

Reception Slab Condition

Introduction

The finishes around ground floor reception area highlighted in yellow is proposed to be updated to Terrazzo floor tiles and parquet flooring, existing FFL remains unchanged in the current proposal. Whilst removing existing screed and floor finishes, the method of removal was too intrusive hence a portion of existing structural concrete slab was dislodged, resulting holes formed on the structural slab.

The screed removal work was stopped once the hole was discovered, and floor slab was propped before repair works commenced. Different screed removal strategy was then employed and resulted in no visual structural distress.

Observed Conditions

In the location of original issue (labelled as Condition 1 below), a portion of concrete slab was dislodged, resulting a tapered concrete breakout zone with minimum 50mm thick concrete where the hole is formed. Concrete is observed to be cracked, with reinforcement bars exhibiting surface corrosion. Reinforcement bars at the remaining concrete area is observed to be properly bonded, however it is suggested that the bottom concrete cover to reinforcement is minimal, in which for modern standard it may not be able to reach the required fire protection and durability requirement.

In the locations where the revised screed removal approach was used, the surface of the structural slab was seen to be crack-free. Further opening up works from the bottom (i.e. removing the asbestos ceiling to reveal underside of structural slab) showed the structural slab is crack-free as well, although the reinforcement bars were exposed. The contractor reported that no further concrete was dislodged during ceiling opening up works, suggesting exposed reinforcement is an existing condition and requires further repairs.

Structural Review

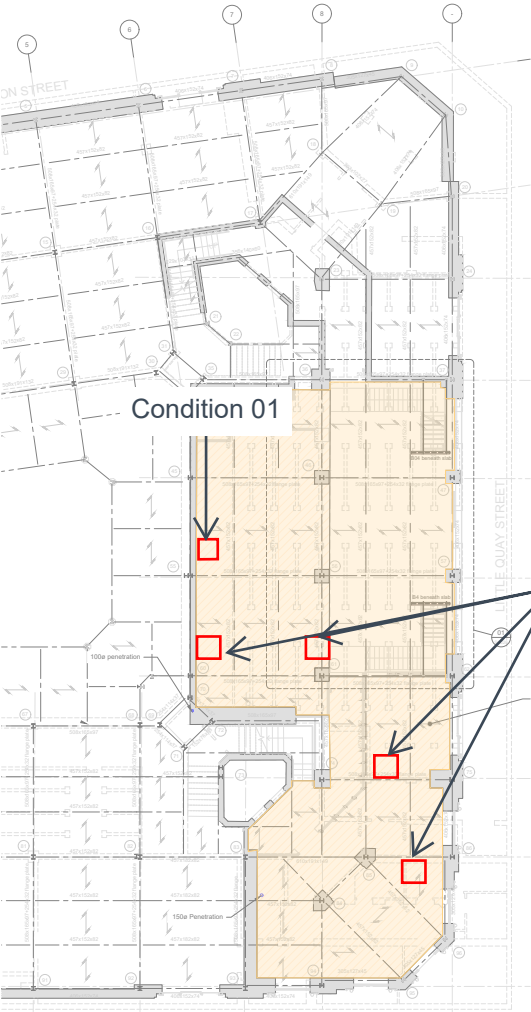
A structural assessment on existing slab capacity was performed. The site measurement of reception slab and reinforcement bar size was aligned with received archive historic drawing, in which based on our assessment the slab can support proposed finishes and imposed load with 70% utilisation. As the existing slab does not show any significant signs of distress (for example excessive deflection) besides the damage from screed removal , it is concluded that the slab can maintain its structural capacity once it is repaired properly.

During the review of the ceiling opening up works, the bottom reinforcement in all opening up areas were discovered to be exposed. This suggested that the existing slab has insufficient bottom cover to meet modern standard of durability and fire protection requirement. Cover will need to increase to suit proposed room usage and fire rating.

Recommendation

The structural slab is to be repaired with appropriate repairing mortar. Because of the cracked concrete formed around the breakout, additional portion of cracked concrete should be removed prior to surface repair. Reinforcement bars are to be wiped clean and prime with appropriate surface protector prior to mortar repair.

The ground floor slab bottom cover will need to be increased to suit durability and fire requirement. This is thought to be undergone during phase 2 works, in which room usage and protection requirement to be confirmed during this phase.



Typical Condition 02

Condition 01

Observation:
Reinforcement bars are currently exposed.
Recommendation:
Use appropriate primer to protect steel bars prior to mortar repair.



Observation:
Area outside dislodged concrete is observed to have no significant structural distress, however bottom cover seems to be insufficient.
Recommendation:
Use mortar repair product to provide additional cover. Pending to phase 2 confirmation of usage for durability and fire requirement.

Observation:
Concrete dislodged during screed removal works, concrete appears to be cracked and loose.
Recommendation:
Locally break out loose and cracked concrete, and repair using appropriate mortar repair.

Condition 02



Observation:
The above photo shows the condition of reception slab surface. The revised screed removal approach does not impose additional structural distress visually, no apparent crack formed. It is acceptable by inspection.



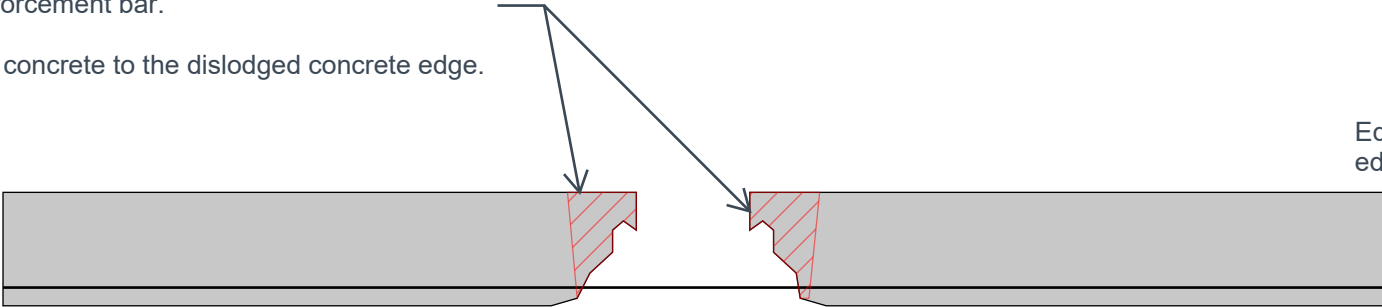
Observation:
At the underside of structural slab, ceiling was removed and concrete slab was exposed. Although there is no evidence of any crack formed that originated from screed removal, existing concrete appeared to have a rough surface potentially from poorly compacted concrete during original construction. Reinforcement bars were exposed.
Recommendation:
Use mortar repair product to provide additional cover. Pending to phase 2 confirmation of usage for durability and fire requirement.

Project Name		Sunlight House	
Sketch Title		Ground Floor Reception Slab Condition Report	
Project No.	24131	Sketch No.	SLH-EOC-RP-240919
		Date	19/09/24
By	TL	Checked	NS
		Scale	NTS

Ground Floor Reception Slab Repair Detail

Remaining concrete portion of existing slab appears to be cracked. Portion to be broken out carefully and not disturbing the reinforcement bar.

Break out cracked concrete to the dislodged concrete edge.



Edge of breakout, to the edge of dislodged concrete.

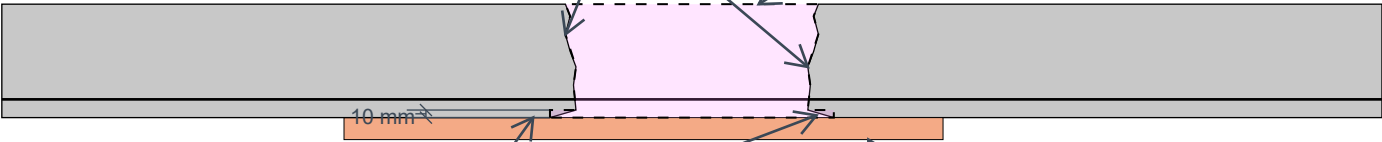
Cracked Concrete breakout location



Existing condition

Scabble back the concrete edge to 1:10 slope

Forsoc Renderoc GP
Concrete Repair Mortar



Concrete broken back to a square edge to the full repair area, minimum 10mm in depth.

Indicative formwork - maximum thickness for overhead locations in a single application without formwork is 60mm.

Refer to Fosroc Renderoc GP data sheet.

Allow propping during temporary works.

Repair Detail

Method Statement for Repair

1. Break back concrete to location shown.
2. Clean exposed reinforcing steel to a bright condition by power brushing.
3. Wipe down the exposed steel surface using thinners.
4. Prime exposed steel using Fosroc Nitoprime Zinrich.
5. Prime concrete edge using Fosroc Nitobond HAR.
6. Appy Fosroc Renderoc GP and allow to cure.

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Notes:

1. Do not scale drawing, this drawing is not to scale.
2. All proprietary coatings, repair mortars and temporary works to be installed in accordance with the manufacturer's specification and details.
3. This infill detail provides temporary solution to the repair. Durability and fire rating needs to be considered in permanent condition, further permanent solution to be developed in phase 2 work.