85 Camden Mews: Assumed Construction Sequence

The methodology needs to ensure that the basement structure is constructed in such a manner that avoids endangering the stability of the existing structure and neighbouring structures. In particular, care needs to be taken to ensure that the existing rear wall is not undermined prior to its demolition, and that any internal propping required to support the structure after demolition of the rear wall can be safely and effectively installed. Care is also needed to ensure that the garage-side external wall which is to be retained (and become an internal wall) is also adequately supported.

The following sequence of work is expressed on drawing 85_CM_BIA.

Stage 1:
Demolish existing garage and washroom to ground level. Demolish rear extension. Soft strip existing structure as necessary.

Stage 2:
Install RC underpins under existing side wall (facing No83; current external wall to become internal) from both sides of wall, including starter section of base slab on both sides. Install temporary lateral propping to soil left insitu on both sides.

Stage 3:

a) Install RC underpins under No83 and to alignment of new front and rear wall in area of former garage (including to form the section of the rear wall at basement level on this side of the property), following standard hit-and-miss approach. Underpins to have starter section of basement slab included. Install temporary lateral propping to central soil berm left in place (within footprint of former garage)
b) Install RC underpins under side wall to No 85 (adjacent to garages); underpin to stop slightly short of rear wall to existing structure. Install underpins under front wall of existing structure. Underpins to follow hit-and-miss sequencing, and to include starter section of basement slab. Underpins to be laterally propped to central soil berm left within body of existing house. (Rear wall remains supported on existing foundations)

Stage 4:
Extend the building side underpinning adjacent to the neighbouring garages (Number 87), to extend beyond the rear wall of the existing garages structure, and to form the stub section of the rear wall at basement level.

Stage 5:
Construct the rear and side walls to the sunken courtyard. Trench support will be required on the courtyard side, so that soil can be retained and the risk of undermining the rear wall is avoided, but the excavations may be battered back along the rear and side walls, where garden space is available. Fully battering the side of the excavation facing No83 may, however, require the side slope to extend into the neighbouring garden, so it is likely that vertical trench support will be required. The side wall adjacent to No87 will require vertical trench support on both sides, or may be constructed using underpinning techniques before the other walls are constructed.

Stage 6:
Install internal temporary works to the structure, to enable the existing rear wall to be demolished. (Temporary works to temporary works designer requirements).

Stage 7:
Dismantle existing rear wall.

Stage 8:
Install new beam at ground level spanning over location of opening in rear wall at basement level. Construct new rear wall or modify temporary works such that loads now transferred to new structural elements.

Stage 9:
Remove internal propping where this bears on soil at current ground level

Stage 10.
Excavate central soil berm from under the house, from under former garage location and from the sunken courtyard area, repositioning lateral props to maintain lateral support. Cast new basement slab. Remove lateral supports once slab has reached adequate strength.

Note that it should be feasible to undertake stages 3a, 3b, 4 and 5 simultaneously, subject to a suitable 'hit-and-miss' schedule being developed. The underpin to the side wall under the rear corner of the building (where it is adjacent to the garages) may be difficult to form where it is under the rear wall, so this may need to be constructed after the existing rear wall is demolished.