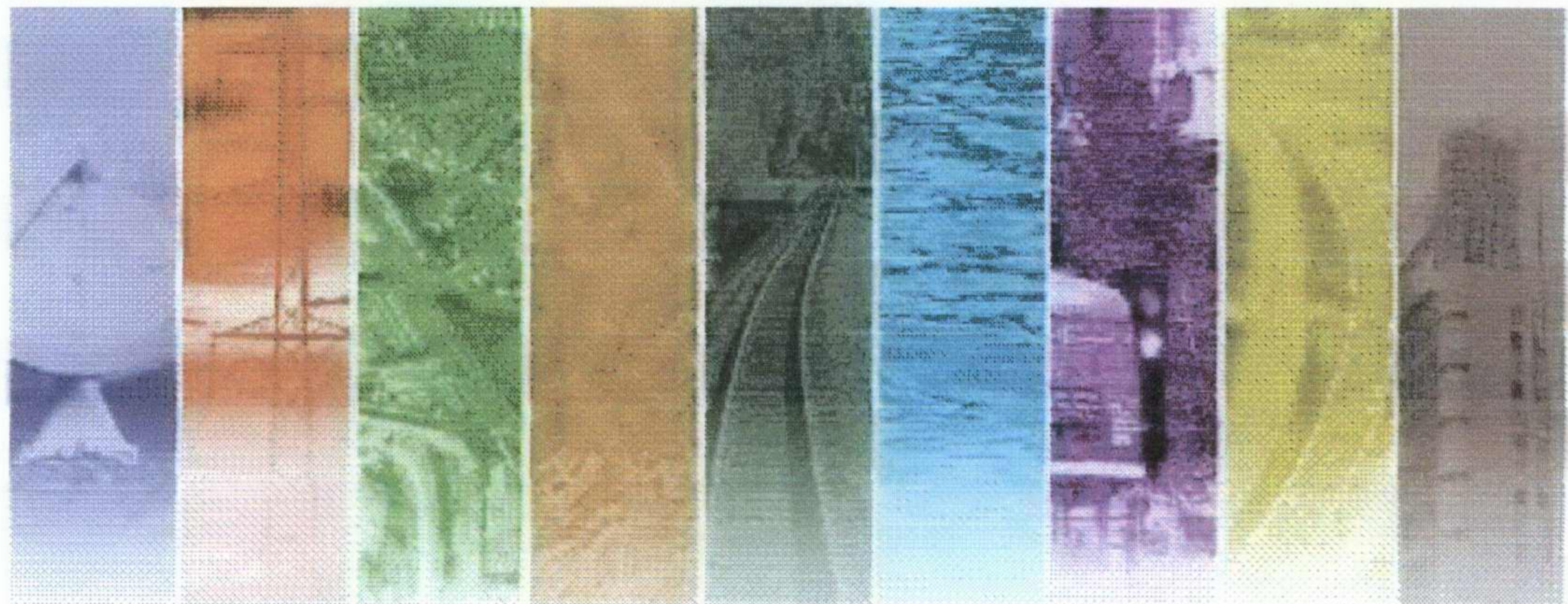


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**18 CHURCH ROW
BASEMENT BEAM REPORT
K84415-VAA-R1-0002-A**

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REVISION RECORD Report Ref:					
Rev	Description	Date	Originator	Checked	Approved
A	Report on Basement Beam at 18 Church Row.	18.06.07	R. Harvey	L. Chapman	D. Sivyier

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Prepared for :
Bruce Irwin
40 Holland Rise
Clapham Road
London
SW9 0HS

Prepared by :
Pell Frischmann Consulting Engineers
5 Manchester Square
London
W1A 1AU
Tel: +44 207 4863661
Email: dsivyier@pellfrischmann.com

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1. INTRODUCTION

The residence 18 Church Row comprises 5 storeys of Georgian build, with a Victorian extension to the rear at lower ground to 1st floor level. These additions include a bay window at ground floor level, which is supported by posts at lower ground floor level. A steel beam has been installed more recently at ground floor level, attempting to add support to the bay, which slopes away from the building. The other addition is an outside toilet at the rear of the property within a brick vault, above which the ground floor level has been extended to meet the external stair, and continues up to first floor level as an annex.

At basement level two brick vaults are located beneath the property entrance and pavement/road to the front. It is proposed that one of the vaults be used as a bathroom (by lowering the floor) and the other remains as storage.

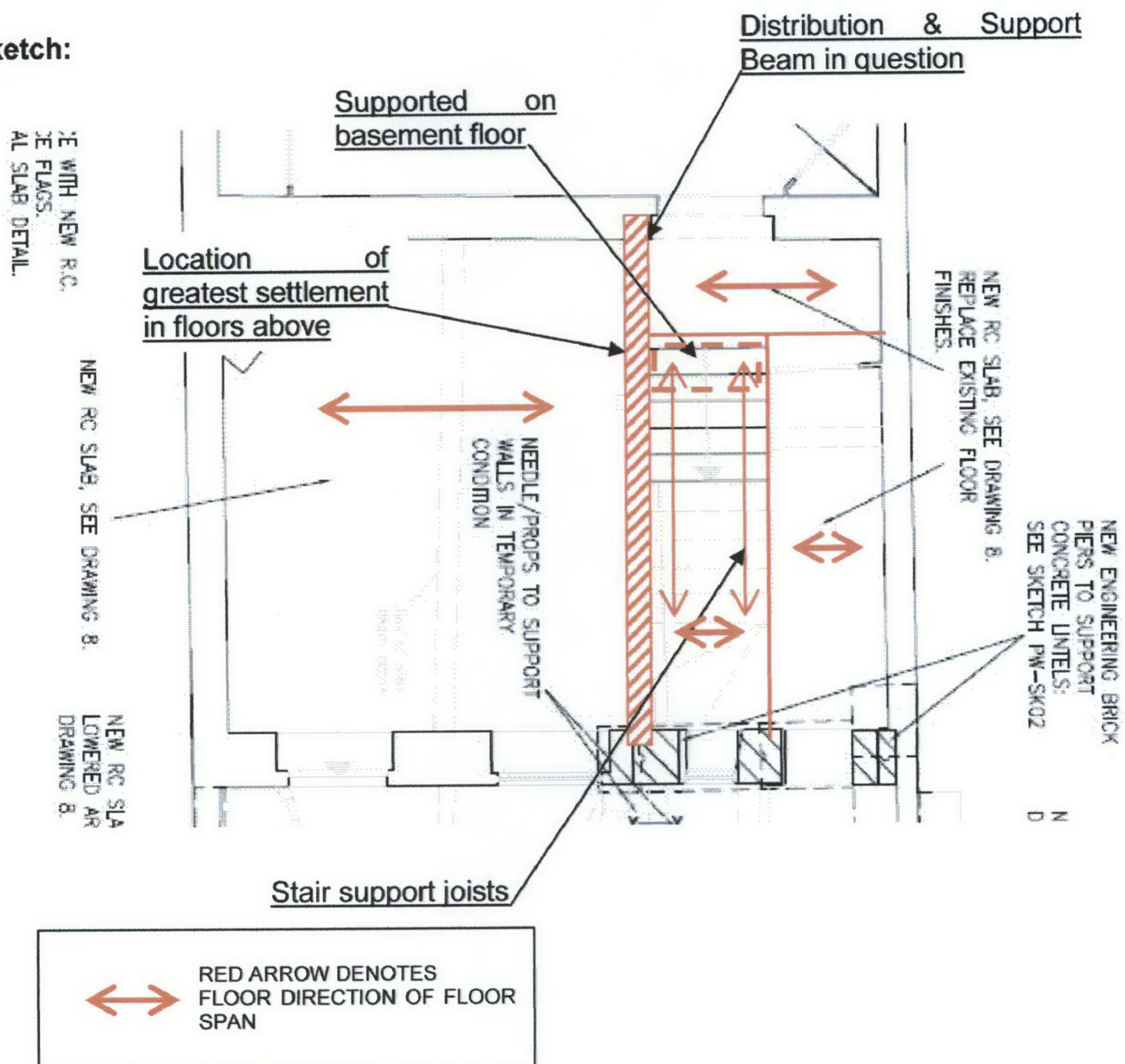
2. EXISTING BEAM STRUCTURE

Overview:

The beam denoted with red hatching below spans between the two masonry walls and provides partial support for the ground floor joists; it also provides some and distributes the remaining support for the walls and floors above, see sketch 1.

The below wall in the basement is carries the loads not supported by the beam. The staircase is supported off of this wall at high level, see photo 1.

Sketch:



Sketch 1: Structural loading diagram

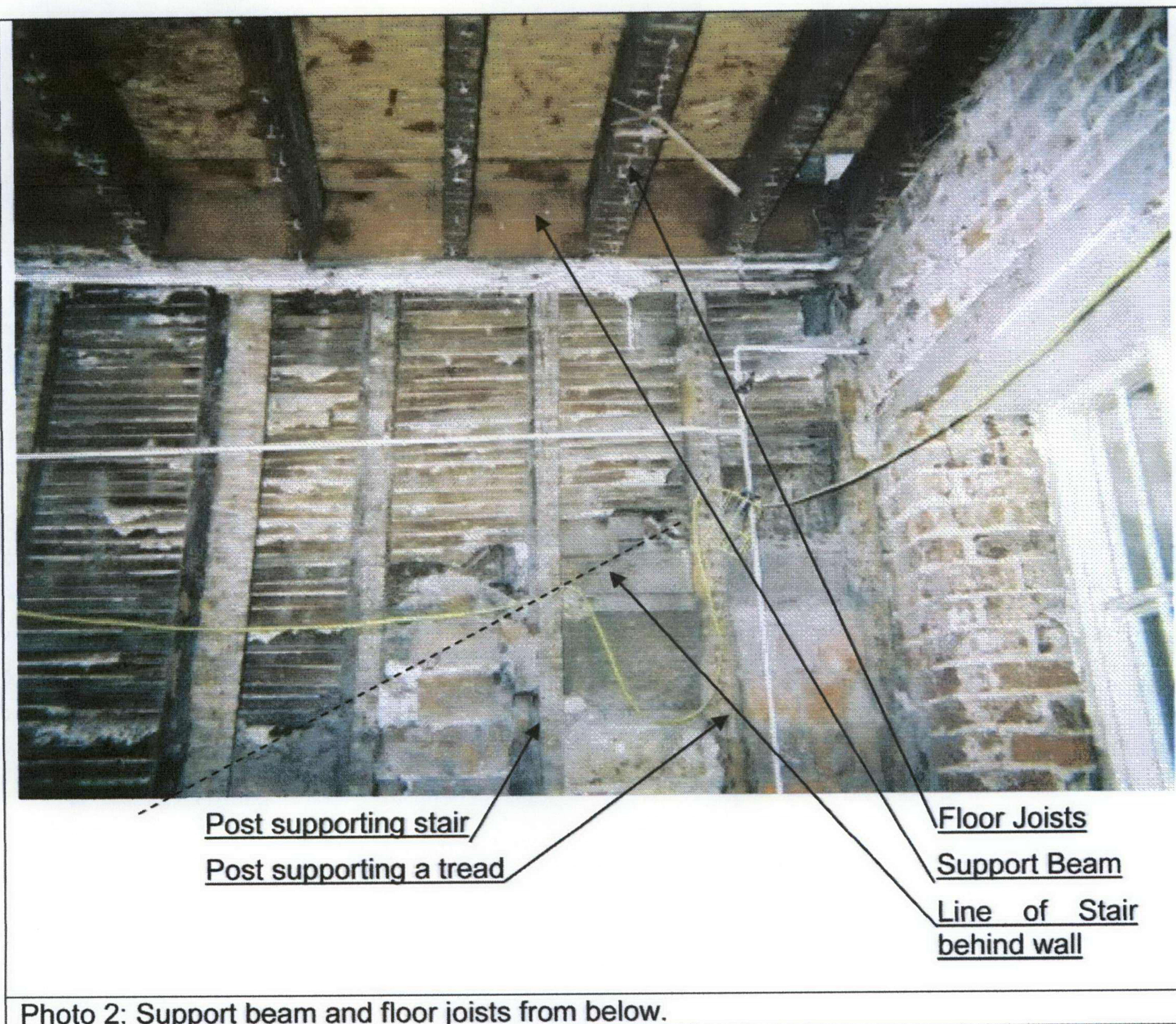


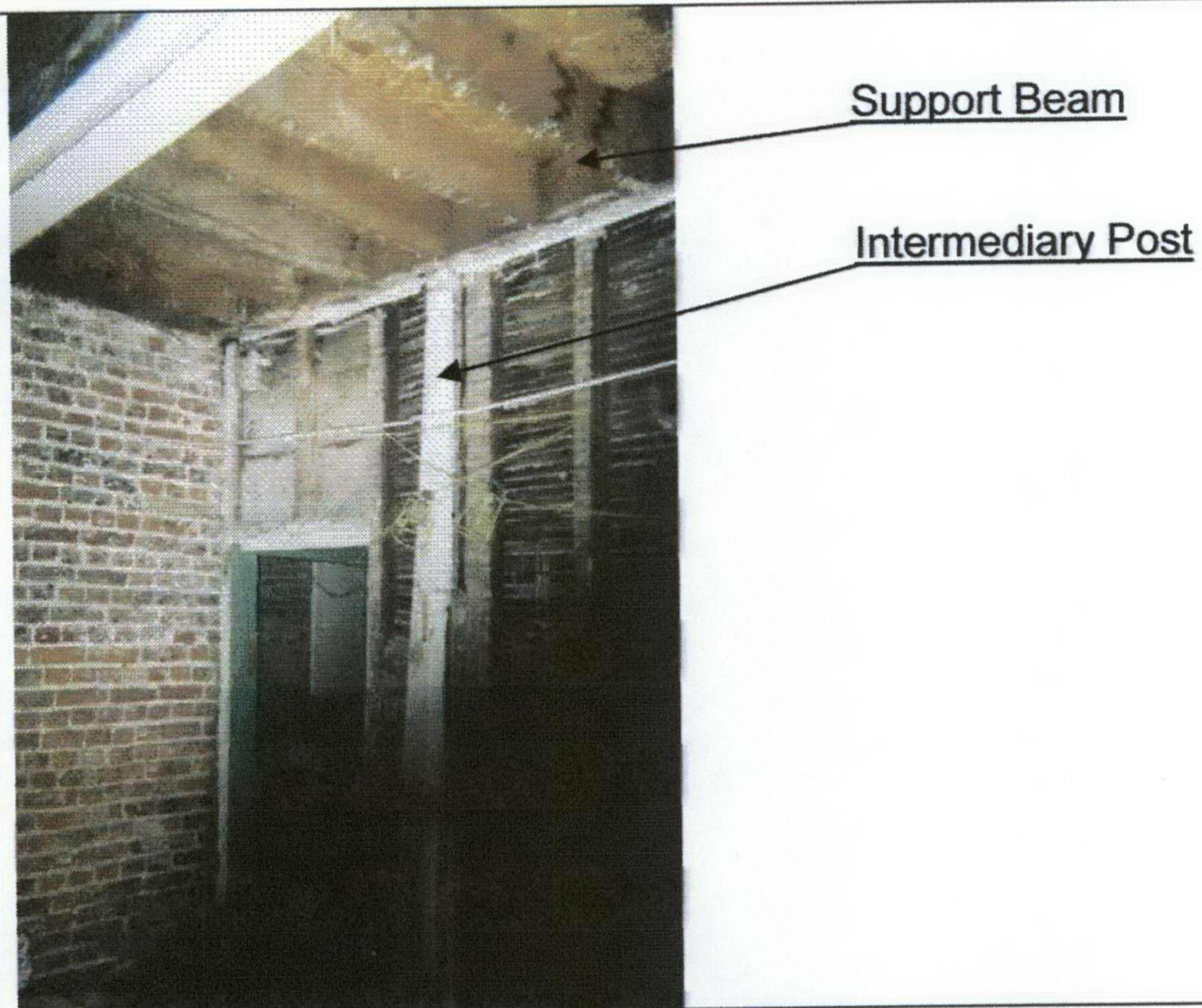
Photo 1: Stair support from wall

Initial Findings of Structural Condition:

Following the removal of the wall and ceiling surfacing during renovation works the primary support beam was exposed, see photos 2 - 4. The newer timber intermediary post shown in photo 3, is positioned to provide extra support to this primary beam. It is believed that this post was not part of the original design and is a later addition to the structure to provide a temporary support due to the deterioration of the Support Beam.

The beam has excessive deflection caused by it attracting too much load as the wall below is deteriorating. This is exacerbated through the structure on the higher floors which are suffering increased levels of settlement to location of this post.





Support Beam

Intermediary Post

Photo 3: Support beam being supported by intermediate post.



Photo 4: Close up of support beam and post.

3. STRUCTURAL SURVEY OF BEAM

Condition

From the first inspection the support beam appears to have suffered deterioration from a water leak above the location of the post. Further assessment confirms that the beam is not capable of carrying the applied loads alone.

4. RECOMMENDATIONS

The beam does not pass the load assessment and it is recommended by this report that the beam is supported by a new structural steel section ensuring the buildings structural stability throughout its expected lifetime. The required steel beam has been initially sized as a 203UC46, this is approximately the same physical size as the existing timber beam so will fit within the wall structure and is strong enough to support the applied loads alone. Concrete padstones will be required to found the new steel beam in the masonry wall.

To install the new beam beneath the existing wooden beam the load bearing stair wall will need to be removed for the duration of the works. This in turn requires the removal of the stair case which is in part supported off the wall. Before the steel beam can be installed the existing beam and the floor joists need to be jacked/propped to remove the applied load to the existing timber beam.

The jacking that is to be used to reduce the deflection in the floors will apply substantial extra force into the vertical members of the wall. In the locations where the deflection is most pronounced two new C24 softwood members are required to replace the existing members on each floor prior to commencing the jacking process.

A simplified method for repair is as follows:

1. Dismantle stair
2. Replace Vertical members in above walls
3. Prop timber beam & floor
4. Jack to remove deflection in beam, taking load into props away from wall
5. Remove wall
6. Install padstones and new steel beam directly below the existing beam
7. Slowly remove props letting beam rest on new steel beam
8. Reinstall wall beneath steel beam
9. Reinstall stair case

It is also recommended that a timber survey is conducted which will identify further remedial works if found.