



Ryan McDonnell
Haringey Council

29TH MARCH 2023

REFERENCE: DM/23007/001

Capital Projects and Property
Haringey Council
5th Floor, Alexandra House
10 Station Road
London
N227TR

Dear Ryan McDonnell,

Haringey Civic Centre – Masonry Façade Condition Survey

Following completion of the ground level masonry survey please find attached the survey report together with a schedule of repairs, budgets, record photographs and annotate elevation drawings.

Quantities and budgets remain subject to verification from scaffold, completion of site investigation.

We trust this meets your requirements, but should you wish for any additional information or further clarification of our allowances, please do not hesitate to contact the undersigned.

In the meantime, we await your further instruction.

Yours faithfully,

David Manktelow
Pre-construction
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SURVEY

Haringey Civic Centre

Masonry Façade Survey February 2023

REF 23018-PAYE-RPT-002





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Executive summary

The building's external facades are constructed from pre-cast stone cladding panels, units and facing brickwork. Cast concrete has been used to form window heads and the 3rd floor cornice. Where cast concrete is damaged it appears to have been cast using an ungraded poorly compacted mortar allowing for unrestricted migration of moisture.

Travertine marble cladding panels have been used to clad columns and fascia on the East elevation. There were signs of minor displacement observed to low level panels but these appeared to be restrained. Further investigation could be considered to remove and inspect fixings.

At the time of the survey the 3rd floor cornice and cladding were not visible due to installation of temporary protection and therefor are excluded from the survey this stage. There has been little obvious maintenance and repair carried out in recent years. Attempted historic repairs are of low quality in a deteriorating condition or failed completely.

Where panels had been previously removed and in location where subsequent further removal took place under PCA instructed trials, metal restraint fixing slots were found to be corroded. Recommend structural engineer investigate existing pre-cast restraint and support fixings for on-going long-term performance and suitability. Carry out relevant tests on existing backing structures to determine future suitability for post drilling and fixing new replacement cladding. Replacement of existing fixings is likely to be able to restrain and support new cladding.

The pre-cast panels have been constructed using a 2-part mortar with a poorly compacted backing mortar faced with a finer finishing mortar. Steel reinforcement is located between the two mortars. The irregular compaction and aggregate ratio of the mixes has allowed the migration of moisture through panels leading to oxidation of the reinforcement and subsequent failure of the panel. The condition of the pre-cast panels is generally poor with signs of on-going failure due to corrosion of embedded reinforcement, erosion and break down of the facing mortar and of previous repairs.

An applied mortar skim coat, applied over the majority of the panels is in a deteriorating condition, de-bonding and detaching from the building. The reason behind the mortar skim coat is unclear but may have been applied as a preventative measure to protect the pre-cast to retard its failure and or hide previous repairs.

Attempting to remove the skim coating is problematical where it remains adhered without causing damage to the original surface finish of the cladding panels. Where inspected the coating is up to 2mm thick thinning down to a brush finish.

Due to the poor-quality construction of the pre-cast panels which are potentially at the end of their serviceable life, that are problematical to repair because of the inherent defects and deficiencies in the mortars used. It is recommended to de-risk the masonry and for long-term economic benefit to removing these and replacing with new pre-cast panels constructed with a homogenous wet cast graded mix including non-ferrous reinforcement. Undertaking mortar repairs is not recommended and should only be considered a short term solution and one that will ultimately require an on-going programme of repair, regular potentially disruptive maintenance and a risk to health and safety from failing, detaching masonry.

Facing brickwork appears in reasonable condition with isolated fracturing on the North and East elevations. There pointing appeared to be sound with minimal evidence of it having been historically replaced.



Executive summary

There are more significant fractures and subsidence affecting brickwork on the West elevation. Fractures and subsidence have damaged the fire escape fixings which are no longer providing restraint to the staircase. It is recommended further investigation and structural engineer consultation is carried out to determine the cause and develop an appropriate repair strategy. Further recommendation is to restrict or close off access to the fire escape.

Referring to a previous survey report carried out by Buro Happold carried out at a time when the 3rd floor cornice and cladding was visible.

The BH recommendation was for concrete repairs to the entire length of the 3rd floor cornice and removal of the 3rd floor cladding to be replaced with similar or alternative such as GRC to reduce weight and allow for the introduction of insulation.

Based on the results of the survey it is recommended that the Buro Happold recommendation is applied to the remainder of the pre-cast cladding located on the 2nd , 1st floors and at ground level.

The development of an effective Planned Preventative Maintenance strategy including a 5-10-year cycle of surveys is recommended following completion of the masonry works to maintain the fabric and long-term integrity of external masonry and helping to reduce the frequency and cost of future possible repair.



Introduction

PAYE Stonework were instructed to undertake a vehicle mounted platform survey of existing external masonry at Haringey Civic Centre. The survey was carried out on the 3rd March 2023. The weather was overcast.

This report identifies façade deterioration / defects and comments on potential causes. The report does not provide comment on the structural capacity of masonry. The façade condition survey focuses on the following areas:

- Pre-cast stone cladding panels and built in units
- Deterioration and visible damage of pre-cast
- Previous mortar repairs
- Facing brickwork
- Fracturing of masonry units
- Displacement of masonry

The areas of survey include accessible elevations at the time the survey was undertaken. Within the report photographs have been given a reference ELEVATION-PHOTO#.

The repairs have been given a Risk Rating of Red, Amber, Green with the definitions for each category described in the table.

PRIORITY CODES FOR REPAIRS (1-4)	CONDITION (A-D)
GREEN	Aesthetic defect which affects the visible appearance of the building. Remedial works at the discretion of the design team.
AMBER	Defect has an impact on the buildings ability to shed rainwater and maintain weathertightness . Visible or structural damage which is likely to deteriorate in the next 3-5 years if no action is taken. Remedial works should be programmed as soon as possible.
RED	Defect which has a direct impact to health and safety of building occupants and the public. Defect highly unstable and likely to deteriorate within 1-3 years. Remedial Works are necessary and should be undertaken immediately.



Observations: Record Photographs

North Elevation

A 1mtr section of the leading edge to the pre-cast window head over the door entrance is fractured. The facing mortar has de-bonded potentially allowing moisture to come into contact with embedded reinforcement.

PHOTOS: HCCN01-02

RISK: RED

Displacement of cast head. Apparent movement of masonry, possible de-bonding from backing structure. Recommend further structural engineer consultation.

PHOTOS: HCCN03-04

RISK: AMBER/RED





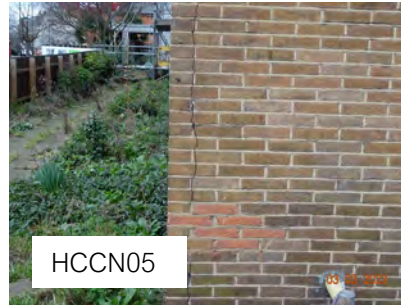
Observations: Record Photographs

North Elevation

Continuous vertical fracture through brickwork. Evidence of previous brick repairs being carried out. Recommend further structural engineer consultation to help verify cause and any inherent on-going defect.

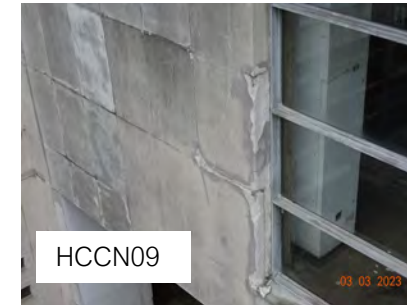
PHOTO: HCCN05

RISK:AMBER/RED



On-going deterioration and failure of pre-cast cladding panels.

Poor, low quality historic repairs have failed, continued corrosion of embedded reinforcement causing damage to masonry.



PHOTOS: HCCN06-12

RISK: RED





Observations: Record Photographs

North Elevation

Continuous vertical fracture through render. Recommend further structural engineer consultation to help verify cause and any inherent on-going defect.

PHOTO: HCCN13

RISK: AMBER/RED



On-going deterioration and failure of pre-cast cladding panels to colonnade.

Continued corrosion of embedded reinforcement causing damage to masonry.

PHOTOS: HCCN06-12

RISK: RED





Observations: Record Photographs

East Elevation

Progressive fracturing of facing brickwork caused by corrosion of embedded metal work. Recommend further structural engineer consultation and intrusive investigation.

PHOTOS: HCCE01-02

RISK: RED



Failure, de-bonding of mortar skim coat. Skim coat applied over the majority of the pre-cast cladding including cast window surrounds.

PHOTOS: HCCE03-05

RISK: RED



Corrosion of embedded reinforcement affecting cast window heads. Cast concrete is poor, low quality. Inconsistent compaction, ungraded mortar allowing for unrestricted migration of moisture.

PHOTOS: HCCE06-07a

RISK: RED





Observations: Record Photographs

East Elevation

Previously repaired continuous horizontal fractures visible across the fascia course. Further hairline fracturing observed during the survey indicating an on-going inherent defect affecting the stability of the cladding.

PHOTOS: HCCE08-10

RISK: RED

Signs of possible movement to cladding panels. Verify condition and suitability of restraint and support fixings.

Applied coating is failing, pre-cast substrate is in a deteriorating condition.

Signs of movement to travertine cladding, fractured plinth. Recommend removal to verify condition and suitability of fixings.

PHOTOS: HCCE11-13

RISK: AMBER/RED

Fractures and minor displacement affecting brickwork.

Numerous redundant metal fixings embedded into brick joints.

Abrasively cleaned brickwork is damaged with visible loss of fire skin. Damaged brickwork may be prone to deteriorate over time due to loss of protective fire skin.

PHOTOS: HCCE14-16

RISK: AMBER/RED

Recommend further structural engineer consultation and intrusive investigation of the fractures, repairs, movement, restraint fixings and backing structure.





Observations: Record Photographs

South Elevation

Failure, de-bonding of mortar skim coat. Skim coat applied over the majority of the pre-cast cladding. Signs of possible movement to cladding panels. Verify condition and suitability of restraint and support fixings.

PHOTOS: HCCS01-03a

RISK: RED

Cast copings appear to be in reasonable condition. Isolated fracture through fascia. Failed previous repair. Recommend removal and repair of fractured unit.

PHOTOS: HCCS04-05 RISK:

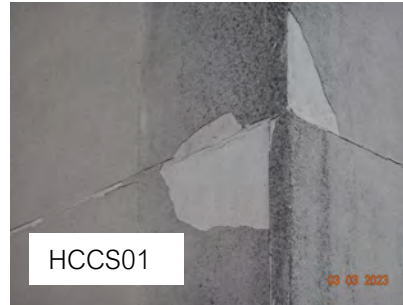
AMBER/RED

Visible displacement of masonry. Joints are open and cladding has moved of the building line. Affected pre-cast is within the location of significant brick fracturing and subsidence.

Incomplete previous repairs, exposed reinforcement, failing skim coat.

PHOTOS: HCCS06-07a

RISK: RED





Observations: Record Photographs

South Elevation

Numerous redundant fixing holes drilled through pre-cast cladding.
Eroded, deteriorating York stone threshold.

PHOTOS: HCCS08, 09

RISK: GREEN/AMBER

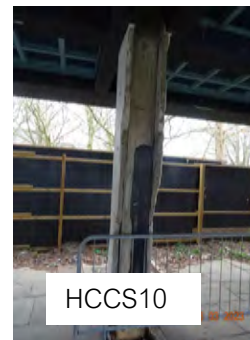


Significant damaged caused to column cladding. No attempt made to remove cladding carefully for salvage and re-use.

Exposed fixings. Structural engineer to inspect and verify suitability to provide on-going long-term restraint and support.

PHOTOS: HCCS10-13

RISK: RED





Observations: Record Photographs

West Elevation

On-going deterioration and failure of pre-cast cladding panels at 2nd and 1st floor level.

Poor, low quality historic repairs have failed, continued corrosion of embedded reinforcement causing damage to masonry



PHOTOS: HCCW01-04

RISK: RED

Fractured, damaged render. Recommend further investigation into cause of fracturing. Undertake appropriate repairs.

Signs of possible movement to cladding panels. Verify condition and suitability of restraint and support fixings.

PHOTOS: HCCW04a, 04b

RISK: AMBER/RED





Observations: Record Photographs

West Elevation

Progressive failure of pre-cast copings. Continuous horizontal fracture along the leading edge.

Masonry has failed, detached and broken away. Lack of protection to adjacent cladding panels may be contributing to failure of masonry.

PHOTOS: HCCW06-08

RISK: RED

Incomplete repairs. Damage to cladding panel exposes the make up of the unit, poor-quality mortars and mix ratios and insufficient cover to the reinforcement.

Failing previous mortar repairs. Damaged window jamb caused by corroded reinforcement.

PHOTOS: HCCW08-13

RISK: RED





Observations: Record Photographs

West Elevation

Failure of skim coat, previous mortar repairs. Incomplete previous repairs, exposed reinforcement.

PHOTOS: HCCW14

RISK: RED



Notable failure of pre-cast around punched windows. Exposed corroding reinforcement, failing previous mortar repairs.

PHOTOS: HCCW15-16

RISK: RED





Observations: Record Photographs

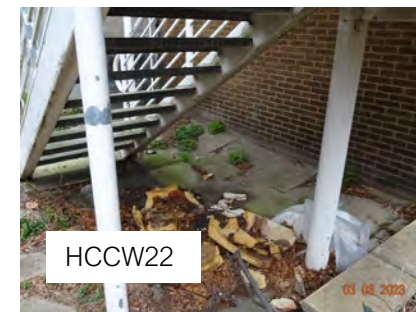
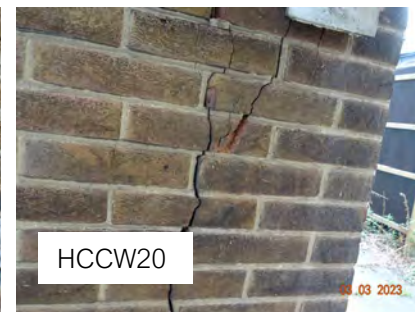
West Elevation

Significant fracturing through brickwork and visible subsidence that has caused the façade to drop.

Restraint fixings securing the fire escape have failed and pulled out of the brickwork.

The fire escape is out of level. Recommend closure of the staircase subject to a detailed assessment of its stability.

Recommend further structural engineer consultation and intrusive investigations to help determine the cause and develop an appropriate repair strategy.



PHOTOS: HCCW17-22

RISK: RED



Recommendations:

Undertake further investigation and structural engineer consultation of fractured and displaced masonry observed on the West elevation to verify the cause and if there is an inherent on-going defect. Develop an appropriate repair strategy to maintain the structural integrity of the masonry facades.

Recommend further investigation to fractures and displacement on the North and East elevation affecting pre-cast masonry and brickwork.

Investigate existing pre-cast restraint and support fixings for on-going long-term performance and suitability. As a minimum carry out the following tests on existing backing structures to determine future suitability for post drilling and fixing new replacement cladding.

1. Pull out test
2. Ferro scan
3. Testing for carbonation
4. Testing for chloride ion content

It is not recommended to undertake mortar repairs to the panels. Previous mortar repairs have failed and detached from the building. Use of mortar to repair panels does not provide any structural support

Recommend investigating alternative cladding for replacement of all existing pre-cast to de-risk the facades and provide a long-term economic solution with added benefit of the potential to include insulating properties.

The development of an effective Planned Preventative Maintenance strategy including a 5-10-year cycle of surveys is recommended following completion of the masonry works to maintain the fabric and long-term integrity of external masonry and helping to reduce the frequency and cost of future possible repair.



Appendix A: Schedule of Works

To follow

PAYE Stonework & Restoration Ltd

Haringey Civic Centre

29.03.2023

External masonry facade repair budgets

DM-23007-01



Item	Photo ref:	Schedule of works	Qty	Unit	Rate	£
		Pricing Notes - Replacement pre-cast to be maximum 80mm thick - Quantities are Provisional, subject to structural engineer consultation, re-survey from scaffold - Preliminary items such as scaffold access, hoisting, welfare etc to be provided by others - Removal and disposal of existing pre-cast by others - Preparation of backing structures by others - Excludes insulation and drip trays - Excludes replacement or repair of pre-cast to cornice and 3rd floor The Works				
1.0	HCCE03,04,HCC S01,03	RED. Supply and fix new pre-cast Portland ashlar restrained with stainless steel fixings drilled into existing backing structure.	210	m2	830.00	174,300.00
1.1	HCCN07,09,HCC E08,HCCW01-04	RED. Supply and fix new pre-cast Portland L shaped units restrained with stainless steel fixings drilled into existing backing structure.	344	Nr	492.00	169,248.00
1.2	HCCN11,HCCW05-07	RED. Supply and fix new pre-cast Portland copings	200	m	240.00	48,000.00
1.3	HCCN14-15,HCC S10-13	RED. Supply and fix new pre-cast column cladding restrained with stainless steel fixings drilled into existing backing structure.	10	m2	830.00	8,300.00
1.4	HCCW15-16	RED. Supply and fix new external pre-cast punched windows		item		18,000.00
1.5	HCCE05-07a	RED. Cut back loose, friable cast masonry to window surrounds. Drill in stainless steel reinforcement as required. Reform profiles using a compatible mortar.		item		21,100.00
1.6	HCCN05,HCC E01,HCC W17-20	RED. Cut out fractured facing brickwork. Supply and fix new bricks. Repairs to backing structure, foundations by others		item		33,200.00
1.7	HCCE13	AMBER/RED. Remove, salvage and re-fix loose, displaced travertine marble cladding		item		3,000.00
1.8	HCCN13,HCCW04a	AMBER/RED. Cut back loose, de-bonded render and re-render maximum 30mm thick using a compatible mortar		item		11,210.00
2.00		Preliminaries		item		85,112.00
						571,470.00



Appendix B: Annotated Elevation Drawings

Excluded. Not visible at the time of the survey

HCCN01-02 Failing pre-cast window head. Continuous horizontal fracture.

HCCN06-12 Failed previous mortar repairs. Failure of mortar skim coat. Pre-cast cladding in an on-going deteriorating condition.

HCCN13 Fractured, damaged render. Recommend a tap test survey and further investigation into cause of fracturing. Undertake appropriate repairs.

HCCN05 Continuous vertical fracture through brickwork. Evidence of previous brick repairs being carried out.

Recommend further structural engineer consultation to help verify cause and any inherent on-going defect.

HCCN03-04 Displacement of cast head. Apparent movement of masonry, possible de-bonding from backing structure.

Recommend further structural engineer consultation.

HCCN14-15 Damaged column cladding. Embedded reinforcement corroded.

Recommend Structural engineer to inspect and verify suitability to provide on-going long-term restraint and support.

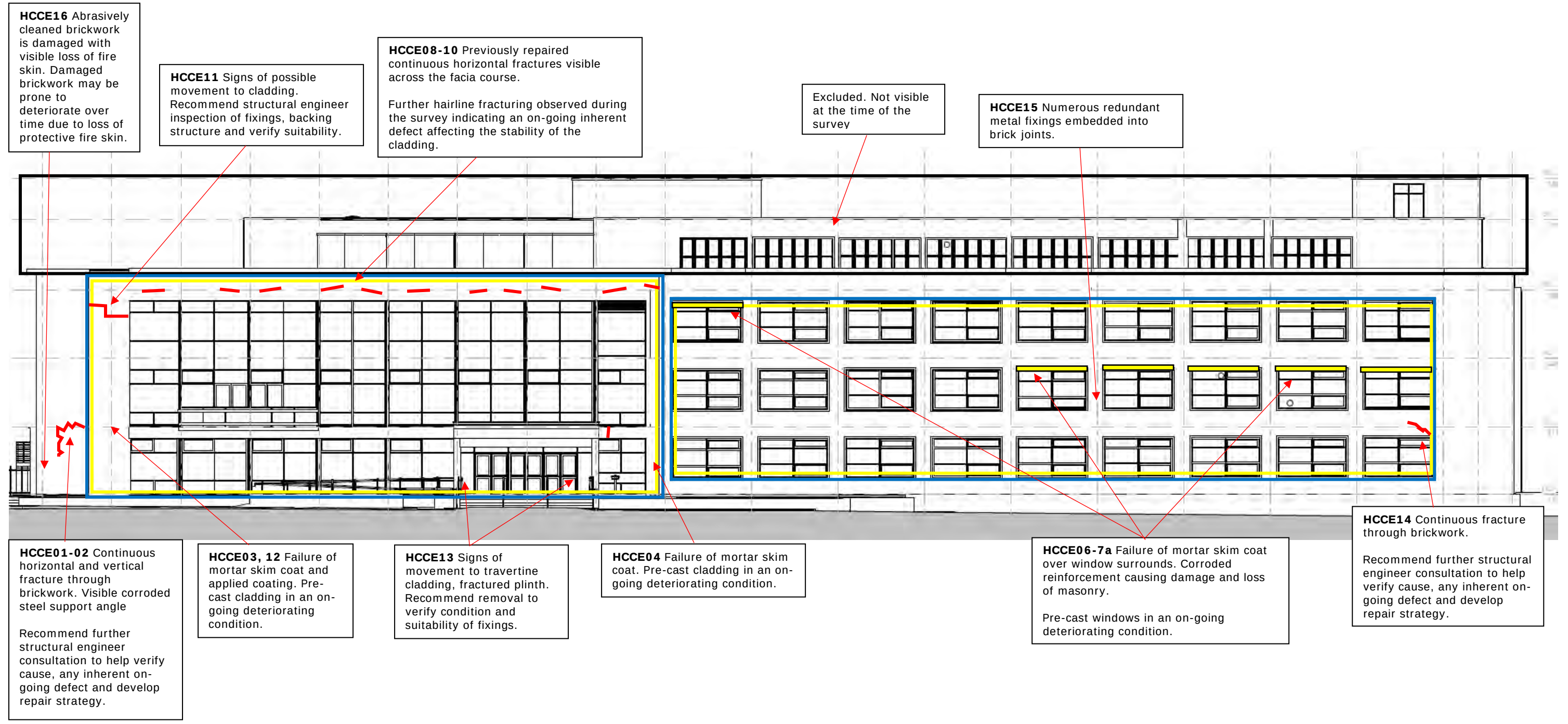
- | | | | |
|---|---|---|-----------------------------|
|  | - FAILING SKIM COAT |  | - FRACTURE / MOVEMENT |
|  | - INCOMPLETE REPAIR EXPOSED REINFORCEMENT |  | - FRACTURED, DAMAGED RENDER |
|  | - FAILING PRE-CAST CLADDING |  | - FAILING MORTAR REPAIR |

HARINGEY CIVIC CENTRE

NORTH ELEVATION
MASONRY FAÇADE CONDITION SURVEY

DWG: DM/23007/001 03/2023





HCCE16 Abrasively cleaned brickwork is damaged with visible loss of fire skin. Damaged brickwork may be prone to deteriorate over time due to loss of protective fire skin.

HCCE11 Signs of possible movement to cladding. Recommend structural engineer inspection of fixings, backing structure and verify suitability.

HCCE08-10 Previously repaired continuous horizontal fractures visible across the fascia course.

Further hairline fracturing observed during the survey indicating an on-going inherent defect affecting the stability of the cladding.

Excluded. Not visible at the time of the survey

HCCE15 Numerous redundant metal fixings embedded into brick joints.

HCCE01-02 Continuous horizontal and vertical fracture through brickwork. Visible corroded steel support angle

Recommend further structural engineer consultation to help verify cause, any inherent on-going defect and develop repair strategy.

HCCE03, 12 Failure of mortar skim coat and applied coating. Pre-cast cladding in an on-going deteriorating condition.

HCCE13 Signs of movement to travertine cladding, fractured plinth. Recommend removal to verify condition and suitability of fixings.

HCCE04 Failure of mortar skim coat. Pre-cast cladding in an on-going deteriorating condition.

HCCE06-7a Failure of mortar skim coat over window surrounds. Corroded reinforcement causing damage and loss of masonry.

Pre-cast windows in an on-going deteriorating condition.

HCCE14 Continuous fracture through brickwork.

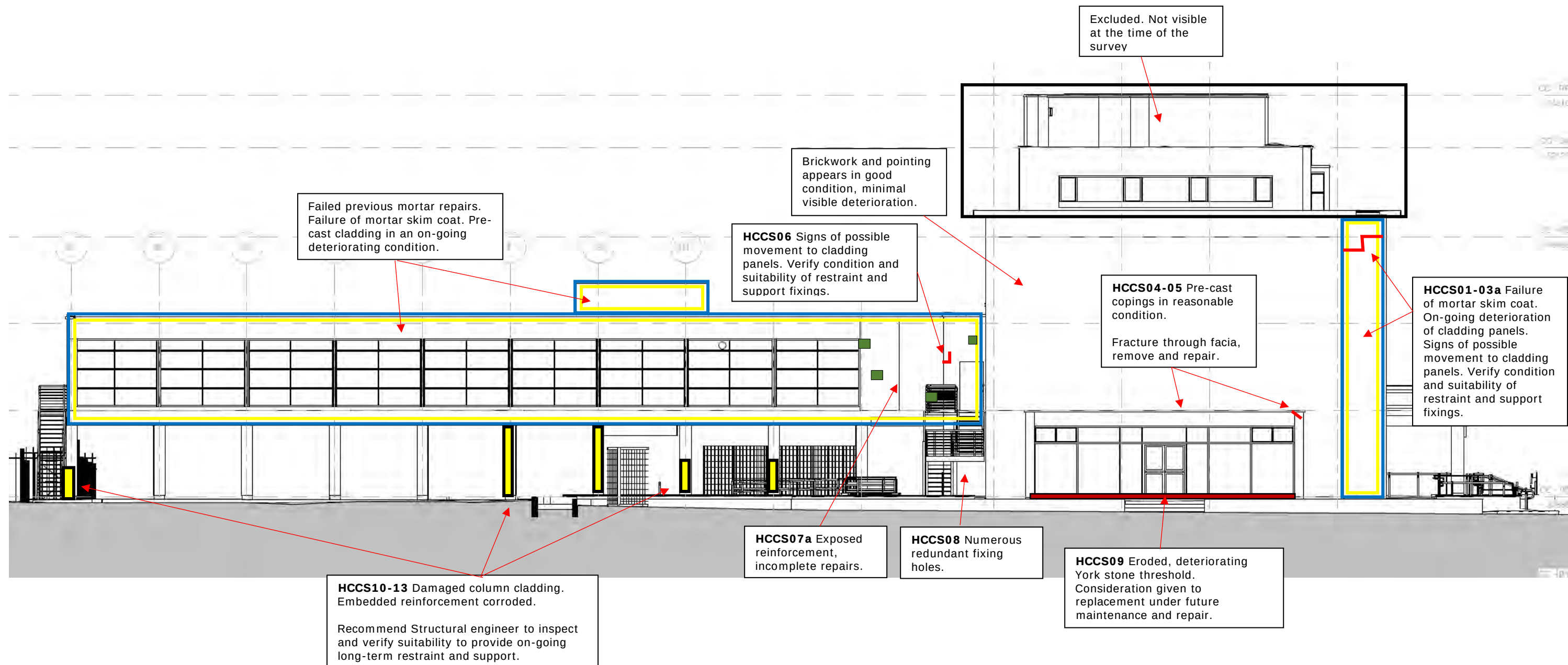
Recommend further structural engineer consultation to help verify cause, any inherent on-going defect and develop repair strategy.

	-	FAILING SKIM COAT		-	FRACTURE / MOVEMENT
	-	INCOMPLETE REPAIR EXPOSED REINFORCEMENT		-	FRACTURED, DAMAGED RENDER
	-	FAILING PRE-CAST / CLADDING		-	FAILING MORTAR REPAIR

HARINGEY CIVIC CENTRE

EAST ELEVATION
MASONRY FAÇADE CONDITION SURVEY

DWG: DM/23007/002 03/2023



	- FAILING SKIM COAT		- FRACTURE / MOVEMENT		- ERODED, DETERIORATING STONWORK
	- INCOMPLETE REPAIR EXPOSED REINFORCEMENT		- FRACTURED, DAMAGED RENDER		
	- FAILING PRE-CAST CLADDING		- FAILING MORTAR REPAIR		

HARINGEY CIVIC CENTRE

SOUTH ELEVATION MASONRY FAÇADE CONDITION SURVEY

DWG: DM/23007/003 03/2023



HCCW01-04 Failure of mortar skim coat. On-going deterioration of cladding panels.

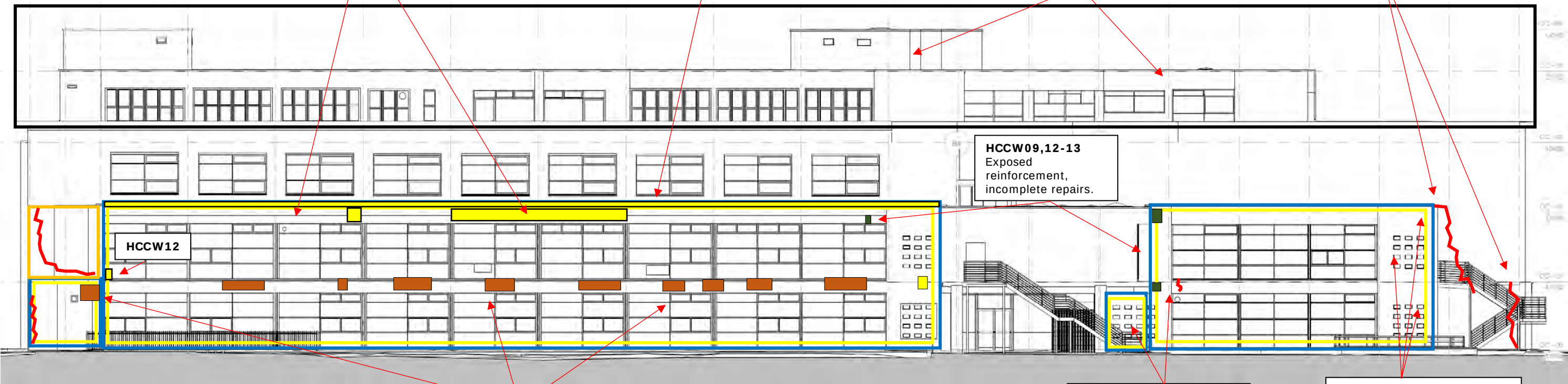
HCCW05-07 Progressive failure of pre-cast copings. Continuous horizontal fracture to leading edge.

Excluded. Not visible at the time of the survey

HCCW17-22 Significant fracturing through brickwork and visible subsidence that has caused the façade to drop.

Restraint fixings securing the fire escape have failed and pulled out of the brickwork. The fire escape is out of level. Recommend closure of the staircase subject to a detailed assessment of its stability.

Recommend further structural engineer consultation and intrusive investigations to help determine the cause and develop an appropriate repair strategy.



HCCW04a, 04b Fractured, damaged render. Recommend further investigation into cause of fracturing. Undertake appropriate repairs.

Signs of possible movement to cladding panels. Verify condition and suitability of restraint and support fixings.

HCCW08,10-11 Failed previous mortar repairs.

HCCW14 Failure of mortar skim coat. On-going deterioration, fracturing of cladding panels.

HCCW15-16 Notable failure of pre-cast punched windows. Failing previous mortar repairs, corroding reinforcement. Displacement of masonry.

- | | | | | | |
|---|---|---|---|---|---------------------------|
|  | - | FAILING SKIM COAT |  | - | FRACTURE / MOVEMENT |
|  | - | INCOMPLETE REPAIR EXPOSED REINFORCEMENT |  | - | FRACTURED, DAMAGED RENDER |
|  | - | FAILING PRE-CAST CLADDING |  | - | FAILING MORTAR REPAIR |

HARINGEY CIVIC CENTRE

WEST ELEVATION
MASONRY FAÇADE CONDITION SURVEY

DWG: DM/23007/004 03/2023





Get in touch

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