

### 3. Existing Structure

Norfolk house was originally constructed in 1904 and extends from basement to Level 4. The structure is load bearing masonry with concrete filler joisted floor structure, approximately 190mm deep.

The upper floors have previously been adapted to remove the internal load bearing masonry walls which have been replaced by steel framed columns and beams from level 2 to roof. The steel beams create a downstand approximately 600mm from the slab soffit with a void in some areas between the top of the beams and the soffit.

Archive drawings dated 1983 indicate that there was previously an area of slab infilled adjacent to the core and areas of roof rebuilt to accommodate plant.

#### 3.1 Condition of existing structure

All buildings have now been stripped out and the visible structure appears to be in reasonably good condition.

A significant amount of the original ceilings and cornices have been removed and those that have been retained have suffered damage and appear to have been replaced and patch repaired on each floor.

- 1 Load bearing façade
- 2 Load bearing masonry stair core
- 3 Steel frame supporting floors level 02 – roof
- 4 Existing mansard roof of timber construction
- 5 Existing slabs 190mm deep filler joists
- 6 New steel frame and slab infill constructed in 1983
- 7 New steel and timber roof extension
- 8 Existing pavement vaults

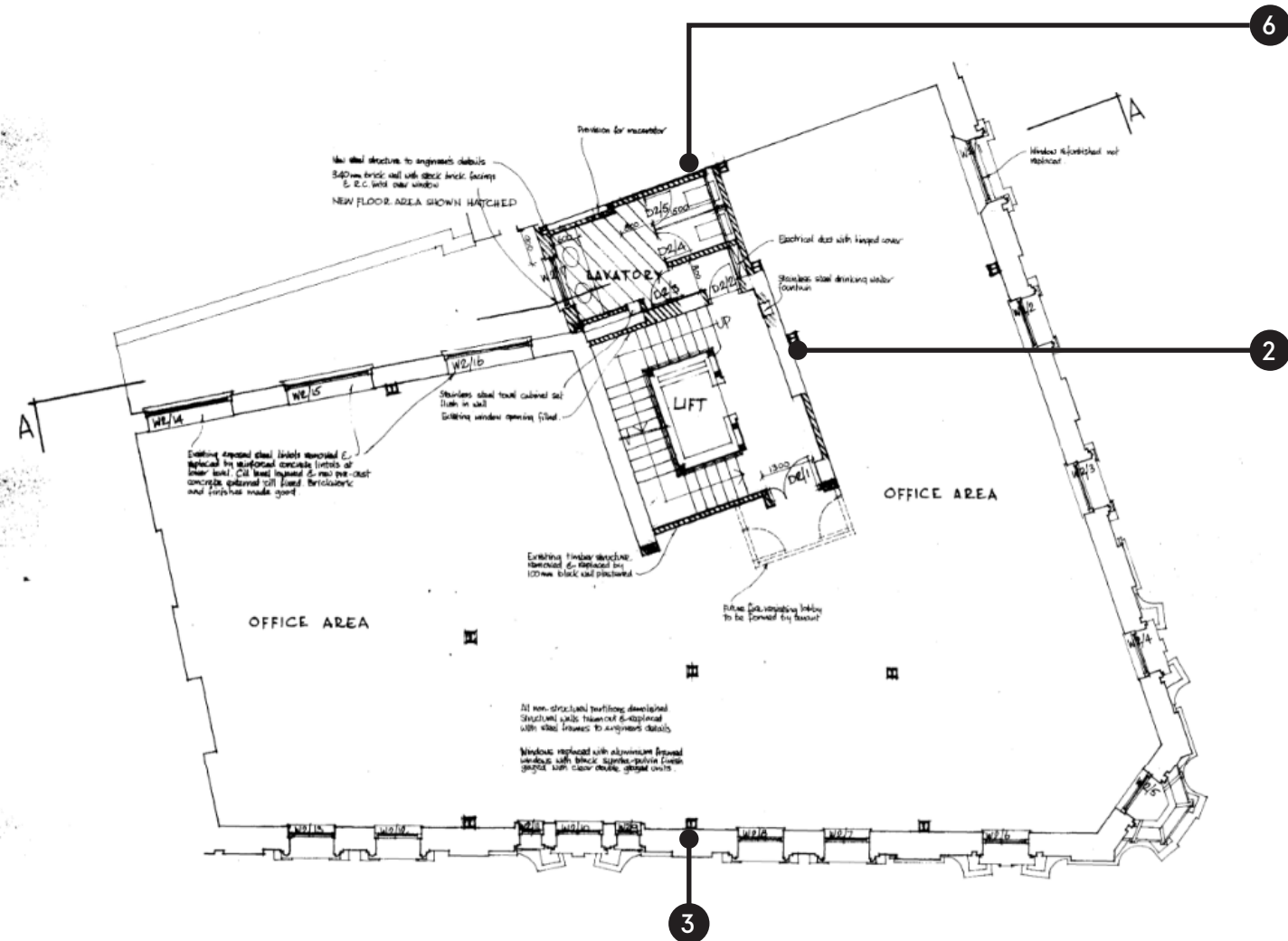


IMAGE 12 - ARCHIVE PLAN DRAWING, TYPICAL UPPER FLOOR, 1983

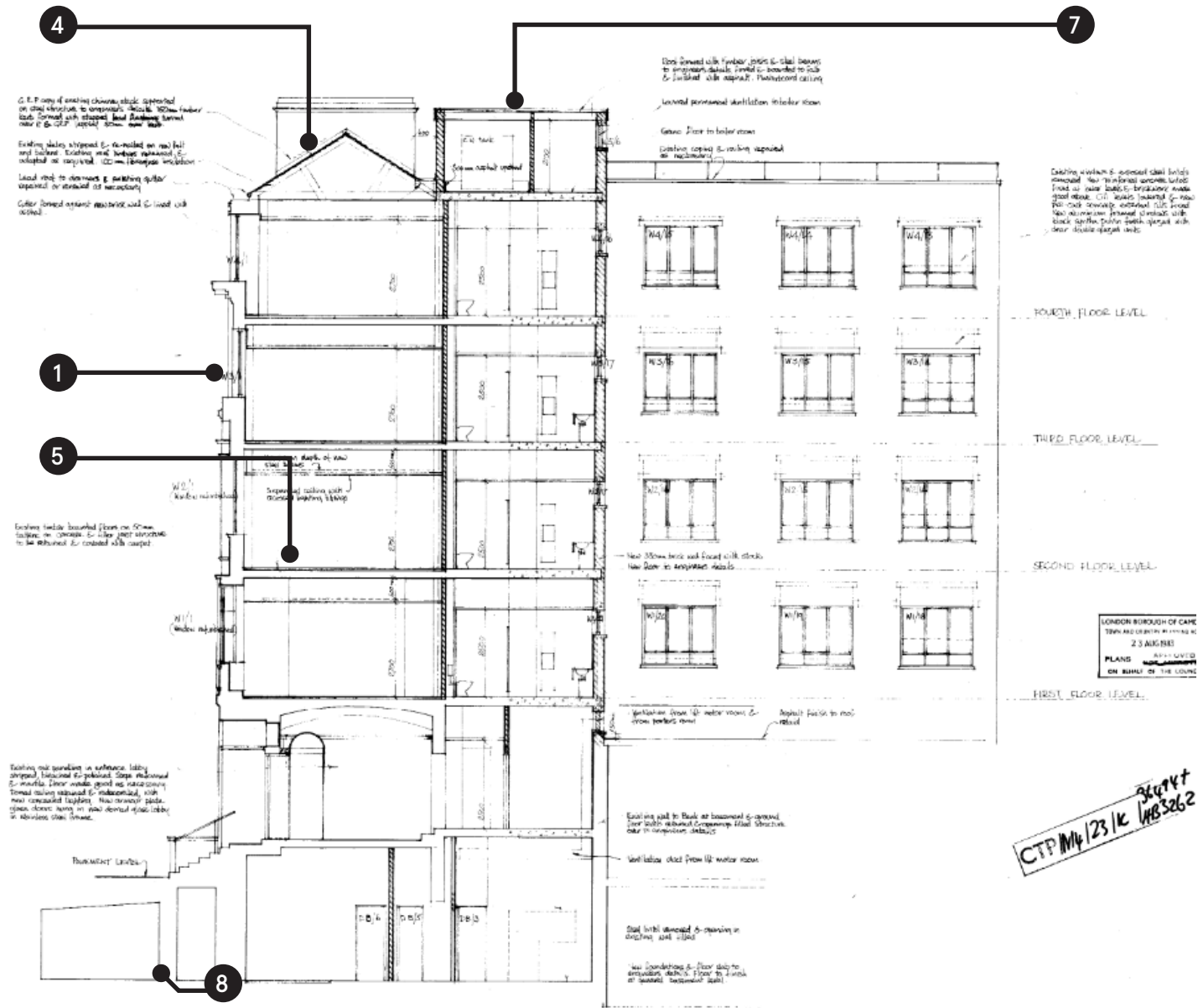


IMAGE 13 - ARCHIVE SECTION THROUGH EXISTING STRUCTURE, 1983

## 4. Investigations

A number of investigations have been proposed in order to confirm the existing condition and framing of the structural and to inform the proposed design. The investigations include:

Structural opening up works to confirm size, framing and condition of structural elements.

CCTV survey to assess condition of existing below ground drainage

Please refer to the appendices for the HTS Structural Investigations schedule.

## 5. Site Access

The site is located in the Holborn area of London, close to the Holborn underground station.

The building fronts on to Southampton Place and Southampton Row. Southampton Row is heavily trafficked during working hours but are wide enough to be easily accessed by most sizes of construction vehicle.

The surrounding area is a mixture of commercial and residential properties and as such restrictions on working hours are likely to be considered.

The maximum sizes of structural elements and movement of construction materials through the buildings will need to be considered in detail by the contractor due to the limited size of the existing lift and stairwell.

### Key

- 1 At high level remove ceiling and all finishes on both sides of wall along length of 2m by at least 500mm width. Expose underside of steel beam and slab structure
- 2 At low level remove floor finish and any architectural floor build up over area of approximately 2m x 500mm either side of the wall. Expose top face of slab and connection into masonry wall.
- 3 At high level remove ceiling and all finishes over area of 2m x 2m to expose underside of structural slab. Drill through slab to determine depth.
- 4 At high level remove finishes to wall and underside of stairs along length of shaft to expose lift shaft framing and support of stair.

### Structural Investigation notes

All opening up works to be inspected by engineer prior to reinstating finishes



IMAGE 14 - LEVEL 1 INVESTIGATIONS PLAN

## 6. Proposed Structure

All works will be carried out sympathetically to the historic fabric of the building and in line with any guidance or requirements set out by the local Conservation Officer and English Heritage. The existing internal and external fabric shall be suitably protected throughout the entire duration of the works and the contractor undertaking the works shall have relevant listed building experience.

Please refer to appended drawings for details of the proposed works which are summarised in the sections below.

- 1 Concrete filler joist floor
- 2 203 UC spreader beams
- 3 Load bearing wall at Ground
- 4 150mm deep fabricated sections
- 5 New steel box frames at Level 1
- 6 Existing timber stairs retained
- 7 Existing timber lift shaft retained. Lit to be refurbished to specialist specification
- 8 Allow for propping from L01-Roof

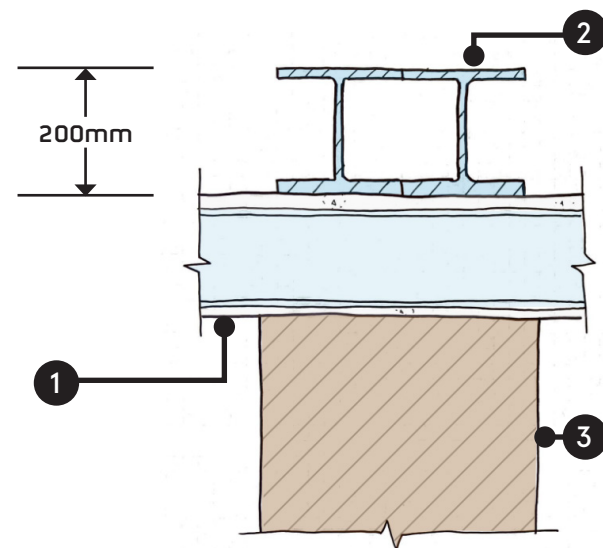


IMAGE 15 - SECTION THROUGH PROPOSED SPREADER BEAM OPTION 1

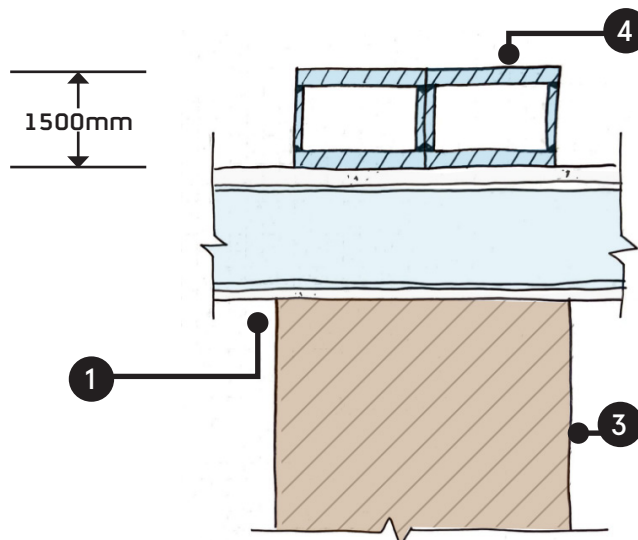


IMAGE 16 - SECTIONS THROUGH PROPOSED SPREADER BEAM OPTION 2

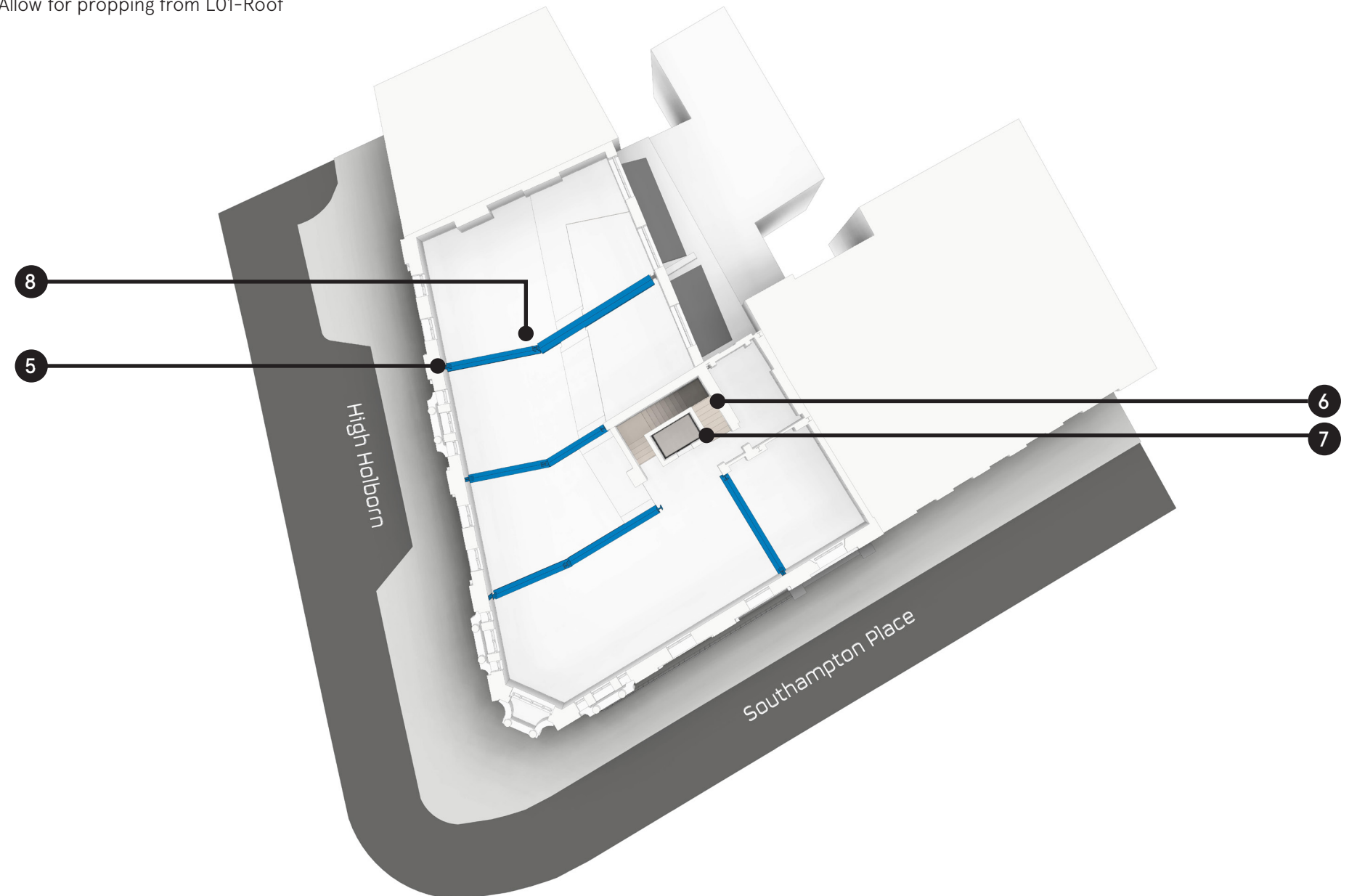


IMAGE 17 - PROPOSED LEVEL 1 STRUCTURAL PLAN



### 6.1 Basement level:

- + New below ground drainage runs to serve the showers and associated localised slab demolition and reinstatement

### 6.2 Ground Floor:

- + No structural works

### 6.3 First Floor:

- + Existing load bearing masonry walls on office floor plate to be demolished and replaced with steel box frame supported on masonry walls below

### 6.4 Second Floor to Fourth Floor:

- + No structural works

### 6.5 Roof:

- + New MEP plant to be provided to replace existing – to be supported on existing plant deck

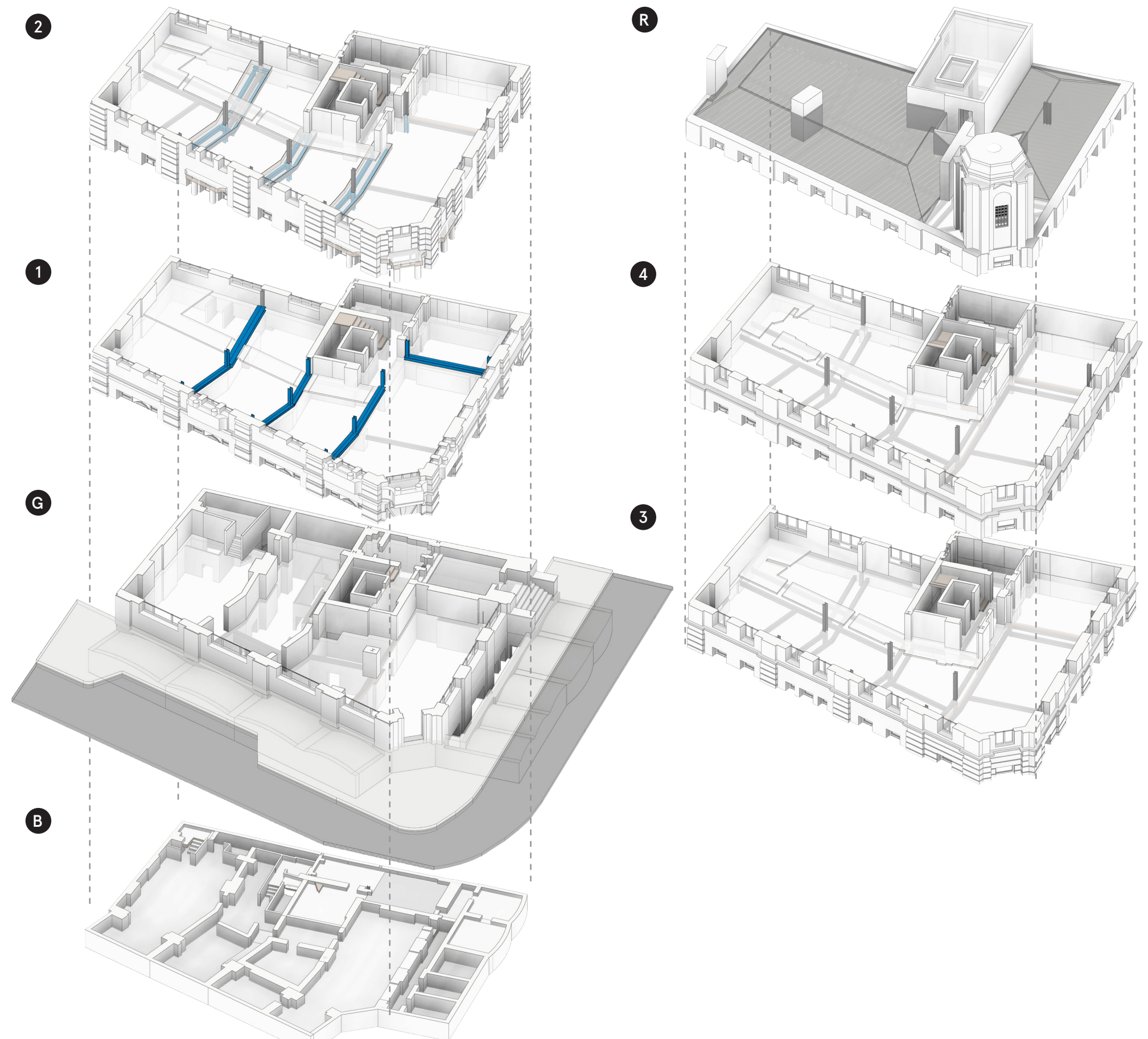


IMAGE 18 - 3D VIEW OF PROPOSED FLOORS

## 6.6 Fire

The existing structural soffits and steelwork will require protection adequate for a 60-minute fire resistance period. The existing soffits are to be fire boarded to provide protection and the existing steelwork is to be intumescent painted.

All new steelwork is to be intumescent painted or encased to provide 60 minutes. In areas where the client would like to expose steelwork the structure will require intumescent paint to provide the resistance.

## 6.7 Disproportionate collapse

The existing buildings are classified as consequence class 2B in accordance with Approved Document A of the Building Regulations. The alterations to the existing buildings are not material changes as the building is not becoming more unsatisfactory in relation to the requirements.

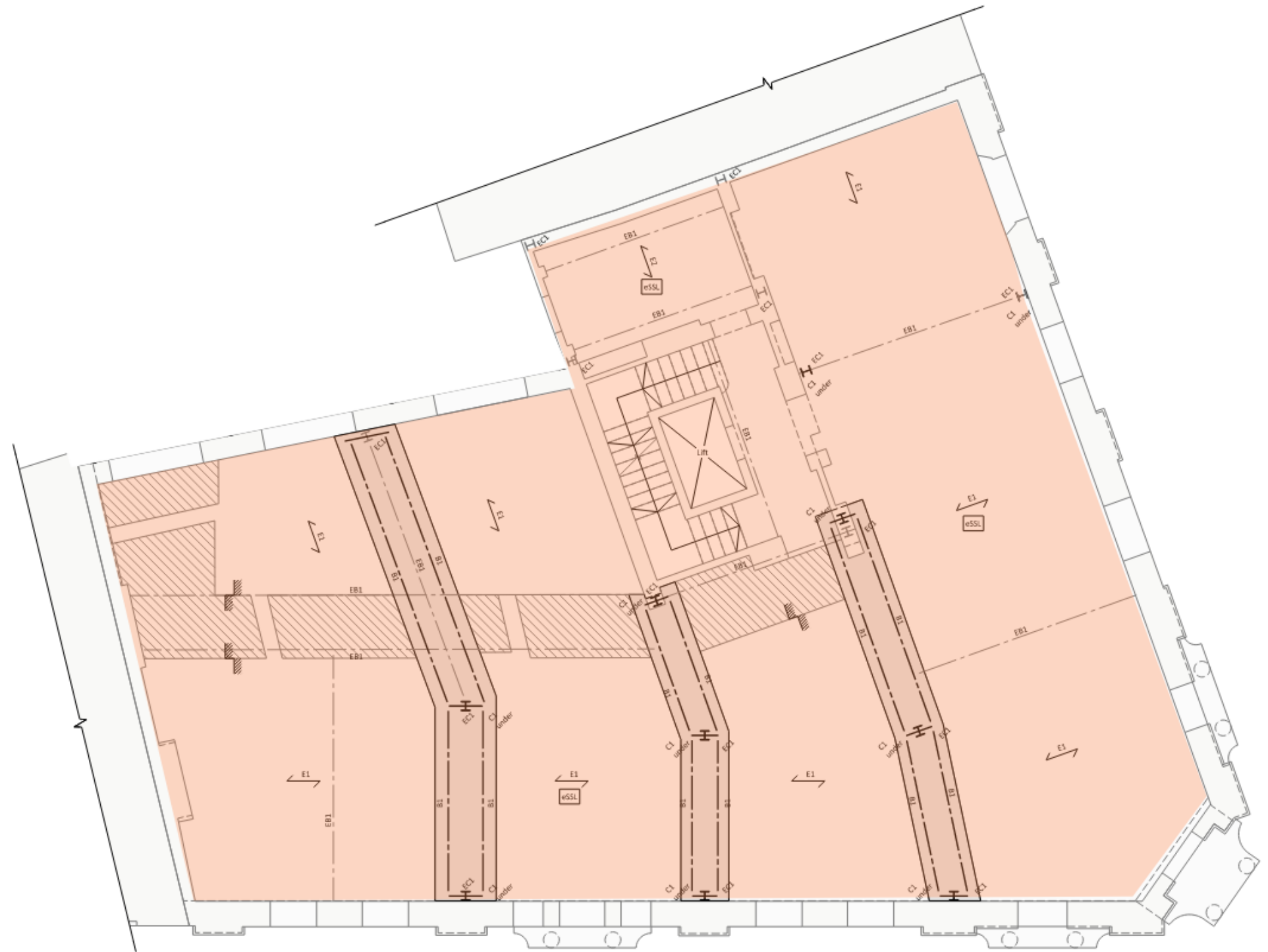
All new structural elements will be designed with horizontal and vertical ties as required by approved document A. Steelwork connections will be designed for the appropriate tying forces in all directions.

## 6.8 Repairs to existing structure

Localised repairs will likely be required to the existing structure due to areas of damaged soffits and loose brickwork. All repair details shall be agreed with the conservation officer and/or English Heritage as appropriate.

## 6.9 Listed Building Consent

All works will be subject to listed building consent and approval.



**IMAGE 19 - LEVEL 1 INDICATIVE REMEDIALS PLAN**

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|---|---|
| <p><span style="display: inline-block; width: 15px; height: 15px; background-color: orange; margin-right: 5px;"></span> Contractor to allow for remedials to soffit including reinstating cover to filler joists and any areas where there has been loss of full depth of clinker concrete this shall also be reinstated</p> <p><span style="display: inline-block; width: 15px; height: 15px; background-color: lightblue; margin-right: 5px;"></span> Contractor to allow for reinstatement of concrete up to nearest adjacent filler joist around wall demolition or new opening</p> | <p><span style="display: inline-block; width: 15px; height: 15px; background-color: grey; margin-right: 5px;"></span> Damp areas of slab to be investigated to confirm filler joist condition. Allow for removing clinker locally to expose and brush back corrosion of filler joists. Remedial extent TBC. Replacement of filler joists in damp areas may be required if condition unsatisfactory.</p> <p><span style="display: inline-block; width: 15px; height: 15px; background-color: pink; margin-right: 5px;"></span> Contractor to allow for repairing lath and plaster ceiling locally where damaged or defective</p> |
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## 7. Temporary Works and Buildability

Extensive temporary works will be required to prop the structure above level 1 to allow the installation of the steel frames.

Temporary works design and method statements shall be reviewed by HTS to ensure any temporary works installed shall suitably protect the existing structure.

## 8. Health and Safety

In line with CDM Requirements all potential risks relating to the structural works, outside of those which should normally be identified by a competent contractor, will be highlighted on our drawings. A list of these risks will also be circulated to the design team and updated as new ones are identified.

- 1 Existing wall at Level 01
- 2 Install stools at low level
- 3 Install permanent steel spreader beam
- 4 Install propping to level 02 structure
- 5 Demolish wall at level 01
- 6 Install proposed steel columns and high level beam

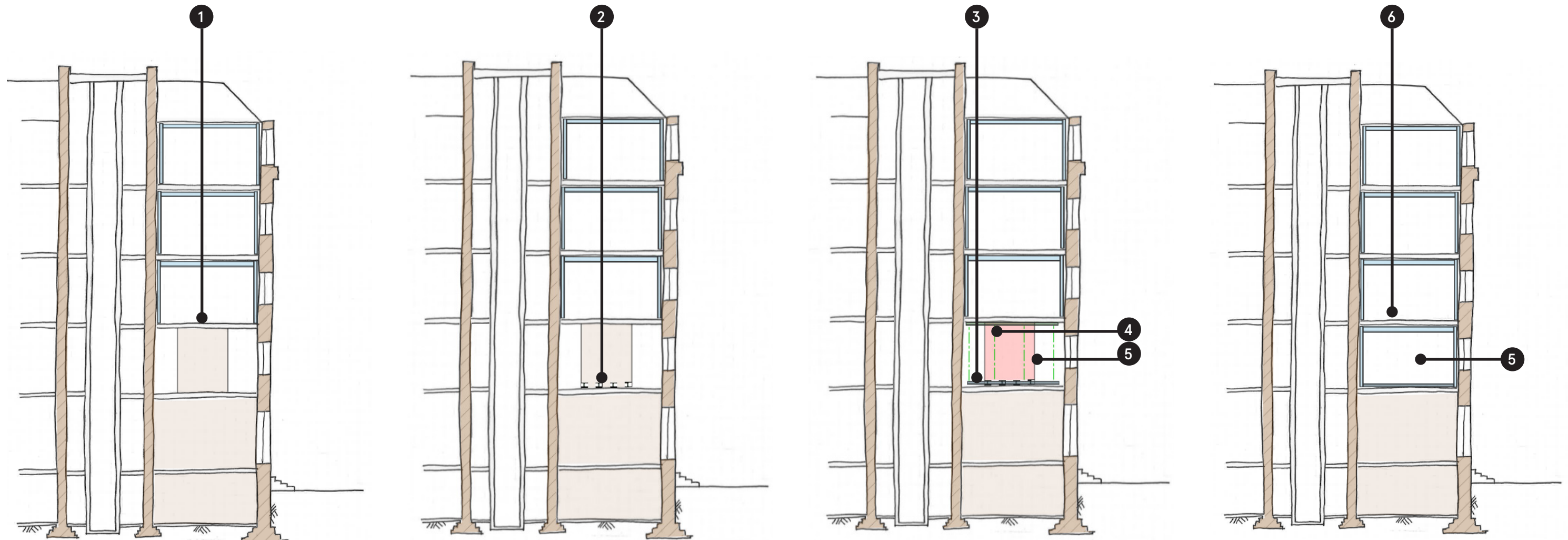


IMAGE 20 - INDICATIVE CONSTRUCTION SEQUENCE