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Summary of Health Audit of Partially Constructed Ten Towers (Towers A1 to A6 and B1 to B4) of Unitech's Unihomes-03 Project, Sector 113, Noida

A. Structural health audit related observations

1. The health safety audit of the already constructed portions of the ten towers of Unihomes-03 Project, Noida under reference shows satisfactory results in general. No serious structural distress has been observed in the building towers under reference and they are found to be largely alright.
2. The non-destructive tests for evaluating quality and integrity of concrete on the basis of pulse velocity and surface hardness results in various RC structural members of buildings show satisfactory results at almost all the tested locations. Thus, the quality and integrity of concrete in various structures are adjudged to be acceptable.
3. An assessment of in-situ strength of concrete and thereby evaluation of compliance with the specified grade of concrete show satisfactory results in all the building towers under this scope. Therefore, the in-situ concrete in RC structural members is found to be in compliance with the specified concrete grades.
4. The durability vulnerability evaluation tests show satisfactory results and acceptable quality of construction with respect to the durability specifications in all the building towers under reference. The chemical make-up of concrete with respect to the presence of chlorides, sulphates, carbonation and pH is found to be acceptable largely. Half-cell potential values did not show any active corrosion in the RCC at most locations. The thickness of concrete cover has been found to be deficient though at few locations as pointed out in this report and all such locations would need appropriate corrective measures.
5. Examination of compliance of construction of RC structural members in terms of their number, sizes, reinforcement detailing and maintenance of correct construction records

during the construction show the construction of various structural member to be complying the design specifications in general.

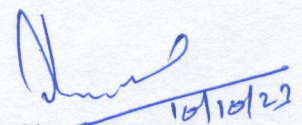
B. Rectifiable construction related deficiencies/ defects

1. A few construction related defects have been noted based on the investigations undertaken in this study and the same need to be rectified.
2. A thorough visual inspection & distress mapping has shown construction workmanship deficiencies in some structural members of various structures as marked in this report in detail. These deficiencies are honeycombing & incomplete section concreting, exposed reinforcement due to inadequate provision of cover thickness, cracks in few RC members and few non-structural symptoms namely seepage marks.
3. While taking UPV measurements, visibly honeycombed or cracked locations were not chosen for testing as these locations anyway would yield unsatisfactory results. Such locations are already declared unsatisfactory on the basis of visual inspection and distress mapping.
4. As regards the exposed bars hanging through partially built members, will only be reused if no pitting or loss in section are recorded.
5. The locations with thickness of concrete cover wherever found deficient would need appropriate corrective measures.
6. Recommendations have been made to repair those structural members where distresses and deficiencies have been reported in this report with respect to the health safety audit.

C. Concluding observations

It is expected that the client shall take due care in addressing the construction related deficiencies/ defects while taking finishing work of the buildings. The construction of partially completed ten towers (Towers A1 to A6 & B1 to B4) of Unihomes-3 Project (Sector 113, Noida) is found to be in good health and in accordance with the design specifications, subject to rectification of construction related deficiencies wherever observed and mentioned in the detailed report.

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Signature of PI

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