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**19 Holly Hill**

**Hampstead**

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**Brief Historical Analysis**

Number 19 Holly Hill Hampstead is the western end of a terrace with elements dating from the late 17th to the late 19th century. The main historic part of the terrace comprises number 15, 17 and 19.

Phase 1: The first phase of the present building is a rectangular brick built two storey structure on a semi-sunken basement at the northwest corner of the terrace and has a single room footprint. The walls have a three brick string course at first floor level and a plinth detail. There is some evidence that the building originally returned to the east, in that a short length of plinth survives at the base of the north façade of the 18th century addition.

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Phase 2: In the early 18th century a large structure was built onto the south and east of the Phase 1 building. The west façade of the new structure was constructed in an alignment proud of the 17th century structure and laps onto it with a butt joint. This new west façade is on sloping ground with a semi-sunken basement and is therefore three storeys high, but the eaves line is a continuation of the 17th century element. The west façade is constructed in header bond whereas the south façade is all in Flemish bond and is contiguous with numbers 15 and 17. There is evidence for some alterations to the fenestration with both blocked window openings and re-configured openings.

Phase 3: At the east end of the terrace in the late 19th century, Number 15 was extended by one bay eastwards and the upper section of the original gable was modified. The east elevation of this extension was also rendered at a later date.

Phase 4: Towards the end of the 19th century a wing was constructed to the north of Number 15 to provide an extra unit of accommodation.

Phase 5: Various alterations have been made to the fenestration of the terrace during the 20th century and a number of major repairs undertaken. These included the re-construction of much of the roof structure with sawn softwood, the re-building of the parapet on the centre section of the south elevation and the re-construction of a large area of brickwork on the north elevation.

**Condition**

The main area of concern is the southwest section of Number 19 which comprises the west gable of the south elevation and the south component of the west elevation. There seems to have been historic movement in the main walls in this area with cracking and bulging particularly to the west wall. This wall is in header bond, and with the semi-sunken basement stands three storeys high. It would appear that only the main floor joists run east/west and the secondary joists north/south; thus the west wall has very little lateral ties. There is also evidence for old window openings with blockings not tied into the rest of the wall. The later window openings are sited vertically above each other with recent brickwork of none matching size and colour and with poor connection to the surrounding historic fabric. This has had the effect of dividing the façade into two columns of brickwork with very little tie provided by the small areas of brickwork between. This area coincides with the maximum deflection in the façade. It is also suspected that there is some deterioration in the old built-in timber lintels thus allowing the brickwork to slump. These problems have all contributed to some instability of this wall face with bulging and cracks. The north end of this section abuts the 17th century elements of the structure with a straight vertical joint when no attempt has been made at bonding. This joint has opened up in the past and been shallowly re-pointed in places with a hard cementitious mortar. The joint is open for most of its three storey height with large voids behind which are filling with loose materials and these are creating a wedging effect forcing the 18th century wall away from the 17th century structure. There has also been piece-meal crude re-pointing in dense cementitious mortar and this is compounding the problem forming “stiff points” in what was originally a flexible structure. This again is causing localised stress and cracking in the wall face. The use of header bond in the original construction was for display and it is unfortunately one of the weakest of brick bonds.

At the south end of the west façade at the top corner the overflowing gutter has resulted in the degradation of the mortar and the erosion of at least twenty bricks. This is a vulnerable area being close to the corner and will need careful repair to avoid structural failure. At the north end of the façade at low level there is a hinge fracture in the plinth adjacent to the short return to the 17th century façade. The close association to the rainwater down pipe and drain would suggest a contributory factor may have been a linking drain in the past causing a localised softening of the ground and a reduction in its load-bearing capacity. Also there may have been localised lateral thrust or point-loading which has caused outward rotation and in the past attempts have been made to arrest this with an S tie-plate.

There is a large amount of vegetation growing around the wall base and large bushes growing adjacent to the corners of the structure. These may well be contributing to the instability of the structure and will also be causing a damp problem.

**Recommendations**

In order to undertake a detailed survey of the west façade a full scaffold will need to be erected and this will enable a detailed repair specification to be drawn up. Failing this the following general approach is suggested and to be read in conjunction with the Method Statement:

* Remove all vegetation adjacent to the structure and erect a scaffold designed to be used not only for inspection for undertaking the remedial works.
* Undertake a thorough survey and mark up on drawings and photographs the areas which are to be repaired.
* Clean out the butt joint between the 17th and 18th century structures removing all the cementitious mortar and loose debris. Insert helical stainless steel stitches. Re-point and grout the void as detailed in the Method Statement.
* Clean out the cracks on the rest of the façade. Stitch, re-point and grout.
* In cracks where hinge fracture have occurred remove bricks in the localised area and as it is not possible to totally re-align, the brickwork of the two planes should be “humoured” together.
* Carefully cut out all cementitious mortar and undertake brickwork repairs.
* Investigate areas of bulging brickwork and if found necessary, remove separated the external skin, clear debris from void and re-construct the outer face including helical ties in the process.
* Tie-in the area of brickwork within the old window blocking using helical ties, but taking care to leave the historic blocking expressed.
* At the top southern corner of the façade where water damage has occurred, replace the damaged face of the bricks with “brick slips” so as not to break the header bond. Helical ties should also be incorporated into this repair.
* Insert the helical tie system at each floor level to connect the façade to the floor structure. This may also involve the strengthening of the joints between the principal and secondary joist system and works to convert the floor into a diaphragm at each level.
* Rake out and re-point the defective joints on the whole façade.
* Check all the drains, and repair and improve as necessary.
* Insert a French drain and an evaporation area at the wall base.