8 Water ingress to around slab and wall apparent.

Remove plaster and concrete cover to the underside of the slab to determine extent of corrosion to joist within.



4.9 Numerous cracks are evident in the walls around the stairwell.

Remove small areas of plaster around cracking to determine extent of cracking to masonry behind.

4.10 Light corrosion can be seen to the steelwork over the top of the stair.

Clean corroded steel and reinstate concrete cover.

4.11 Significant cracking in plaster due to water ingress apparent.

Remove plaster to determine extent of damage to structure within.

4.12 Damage to the plaster below the high-level windows indicating water ingress.

Remove plaster to determine extent of damage to structure within.

4.13 Cracking is evident on the underside of the arch.

Remove plaster to determine if cracking extends to the structure above.

4.14 Heavy water damage apparent to plaster on the wall.

Remove plaster and concrete cover to beam at connection to wall to determine extent of corrosion to steelwork within.

Remove plaster to determine extent of damage to masonry.

Fifth Floor

5.1 Cracking to plaster to dome structure, either side of steelwork.

Remove plaster finishes to determine extent of damage to structure within.

5.2 Cracking apparent in the plaster covering the structure.

Remove plaster finishes to determine extent of damage to structure above.

5.3 Plaster swelling seen in wall indicating water ingress.

Remove plaster in the wall to determine extent of damage to structure behind.

5.4 Large crack to the plaster at the corner of the window.

Remove plaster in the wall to determine extent of damage to structure behind.

5.5 Rust stains can be seen on the ceiling below an assumed steel joist location.

Remove plaster and concrete cover to determine the extent of corrosion to the joist within.

5.6 Cracking can be seen to the bottom of the steel beam running across the roof lights.

Remove plaster and concrete cover to determine the extent of corrosion to the beam within.

5.7 A portion of the clinker concrete slab appears to have been removed.

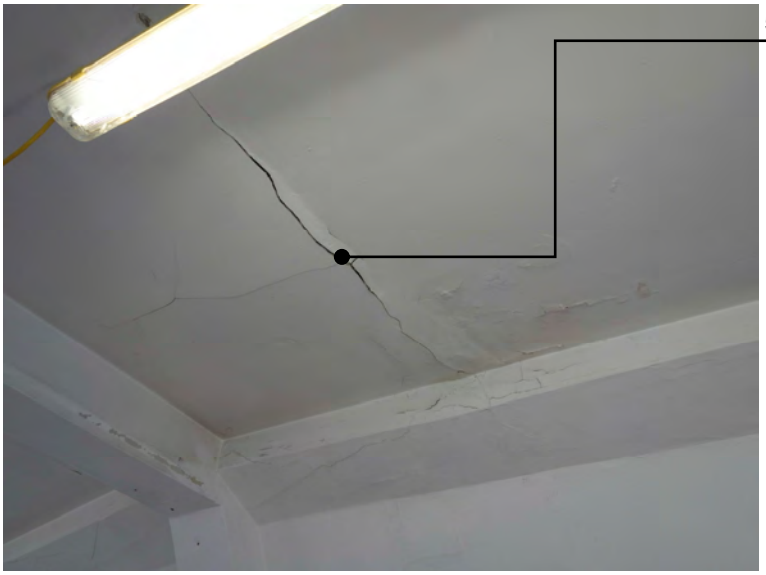
Repair concrete slab according to HTS specification.

5.8 Plaster swelling seen in wall indicating water ingress.

Remove plaster in the wall to determine extent of damage to structure and corrosion to steel behind.

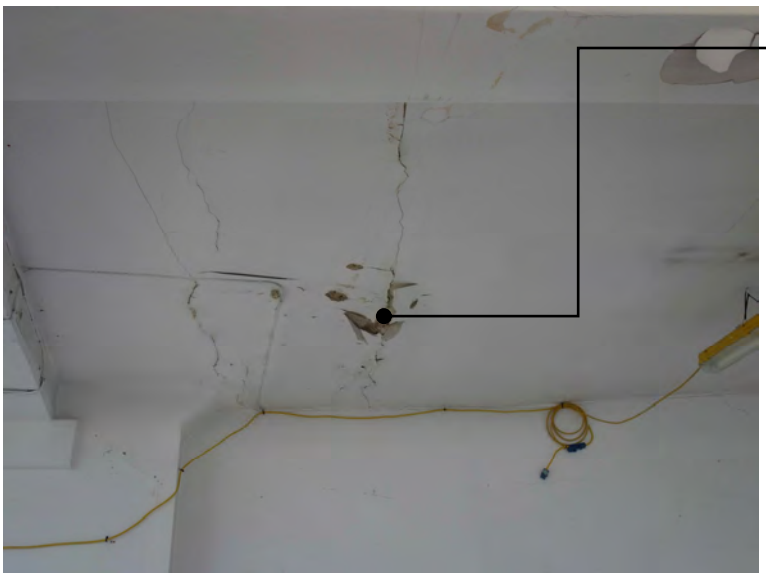
5.9 Water ingress and signs of corrosion apparent on plaster surrounding steel downstand beams.

Remove plaster and concrete cover to determine the extent of corrosion to the beams within.



5.10 A large crack is evident beneath an assumed joist location.

Remove plaster and concrete cover to joist to determine the extent of corrosion within.



5.11 A large crack is evident beneath an assumed joist location.

Remove plaster and concrete cover to joist to determine the extent of corrosion within.

5.12 Cracking can be seen to the bottom of the steel beam running across the roof lights.

Remove plaster and concrete cover to determine the extent of corrosion to the beam within.

5.13 Plaster swelling and damage seen in slab and adjacent beam indicating water ingress.

Remove plaster in the slab and beam to determine extent of damage to structure and corrosion to steel above.

5.14 Cracking along the length of the widow and the adjacent section of wall is evident.

Remove the plaster finish to determine extent of damage to structure within.

5.15 Water damage and staining to the suspended ceiling suggests water ingress through the structure above.

Remove section of damaged suspended ceiling to allow inspection of the structure above.

5.16 Swelling and damage to the plaster at the corner of the window suggests water ingress.

Remove plaster to determine extent of damage to structure behind.

5.17 Water ingress and damage to plaster apparent in mansard and roof slab.

Remove plaster and concrete cover to one joist in the mansard and one in the slab to determine the extent of corrosion to the steelwork within.

5.18 Water ingress beneath the window is apparent.

Remove plaster to determine extent of damage to structure within.

5.19 An area of clinker concrete has been removed exposing the steelwork within.

Reinstate concrete cover according to HTS specification.

5.20 Heavy corrosion and delamination apparent on steelwork.

Remove plaster and concrete encasement to entire beam and mansard column to determine extent of steel repair required.

Roof

R.1 Disintegration of plaster to the ceiling of the roof entrance, suggesting water damage to the roof.

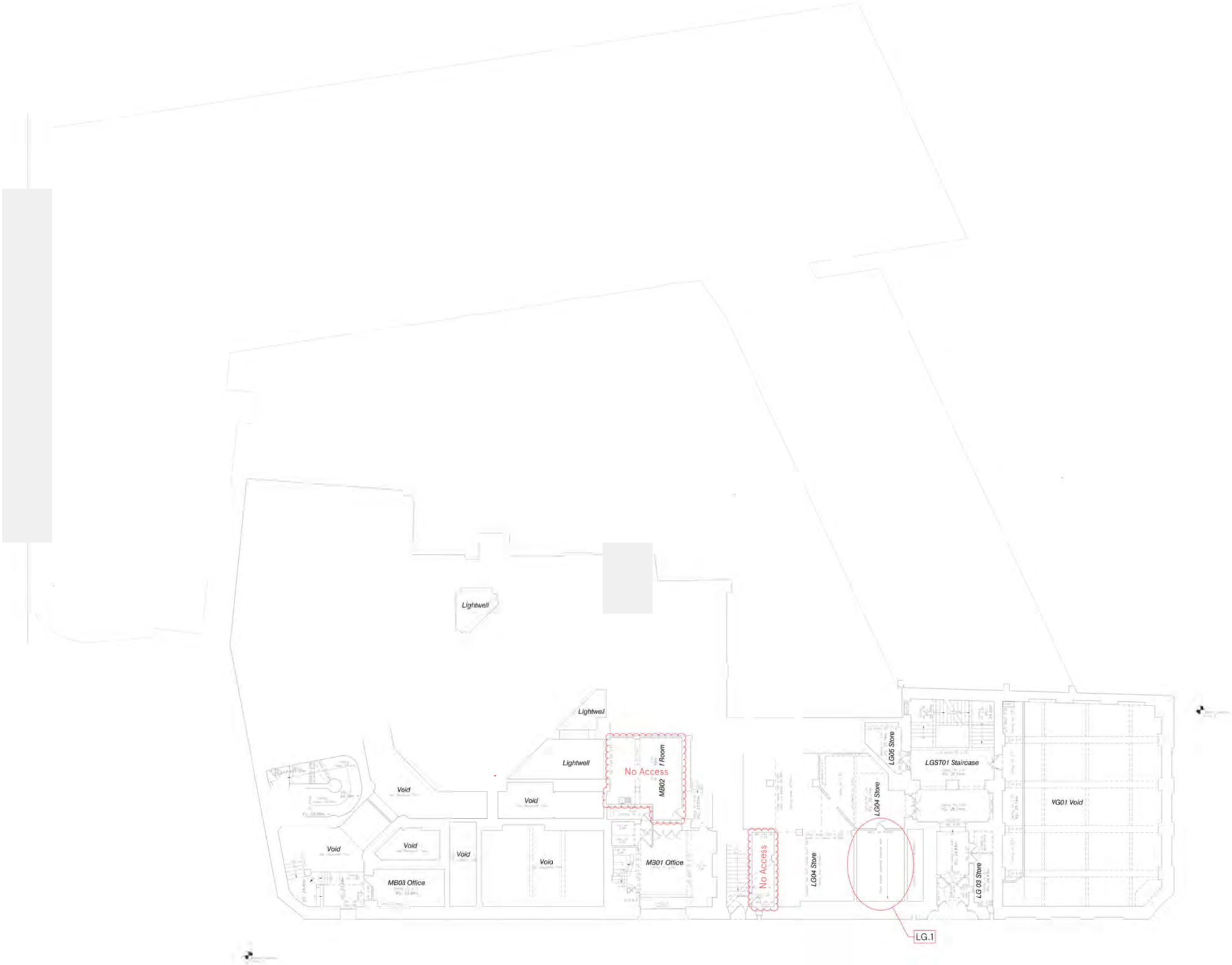
Remove plaster finishes to determine extent of water ingress and damage to structure within.

R.2 The chimney support steelwork is heavily corroded.

Steel should be replaced as part of the roof repair works.

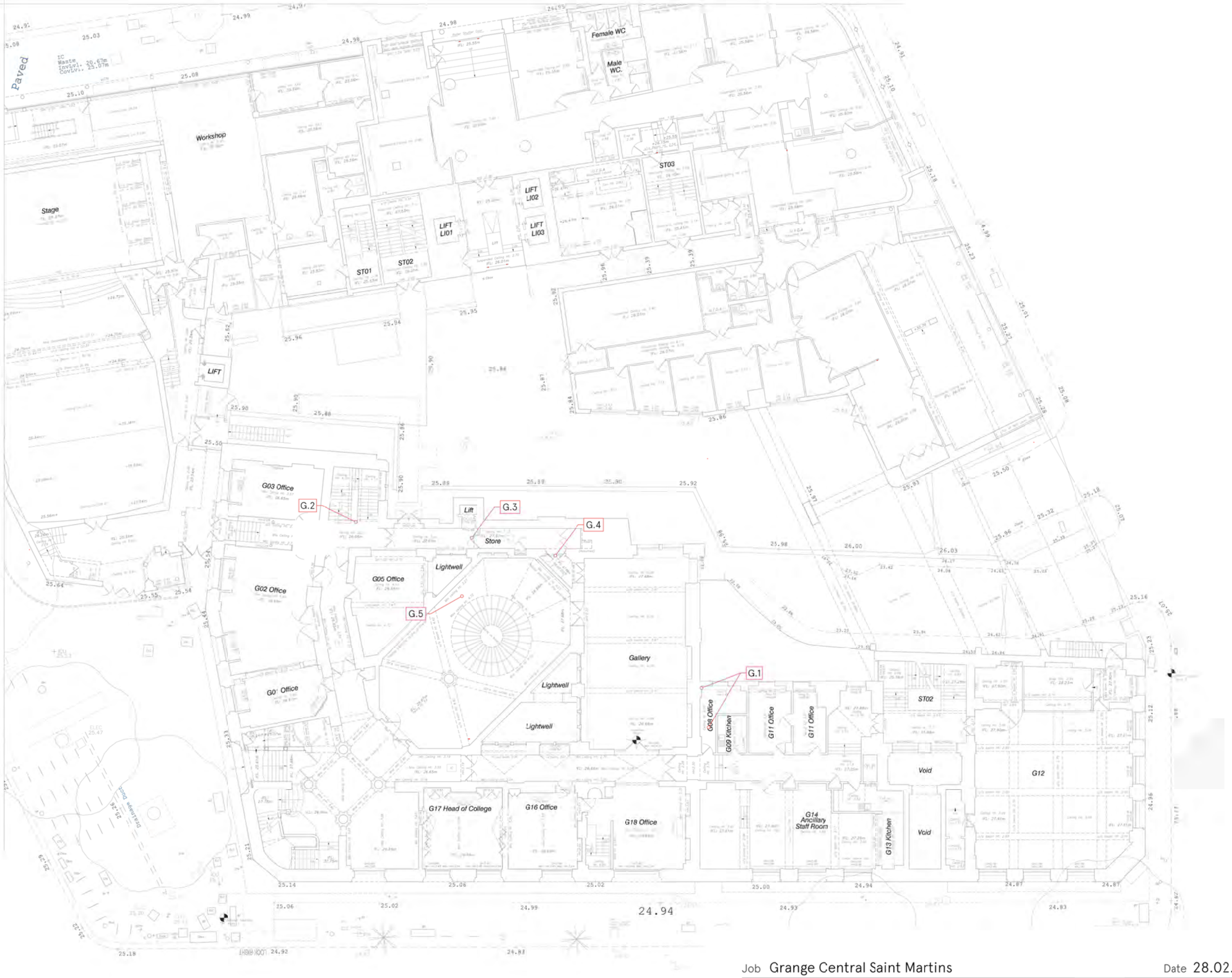
Job	Grange Central Saint Martins		Date 28.02.20
Title	Condition Survey - Location Plan - Basement		Eng. SL
Job No.	2300	Sheet SK044	Rev. -

HEYNE TILLETT STEEL



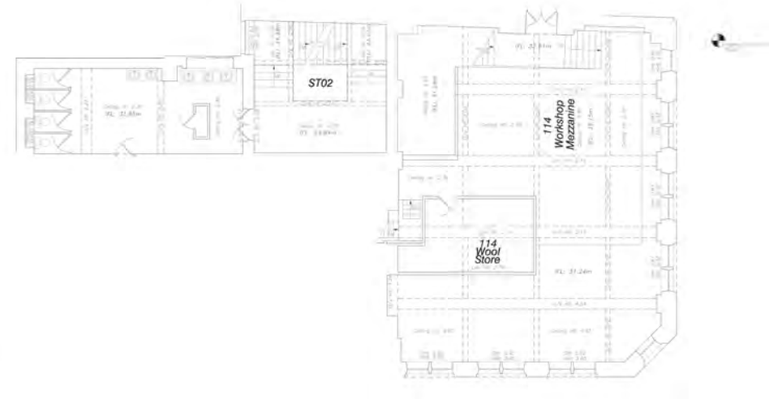
Job	Grange Central Saint Martins		Date 28.02.20
Title	Condition Survey - Location Plan - Lower Ground		Eng. SL
Job No.	2300	Sheet SK045	Rev. -

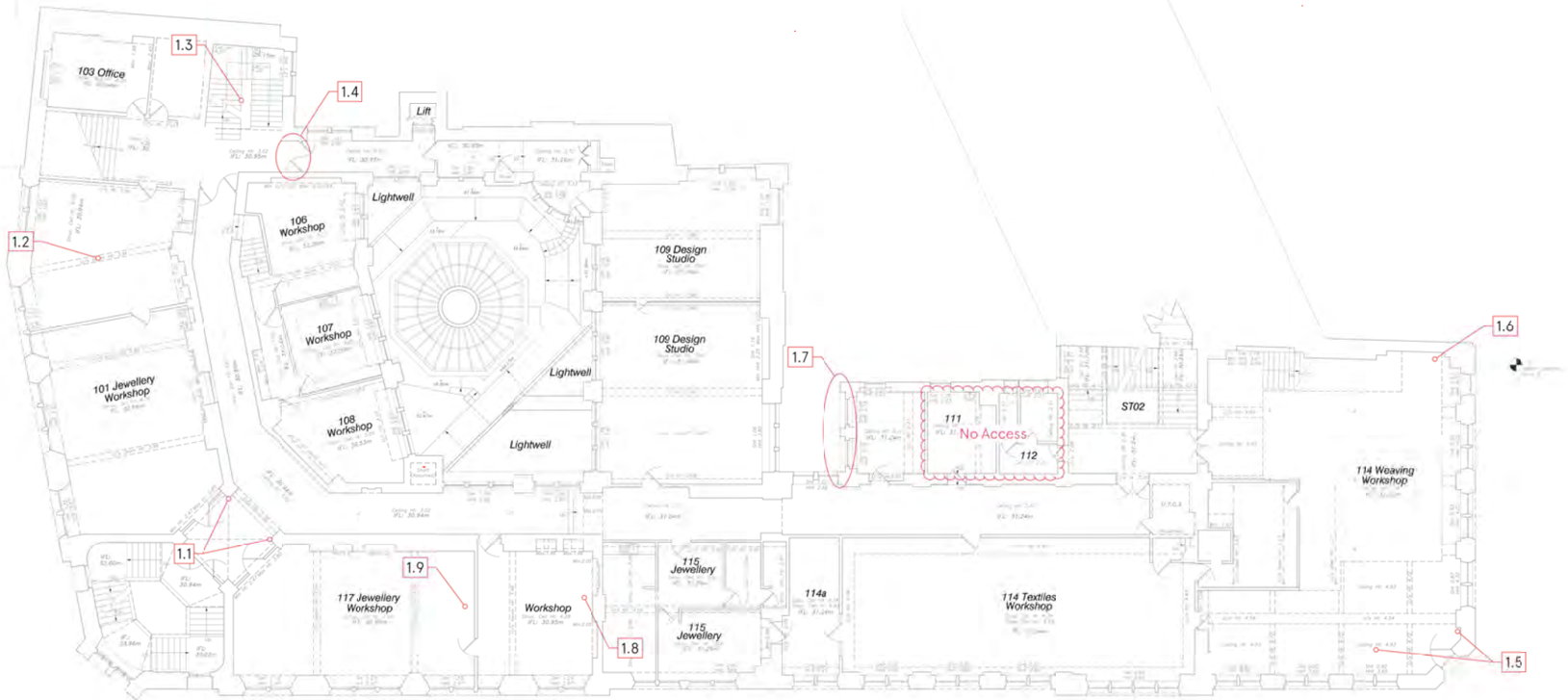
HEYNE TILLETT STEEL



Job	Grange Central Saint Martins	Date	28.02.20
Title	Condition Survey - Location Plan - Ground	Eng.	SL
Job No.	2300	Sheet SK046	Rev. -

HEYNE TILLETT STEEL



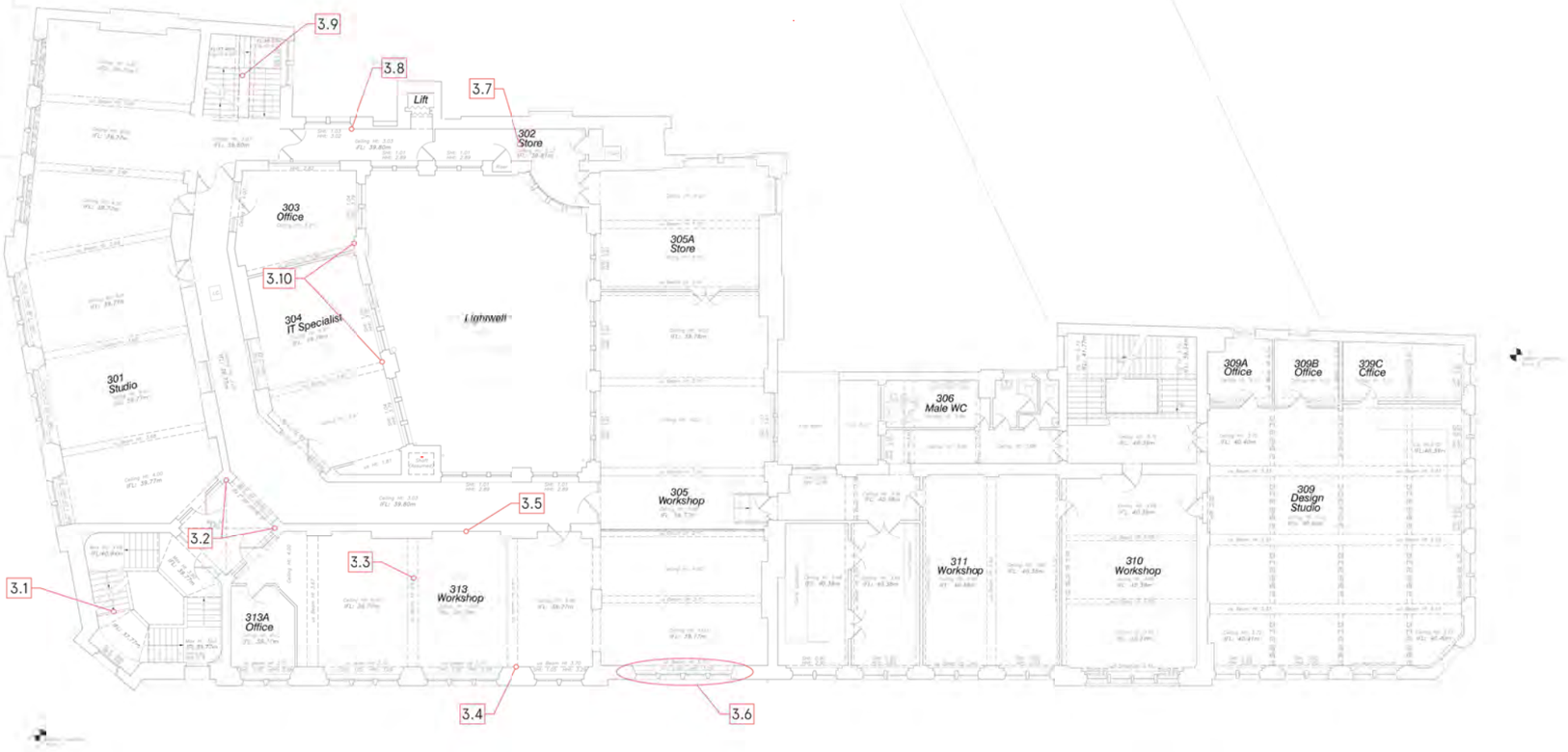


Job	Grange Central Saint Martins		Date 28.02.20
Title	Condition Survey - Location Plan - First		Eng. SL
Job No.	2300	Sheet SK047	Rev. -

HEYNE TILLETT STEEL

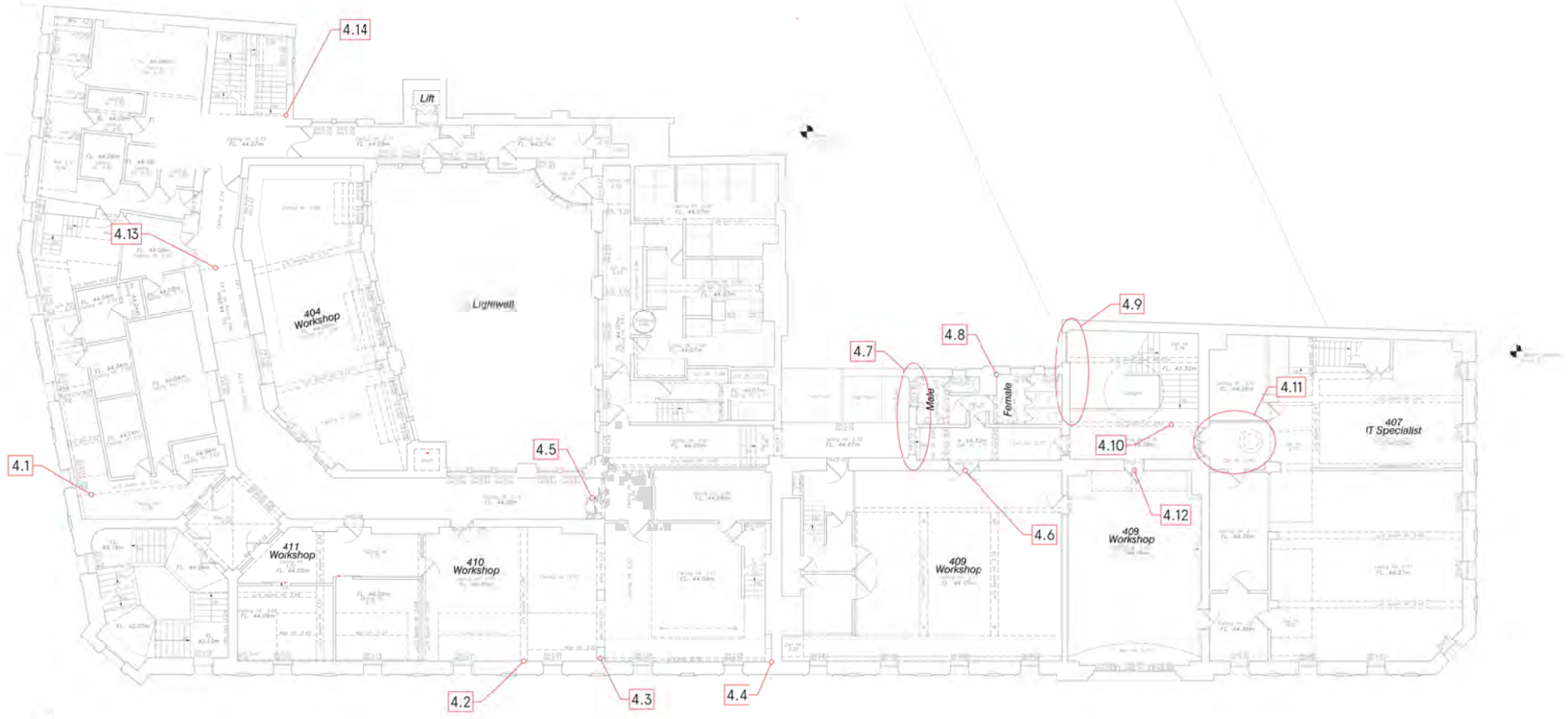
Job	Grange Central Saint Martins		Date 28.02.20
Title	Condition Survey - Location Plan - Second		Eng. SL
Job No.	2300	Sheet SK048	Rev. -

HEYNE TILLETT STEEL



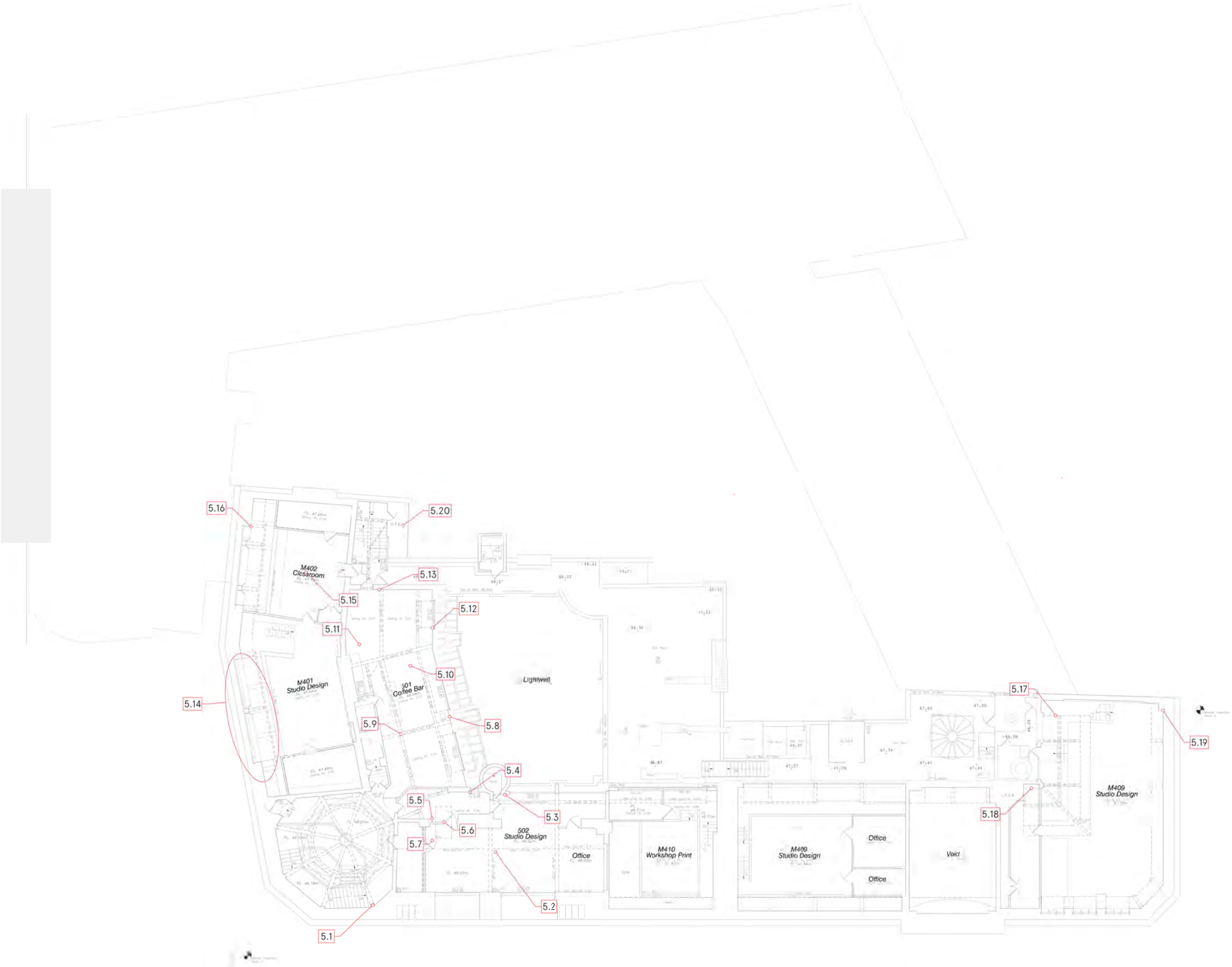
Job	Grange Central Saint Martins		Date 28.02.20
Title	Condition Survey - Location Plan - Third		Eng. SL
Job No.	2300	Sheet SK049	Rev. -

HEYNE TILLETT STEEL



Job	Grange Central Saint Martins		Date 28.02.20
Title	Condition Survey - Location Plan - Fourth		Eng. SL
Job No.	2300	Sheet SK050	Rev. -

HEYNE TILLETT STEEL



Job	Grange Central Saint Martins		Date 28.02.20
Title	Condition Survey - Location Plan - Fifth		Eng. SL
Job No.	2300	Sheet SK051	Rev. -

HEYNE TILLETT STEEL

Job	Grange Central Saint Martins		Date 28.02.20
Title	Condition Survey - Location Plan - Roof		Eng. SL
Job No.	2300	Sheet SK052	Rev. -

HEYNE TILLETT STEEL