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Vinci Facilities, Stuart House, Manor Way, Rainham, Essex. RM13 8RH. **F.A.O. Jack Thomas**

Our Ref: CAS / 25536

20th March 2023

Dear Jack.

Re: External inspection to Derby Lodge, Wicklow Street, London. WC1X

Further to our site visit on the 11th March 2024 to inspect the existing structure now that more of the structure has been exposed, we have the following comments to make :-

- We found that the steel beams / reinforcement between the clinker concrete which form the landings are corroded (carbonised). The beams are at approximately 600mm centres.
- We found evidence of previous repairs to the underside of the landings. We do not know when they were carried out. The cracking to the underside of the landings is inconsistent.
- The clinker concrete forming the lintels over the staircase and external landings has spalled and no longer bonded to the steel reinforcement. The streel reinforcement is corroded.
- The ends of the beams into the piers appear to be corroded. Further investigation is still required to confirm if the beams need to be replaced or not. Each beam needs to be checked individually.
- It had been raining the night before our visit. We could see that the surface water was not draining away from the landings. The water is seeping into the landing structures. We believe this is the main cause of the deterioration to the landing structure.
- Some of the brickwork within the columns had cracked, this will need to be replaced.
- Concrete forming the windows sills has cracked. Reinforcement has corroded.

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Photos from our visit.



Concrete lintel over the opening to the staircase.



Clinker concrete lintel. (external landing to flat entrances).





Signs of previous repairs to the landing structures. Reinforcement varies. Concrete is not clinker in some areas.



Cracking to the underside of the slab is not consistent. This may be down to previous repairs.





Surface water pooling on the landings. It is not drawing away. The water is percolating into the landing structure.







Cracked concrete forming the windowsills.

Conclusion and recommendations :-

- The beams over the staircase and landings to the flat entrances cannot be repaired with Sika (or similar products). In our opinion the clinker concrete lintels need to be removed and replaced with concrete lintels.
- The steel beams which support the landing need to be checked on a case-by-case basis. It is likely that several beams which support the edge of the landing will need to be replaced with a new galvanised steel beam. Refer to drawing 25536 / 03.
- Cracked brickwork within the piers will need to be cut out and replaced with a class A engineering bricks. Helifix bars to be installed as noted in our previous report.
- The waterproofing applied to the top of the landings needs to be re-laid so the surface water drains off the structure. We recommend that the drains are cleaned / repaired as required.
- There were no cracks present to some of the undersides of the landing where the reinforcement beams are within the slab. We cannot guarantee how long it will be before the finishes crack and concrete spalls.



- To replace the beams along the front of the landings each landing will need to be propped. (top to bottom) to ensure the loads from the structure are transferred down to the ground bearing slab. Refer to drawing 25536/01.
- The brickwork over the staircase opening and landings to the flat / lift will need to be propped. To avoid point loads onto the landing slabs the props will need to be back propped down all the way down the structure. As the building is occupied, the works will need to be planned to avoid disruption to the residents and ensure fire escape route is not blocked.
- Due to the extensive cracking and defects found to date we recommend that further tests are carried out as stated in the Sika's report dated 21st March 2024. Extract from report below.

Percussion - Required (Hammer test to mark out delaminated areas for repair)

Carbonation - Required Carbonation (Measure depth levels of carbonation ingress)

Cover - Required - (Cover over rebar, this works with carbonation to see how close carbonation is to steels)

Chloride - Recommended - (This is to check the contamination levels in the concrete via dust particle analysis)

Core test - Recommended (Core compressive strength of concrete) OR

Schmidt hammer - Recommended (Hardness of the concrete)

Martech may be able to carry out this testing for you. Their contact details are : 01487 83228. <u>www.martech.uk.com</u>

The recommend works are required to both blocks on Wicklow and Britannia Street.

If you have any questions on the above, please do not hesitate to contact us.

Yours Sincerely,

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Christopher Seaman (Bsc Hons)