



OLD SCHOOL COURT
TOTTENHAM, N17 6LY

SECOND INVESTIGATION REPORT INTO DEFECTS CAUSED BY DAMP
AT FLATS 1, 2, 24 AND 25 OLD SCHOOL COURT
WITH REPAIR RECOMMENDATIONS

441301

September 2022
Revised 12 October 2022

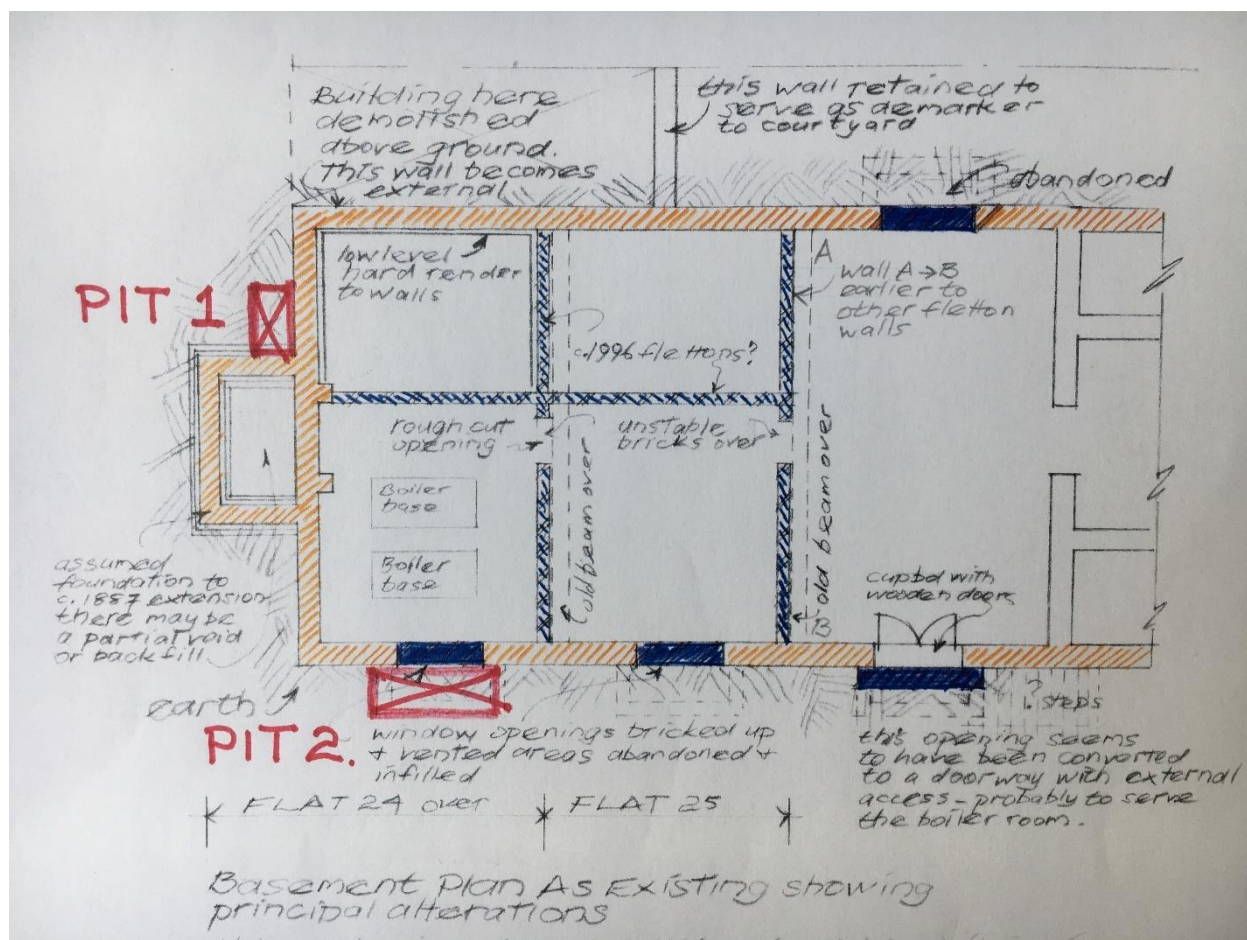
177 KIRKDALE SYDENHAM LONDON SE26 4QH 020 8659 3250

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I. INTRODUCTION AND SUMMARY

- I.1 Further to the desk studies and visual investigations which were written up in our report of March 2022 (ref. 441301) this document deals with physical investigations to examine ground conditions and external construction below the present ground level.



Location of Inspection Pits 1 and 2 at the external walls of Flat 24

- I.2 In summary, the further physical investigations at the external walls of Flat 24 confirmed the essential conclusions of the March report and enabled a full explanation of the original construction to be detailed, so that appropriate interventions could be designed. It should be noted that investigations have revealed original construction below ground level that is not shown in the 1860's drawings held by the Drapers Company which are referenced in the March 2022 report.
- I.3 An investigation of the corridor sub-floor adjacent to Flats 1 & 2 was also carried out to examine the possible cause of dampness affecting the internal stone corbels which support ground floor construction at Flat 1 & 2. This showed that a thick concrete layer had been placed on top of the 1860's substrate layer breaching the DPC so that moisture could bypass it and cause dampness above the DPC in the brickwork and stone corbels. In the basement rooms, the walls to the corridor side have been drylined but the effects of significant damp penetration are apparent at the stone corbels which project into the room just below ceiling height. The corbels support the principal structural wooden floor beams, which are constructed with a steel flitch plate through their centuries. The wooden beams are therefore vulnerable to rot as has happened at Flat 2.

- I.4 This written report with accompanying drawings numbered 001 to 008 includes proposals for addressing defects as uncovered to date at Flats 24 & 25 and where there are defects caused by raised subfloor at Flats 1 & 2.
- I.5 The physical examinations were carried out on 12, 13 and 18 July and 2 and 23 August 2022. A follow up inspection inside the basement, of 24 & 25 was carried out on 12 September 2022. That last inspection was carried out after a period of very wet weather and it was noted that the basement floor to 24, 25 & 26 was wet especially to the south side.
- I.6 The on-site examinations were carried out as the excavation/opening up proceeded on 12, 13, 18 July (external digs) and 2, 23 August (internal corridors). A final internal basement examination was carried out on 12 September when good lighting was first made available to facilitate inspections. I record my thanks to Patrick Sexton for his help with arranging access for the various inspections and arranging lighting.

2. INVESTIGATION PIT I



Pit I. This shows the pit fully dug.



Pit 1. Detail showing the cavity constructed to guard against excessive wetting of the lower part of the external basement wall. This construction was found also at Pit 2 and at the front of the building at the external wall of Flat 3.

- 2.1 Pit 1 was the first to be dug at the angle of the external wall of Flat 24 exposing the original 1860's construction and the 1890's extension. The original 1860's wall descends vertically below the current ground level by 10 courses where it then becomes thicker by way of three bricks set-offs. The brick set-offs look like foundation footings but closer inspection shows this not to be the case; the set-offs create a cavity wall with a cavity approximately 4" wide. (Refer to drawing 3). The cavity was revealed when a few of the set-off bricks were removed. It descends approx. 2000mm below existing external ground level. The external brick leaf is braced to main wall by end-on bricks across the cavity set in a staggered diagonal pattern like modern cavity ties. The original 1860's ground level adjacent to the wall was approximately 150mm below the level of the brick set-offs, the original DPC being at the top of the first set-off brick.

- 2.2 This very interesting construction is not shown on the 1860's drawings held by the Drapers Company and would seem to have been devised during construction to deal with the ground conditions as encountered, to ensure that the basements remained substantially free of excessive penetrating moisture. The original construction took care to prevent excessive moisture reaching any wooden construction by the combination of a double slate dampproof course and the cavity construction that descends below the level of the dampproof course.
- 2.3 At the 1890's projecting extension there is no evidence of a cavity construction but there is continuation of a dampproof course at the same level in the walling as the 1860's DPC.

3. INVESTIGATION PIT 2

- 3.1 The location for excavation Pit 2 was chosen to investigate the original construction at the basement window openings and the adjacent plain walls below the existing ground levels. The present ground level is approximately at the top of the window arch brickwork, the arches being concealed by the ground build up.



First stage excavation at Pit 2 exposing the top of the window arch (bottom of image), the vent area cross-wall and the brick set-offs denoting the external cavity construction.



The top stone of the coal chute exposed.

- 3.2 This pit at Flat 24 wall was opened up to explore the construction at the assumed original basement windows and the walls adjacent to the assumed window ventilated area. The opening up quickly revealed the arch to the basement window, the area cross wall and the relationship between the area and the adjacent plain brick wall.
- 3.3 When the excavation was lowered by a few courses below the brick set-offs at the plain wall a clear stratigraphy was exposed.



The above image shows the modern paving on a grey cementitious bedding and fill, below this a bright red layer of backfill that I assess as spoil from the demolition of the former gymnasium and swimming pool buildings which were formerly behind the main school and below this an early backfill relating to the original construction period.



Original slate DPC exposed.

The original DPC level is at the top of the set-offs. It is clear that the ground against the building has been raised in stages over the years.



Chaotic backfilling at Pit 1 using it seems demolition material from the school gymnasium and swimming pool buildings.



The extent of excavation at the basement “window” Flat 24.

- 3.4 From the details exposed one can deduct that the original window to the basement was soon converted to be used as a coal chute. The cill was lowered (different bricks at the reveals at low level) and a stone chute lip installed. The reveals of the window are covered in coal dust and the excavation once open up smelt strongly of coal as if it had been in use yesterday.
- 3.5 When heating converted to oil, with tanks installed in the basement, but on opposite side of the basement, all deliveries were by pipes installed to the other side. However it seems that gas was also used for some functions as a gap pipe and remnants of a gas meter (redundant) were found at the bottom of the excavation. The pipe can be seen in the above image.

4. INVESTIGATION AT PIT 3

- 4.1 This investigation was included because of a concern that there may be damp affecting the bathroom wall inside the basement of Flat 3. Internal inspection of Flat 3 bathroom did not reveal any obvious damp but the owner reported that he thought that the wall tiling, which is on an internal lining, seemed to be bulging.



The excavation adjacent to Flat 3 wall. The modern ground level and reset modern drainage gulley are both too high. Both need to be reset to below DPC level.



The dig adjacent to the downpipes shows that the existing gulley is inadequate to take the large flow of water from the main roof and it is set above the DPC leading to saturation of the wall. A section of original stone drainage gulley remains in position and is included in this image. It is approx. 10 brick courses below the modern drain, the correct level for finished ground.



This shows the excavated ground at Flat 3 adjacent to the rainwater gulley, and the drain coming from the gulley pot is in the picture. Also in the picture is the cavity wall construction, all as seen before and the DPC is at the top off-set brick. Unfortunately as before the ground has been raised above the DPC and the wall is permanently wet giving rise to internal dampness and threatening the timber ground floor construction.



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5. INVESTIGATION AT CROSS CORRIDOR FLATS 1 & 2



Location of Inspection Pits at Flats 1 & 2



Recently constructed corridor floor structure



Looking into the corridor underfloor void. The hole in the picture show the breakthrough into the cavity wall construction which is the same as that discovered at the external walls.

- 5.1 A hole had previously been cut through the 1996 concrete oversite slab and some bricks removed to reveal that there is a cavity construction, as we have previously seen at the external walls. This wall is not external. The corridor external wall is not deeply founded as the corridor is only a single storey. Therefore the inner wall, which is the Flats perimeter wall, goes lower than the outer wall. The construction of the inner corridor wall seems to follow the same logic as the external walls already described,
- 5.2 Also visible is a plastic pipe which serves as an extract from the bathroom on the other side of the wall. This introduces moisture into the floor void, exacerbating dampness.

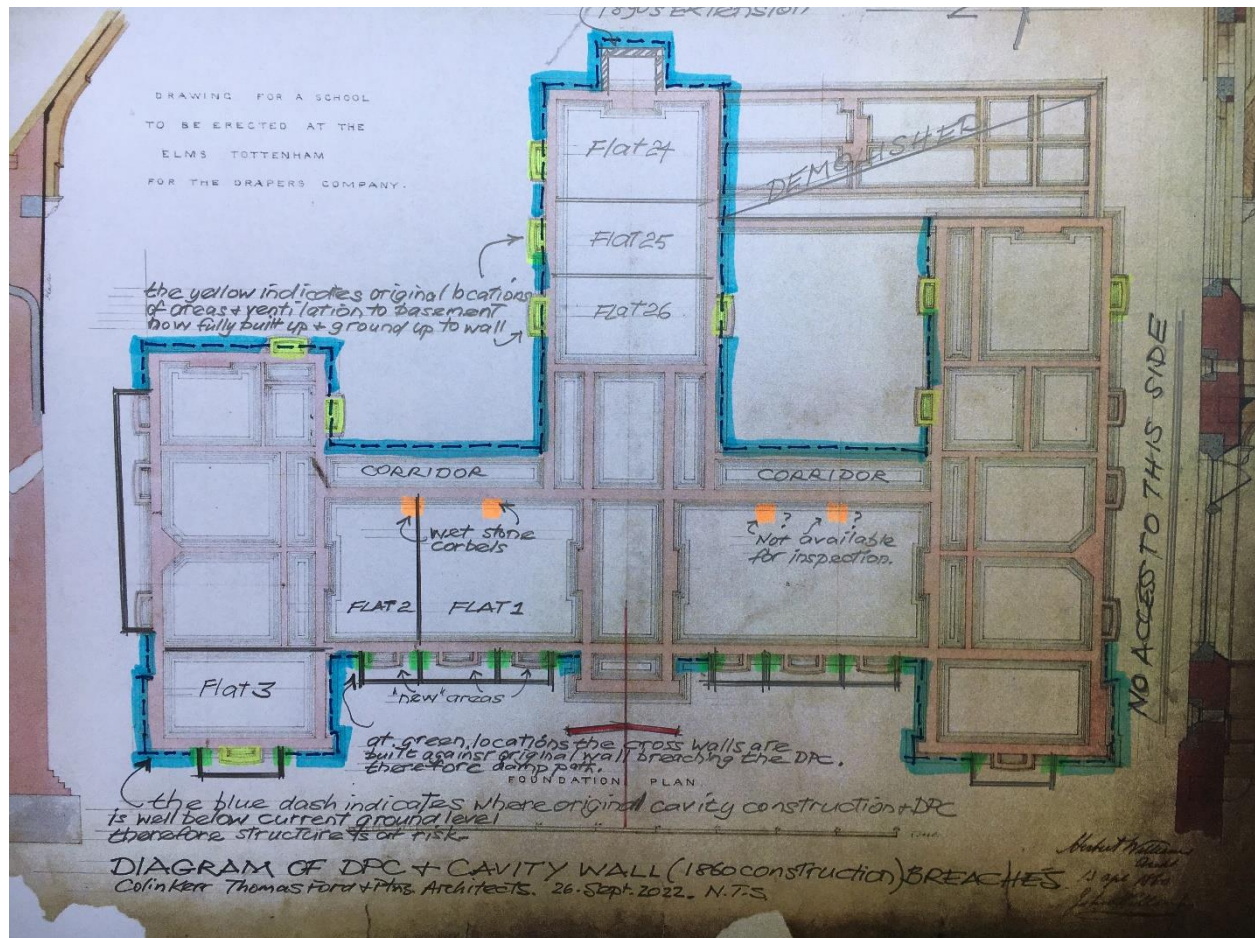


The wall at this position should be perfectly dry but the presence of efflorescence on the bricks and erosion of joints indicate fluctuating dampness in the wall, the dampness drawn from below. Efflorescence appears at the evaporation zone. The oversailing courses in the image relate to the wall plate of the wooden corridor floor,

- 5.4 Services are laid through the void with galvanised trunking on the surface of the concrete oversite.

6. DISCUSSION

- 6.1 The physical investigations of the construction have revealed very well considered construction dating from the 1860's. The construction was good and the original materials well chosen and built. However successive alterations, not entirely related to the 1996 works, have resulted in the loss of the essential damp prevention system of the original build.
- 6.2 The entire building has not been investigated, the focus of this report being on Flats 24, 25 and Flats 1 & 2, but it does seem that the construction of the building is very consistent. Unfortunately the deleterious alterations are also very consistent; raised ground levels, closing up of basement ventilation openings, inadequate drainage gulley arrangements.



The blue line in the diagram indicates where the ground level is above the DPC. There was no access to the north side of the building but similar conditions may exist

- 6.3 It would seem that in 1996 the original slate DPC was not recognised for what it was, and the significance of the relationship of the DPC to the ground level not understood, because the adopted strategy of drylining allied with “waterproof” render in some basement spaces serves only to encourage moisture rise behind these overlays. In effect the problem was hidden.
- 6.4 The role of moisture in porous building materials is unfortunately not well understood. In this country if a building was literally dried out it would in all likelihood collapse. Buildings are in balance with the moisture regime of the surrounding atmosphere. In this country “dry” wood is likely to have a moisture content of about 11%. The objective is to establish an appropriate and “safe” moisture regime for the building in question.

- 6.5 Old School Court was designed and built very well and the detailing well considered to provide a safe regime. The slate DPC as initially installed is still in place everywhere that the walls can be inspected and the cavity to protect the lower part of the basement walls is in place. However all the external walls, apart from those where large external areas were created at the front of the building have had the ground levels raised against them so as to cause dampness in the walls. This effect is more extreme at Flat 24 & 25 because the ground is highest in relation to internal floors at these two flats, but the potential for ongoing slow deterioration at other locations is high and the likelihood of ongoing damage is also high, as is evidenced by the investigation against the walls of Flat 2.
- 6.6 Given that the walls at Flats 24 & 25 are very damp, indeed saturated, it will take time for the brickwork to dry out. Therefore repairs need to be devised to allow the walls to effectively dry out to both sides, but while this is ongoing the reinstatement of floors to allow reoccupation needs to be undertaken so that all timbers are set clear of damp brickwork and are appropriately ventilated.
- 6.7 At Flats 24, 25 & 26 the basement areas are for all practical purposes unventilated. Reinstatement of good cross ventilation is vital and fortunately this can be readily achieved by reinstating ventilation at the original basement window positions and installing appropriate ventilation on the opposite side.
- 6.8 The exploratory excavations have shown how small ventilated areas were built in front of the basement windows and this principle can be employed to create a similar narrow area around the exterior walls of 24, 25 & 26 to allow the walls to dry and to reinstate the effect of the original dampproof course and cavity construction.
- 6.9 The issue at the internal corridor walls is similar but the solution is different. To reinstate the original regime a section of the concrete oversite must be removed for the full length of the corridor. Doing this will return the condition at the corridor side of the flats to that which formerly obtained. However, there could be hidden decay ongoing or incipient decay could occur if there is trapped moisture on the flat side of the wall. This should be checked on the flat side of the wall, adjacent to the stone corbel, by opening up a section of ceiling plasterboard. This could be carried out initially with minimal damage using a camera boroscope. Through the drying out process the construction should be monitored as it is possible for rot to emerge during drying out should critical zone condition come about.

7. LIMITATIONS

- 7.1 I have not been instructed to inspect the entire building for defects and the report is limited to the fundamental causes of the decay to timber at ground level in Flat 24 & 25 and the cause of deterioration noticed at corbels in Flats 1 & 2. However in the course of my inspections I have noted that the construction of the building is very consistent and that there are similar conditions at other locations, which are likely to lead to decay.

Colin Kerr
Thomas Ford & Partners
30 September 2022
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