Basement Impact Assessment

Basement Impact on Structural Stability

85 Camden Mews, London NW1 9BU

Response to Section F Item 11;
Maintain the structural stability of the building and neighboring properties

Over the years many of the properties in Camden Mews have had basements added. The proposal is to add a basement area that extends over the full width of the plan of no 85, together with a rear lightwell in the rear garden.

One of the adjoining owners has indicated their wish to construct a similar basements to their properties in the future (subject to planning etc.). Consequently we propose the walls to the new basement walls to no 85 are to be positioned and designed to accommodate the future construction of a basement to no 87. The construction rational is extended to the south of the site to accommodate any future basement expansion to number 83. The timetable of any work on the adjacent properties is unknown and cannot be guaranteed to coincide with work to no 85.

A small light well is proposed to the rear.

Design of the lightwell and basement
The small light well is constructed using concrete retaining walls and base slab. The walls are designed as vertical cantilevers. The ends of the side walls are to be secured into the new concrete under the rear elevation, the connection of which is designed to resist lateral movement but allows for relative vertical movement. The structure of the light well, being an open U on plan, is inherently stiff and stable. Details are shown on drg SkBC 2.

The walls of the main basement are to be designed as vertical cantilevers from a concrete base. Construction details are shown on drg SkBC 1. The maximum depth of the construction will be in the order of 2.50m below general ground level.
The new basement walls will be designed to cater for the following:

● To take the vertical load from the retained party wall, the load from the self weight of no 85, and the loads from the adjacent properties which could be in full occupation.
● The new basement walls to be widened out at the bases to take the full loading from above ensuring a bearing pressure on the ground within the limits set by Southern Testing shown in the report.
● To resist lateral earth pressures and any hydraulic pressure using the data supplied by Southern Testing.
• The walls under the party walls will be designed assuming that adjacent basements will be constructed at a later stage, so that the new walls can accept lateral pressures from the retained the soil.
● Cater for the infiltration of ground water using concrete of a low water content to concrete to limit shrinkage cracking.

A check will be carried out to ensure there is sufficient self weight in the structure to prevent flotation. This will apply particularly to the lightwell structure.

Construction of the lightwell and the basement.
The objective is for the Works to be carried as safely as possible and that movement to the existing structure is limited to acceptable tolerance.

Without the benefit of discussing the possible sequencing of the Works, there would seem to be benefits to constructing the U-shaped rear light well before the creating the main basement. The construction is relatively straight forward and on completion would offer good access to the basement area.

For the construction of the basement structure, as the party walls are to be retained, new basement walls will be constructed on underpinning principles.

The main operations to the construction of the light well would be:

• Excavation of the light well:
The construction of the light well should be able to be achieved in one operation given the size of the construction.
Casting the base slab with kickers for the retaining walls.
Temporary propping will be required to the footings of existing rear wall and soil below.

• Casing the three rc light well walls with small returns.
The rear exterior wall would be removed and high level propping to the first floor and roof construction would be required.

The main operations would then be:

• Work under the rear external wall:
Removal of the soil under the steel beam over the basement.
Constructing the remaining section of the rear wall of the garden elevation.

• Construction of walls under the party walls:
Construct the walls in 3 no alternative bays approximately 1.2m wide. The end bays would have small returns under the front elevation.
The footings of the existing party and external wall are the removed; the underside of the walls being at approximately the underside of the new ground floor construction.
The toe of the reinforced concrete wall is to be cast first be cast with a kicker and starter bars.
Ends of the concrete to receive a continuous polymetric hydrophic waterbar strip.
Each new concrete wall to be propped (as flying shores) against the retained soil.
Provision is to be made for supporting the existing rear elevation which would be due for demolition as part of the superstructure work.

• Construction of wall under the front (Camden Mews) elevation:
Construct the wall in 4 no alternative bays approximately 1.2m wide. Construction details as for the basement party walls.
Each new concrete wall to be propped (as flying shores) against the retained soil.

• Excavation of remaining soil in the basement:
Excavate soil and remove from site.
Re configure propping with flying shores at the corners where possible.

• Construction of basement slab:
The reinforced concrete slab is to be cast in one pour with reinforcement tied into the bars of the toes to the cast concrete walls.

Once the construction of the retaining walls are complete, basement structure props may be removed.

Throughout the duration of the construction, the Works will need to kept clear of ground water. There will need to be a drainage sump to allow a pump to dispose of any water found on the site.

Outstanding Issues
The following items need to be cleared before work this work may commence:

• Receipt of Town and Country Planning approval.
• Full discussions with the builder over the method and sequencing of the Works. A full method statement will be required, together with a CDM assessment.
• The drawings and structural calculations covering the construction to be submitted to Building Control for their approval.
• Party Wall Awards have been received from adjoining owners.

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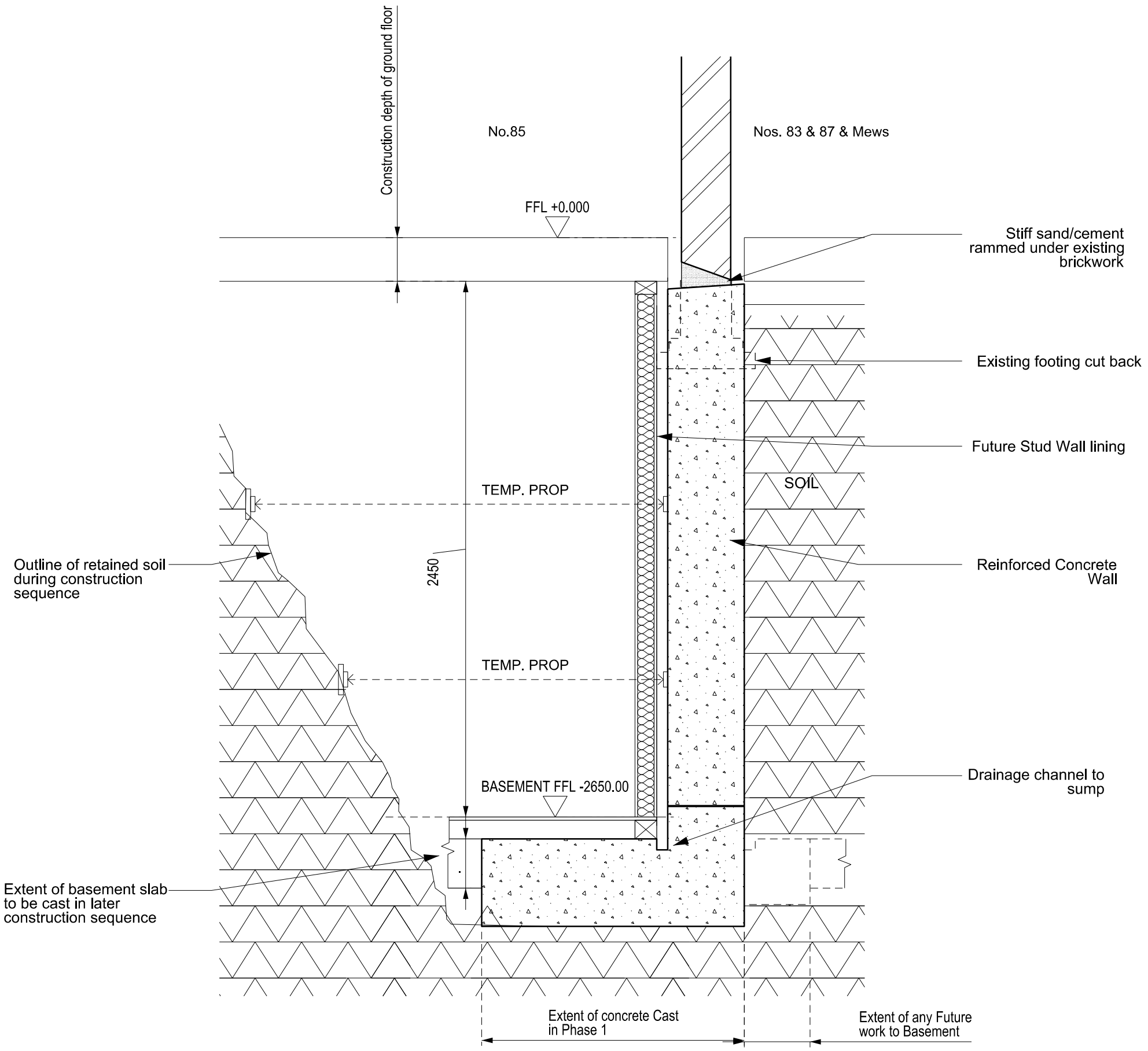

A	Detail Section through basement party walls
SK_BC1	1:20 @ A3

Note: Construction shown only diagramatically. Insulation of waterproofing to basement slab.
Reinforcement not shown

DRAWING NUMBER	REVISION
85_CM_Sk_BC1	/ A

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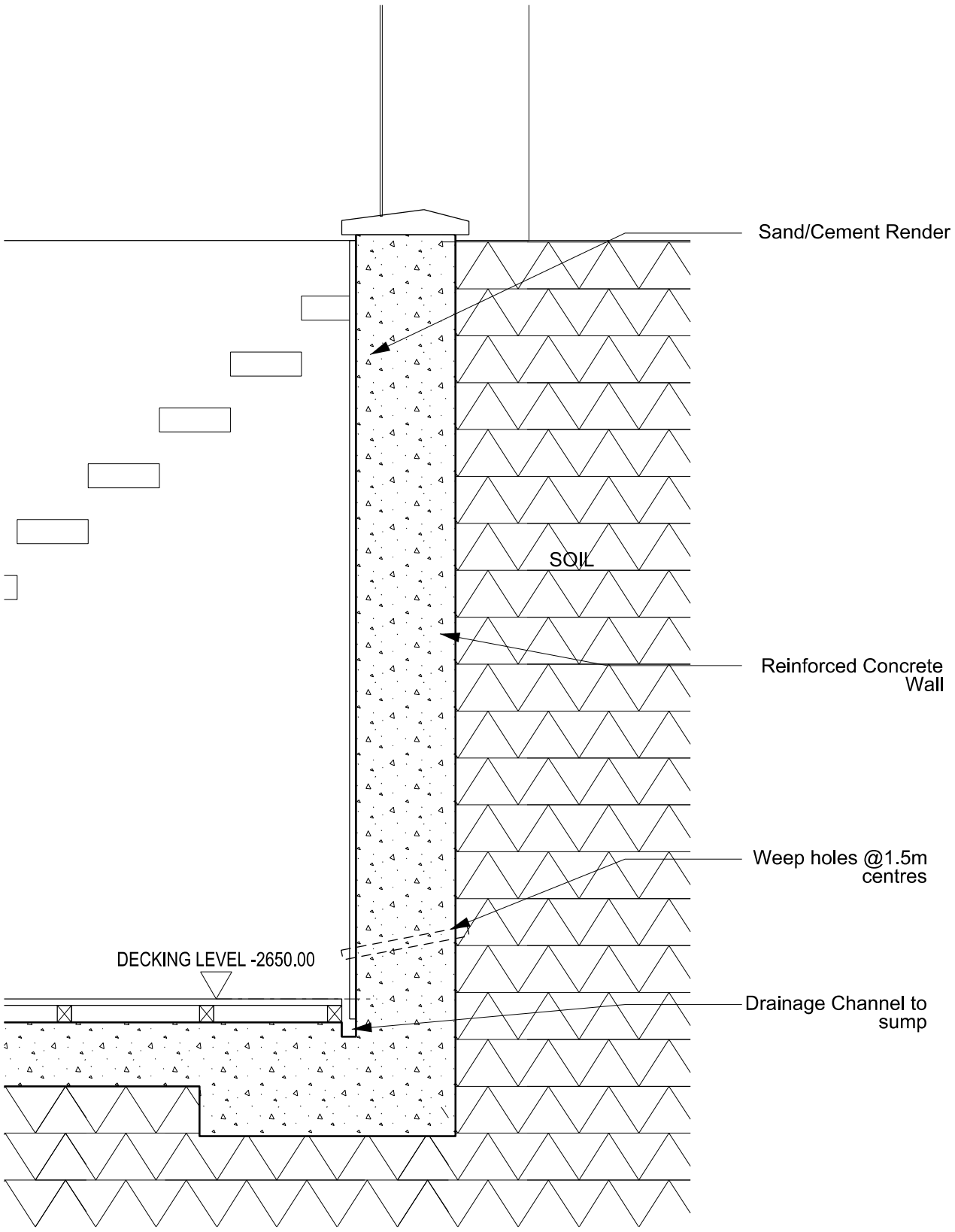
PROJECT TITLE	DATE
85 Camden Mews	12.09.14
	STATUS: INFO
DRAWING TITLE: Typical Sections: Basement Construction	SCALE: / @A1, 1:20 @A3
	DRAWN: ER / CHECKED: JR

Rev	Date	Revision	Drawn by	Checked by
A	16/9/14	Existing footings show	JW	



A	Section: Construction of Lightwell
SK_BC2	1:20 @ A3

NOTE: Waterproofing not shown

DRAWING NUMBER	REVISION
85_CM_Sk_BC2	/

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PROJECT TITLE	DATE
85 Camden Mews	12.09.14
	STATUS: INFO
DRAWING TITLE: Typical Sections: Lightwell	SCALE: / @A1, 1:20 @A3
	DRAWN: ER / CHECKED: JR

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