ARCH ASSOCIATES

STRUCTURAL CONDITION REPORT – BUILDING 3, FORMER NOVARTIS SITE, HORSHAM

23/10/2025

CONTENTS

ISSUE		A	B	C
Issued By	C Hendry			
Date	23.10.2025			
Purpose	Information			
Approved By	CH			

1. INTRODUCTION

1.1 Arch Associates Limited has been commissioned by Lovell Southern to prepare a structural conditions and remediation report for Building 3 at the former Novartis site in Parsonage Road, Horsham.

1.2 A planning application is currently lodged for redevelopment of the former pharmaceuticals site, which involves retention of the original 1930s portion of the laboratory building at the centre of the site for conversion into residential apartments.

1.3 The more modern portion of the building to the rear of the 1930s section is planned to be demolished and replaced with new apartment blocks.

1.4 This report aims to review both the historic testing of the building from 2018 and the new repeat testing from 2025 to establish the condition of the structure and to make recommendations for structural remedial works should the building be retained for conversion.

2. PREVIOUS INVESTIGATIONS

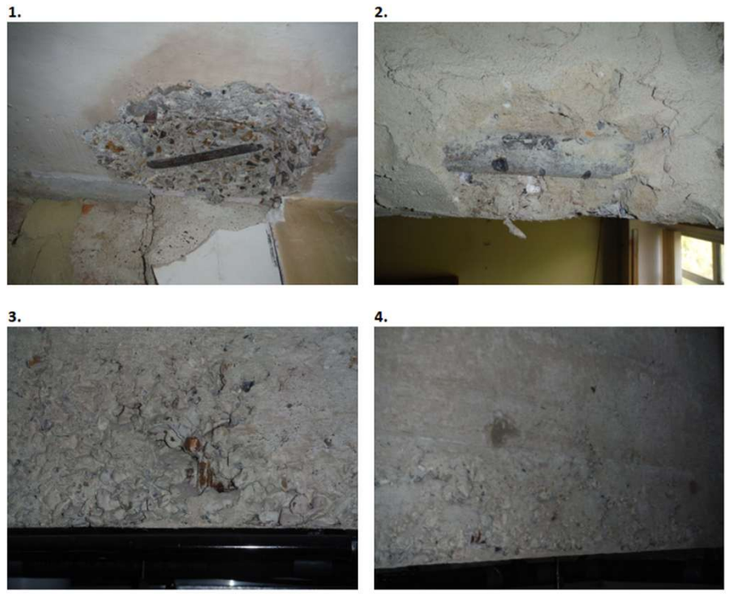
2.1 A series of structural inspections and surveys previously have been undertaken to inform the remedial actions required. A visual, non-intrusive inspection of the buildings was undertaken by Hampshire County Council in October 2018 and a separate intrusive investigation was carried out by Constructive Evaluation on behalf of West Sussex County Council, also in 2018.

2.2 The main building structure is a reinforced concrete frame with an external shell of reinforced concrete walls. The sizing of the slab, column and beam elements appears to be appropriate for the building configuration. The quality of the workmanship at the time of construction was extremely poor with poor compaction of the concrete and gross voiding observed in several beams, column and wall elements. Repairs to seal the voiding may be required where the reinforcing steel is liable to be exposed to moisture.

2.3 The findings from the reports are summarised as follows:

- Honeycombing and spalling evident in several slabs, beams, walls and columns
- Low levels of chloride but higher levels of carbonation are evident in the concrete
- elements
- Signs of corrosion on exposed reinforcement
- Minor cracks in some of the concrete elements observed but no signs of significant movement
- Water ingress evident in the basement
- Deterioration of wall finishes due to moisture ingress on ground and basement levels
- Localised cracks in light well retaining walls
- Corrosion of external façade steel wall ties
- Corrosion of external façade steel lintels
- Cracking of external façade brickwork due to expansion of corroding walls ties and lintels
- 13 No. compressive strength tests were undertaken and the results ranged from 25.5N/mm^2 to 38.8N/mm^2

2.4 The full Hampshire County Council Report can be found in Appendix A of this document



1. Exposed bar to soffit of slab.

2. Exposed 32mm bar to beam.

3. Exposed beam and honeycombing to beam.

4. further honeycombing to beam.

5. Exposed bar to beam.

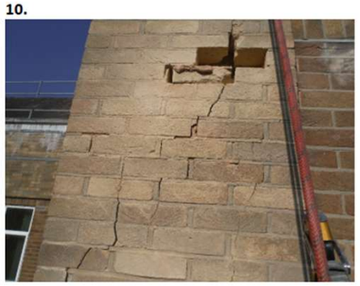
6. Exposed bars to beam

7. Corroded wall tie channel.

8. Further corroded channel.

9.

10.



11.

12.

9. Corroded wall tie.

10. Cracking to brick skin.

11. Delaminating brick face due to corroded ties.

12. Corroded lintel over window.

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15.

16.

17.

18.

13. View of corroded bracket

14. Corroded bracket in internal column.

15. Cracking to internal column.

16. Removed coping stone.

17. Spalling to lintel.

18. Flooded basement.

3. 2025 INVESTIGATIONS

2.1 Constructive Evaluation have returned to the building in 2025 to take similar samples to those taken in 2018 to gain an understanding of whether the structure has deteriorated in the intervening period. In addition, intrusive coring and testing of the foundations was undertaken as this was omitted from previous investigations.

2.2 The findings from the 2025 investigations are summarised as follows:

- Targeted concrete cores were taken to investigate compressive strength in areas that appeared to have suffered from degradation. The results are given below. The results confirm that there are areas of concrete with much lower compressive strength than previously established in the 2018 investigations

Location	Core ID	Core Diameter	Compressive Strength (N/mm2)
Ground Floor centre wall	C04	99mm	26.1
Ground floor wing wall	C06	74mm	40.0
Second Floor column	CO7	99mm	18.1
Second Floor centre wall	CO8	74mm	37.9
First Floor column	CO9	73mm	11.8
First Floor wall	CO10	99mm	17.7
Ground Floor beam	CO11	73mm	18.2
Ground Floor beam	CO12	74mm	23.3

Green – Acceptable

- **≥ 25 MPa**
- Good concrete quality, typical for structural elements in buildings.

Orange – Moderate concern

- **20 – 25 MPa**
- Slightly lower than modern design grades but still acceptable for many older structures.

Red – Poor concrete quality / concern

- **< 20 MPa**
- Below typical design or code-based strength for structural safety – possible structural or durability concerns.

2.3 Test holes were drilled with phenolphthalein solution to visually indicate the carbonation front, which can compromise the protective passivation layer around the steel. The table below makes a comparison between the carbonation depth and the embedded reinforcement depth. The results below demonstrate that the carbonation has reached well into the reinforcement zone.

2.4 Chloride ion testing measures the concentration of chloride salts within the concrete, which can accelerate corrosion if present in significant amounts. The 2025 testing showed levels within the acceptable threshold, which was anticipated as this was also the findings in the 2018 investigation and chloride-ion levels are not likely to have changed in the interim period.

Location	Element	Cover to reinforcement	Carbonation	Difference
Ground Floor	Wall	38mm	Fully Carbonated	0
Ground Floor	Column	40mm	23mm	17mm
Ground Floor	Beam	35mm	Fully Carbonated	0
Ground Floor	Wall	23mm	Fully Carbonated	0
Ground Floor	Wall	20mm	Fully Carbonated	0
Ground Floor	Wall	36mm	17mm	9mm
Ground Floor	Beam	41mm	Fully Carbonated	0
Second Floor	Beam	34mm	Fully Carbonated	0
Second Floor	Wall	23mm	Fully Carbonated	0
Second Floor	Beam	33mm	Fully Carbonated	0
First Floor	Beam	17mm	15mm	2mm
First Floor	Beam	31mm	Fully Carbonated	0
First Floor	Beam	29mm	18mm	11mm
First Floor	Column	24mm	15mm	9mm

Green – Minimal carbonation

- Phenolphthalein test shows **no colour change** or concrete remains **pink/purple throughout**.
- Indicates that the carbonation depth is significantly **less than the depth of cover**, suggesting that the reinforcement remains well protected.

Orange – Moderate carbonation

- Partial colour change observed in the phenolphthalein test, with **carbonation depth encroaching into the cover zone** but still providing some protection.
- Acceptable condition but should be **monitored or considered for maintenance planning**.

Red – Fully or high risk of carbonation

- Concrete **does not turn pink/purple** during the phenolphthalein test, or carbonation depth has fully reached or exceeded the cover depth.
- Suggests **high risk of reinforcement corrosion** due to loss of alkalinity at reinforcement level.








Images above taken from Constructive Evaluation report ref: 25.1774 July 2025

4. CONCLUSION

4.1 Based on both visual inspection and testing data, the structure appears to exhibit significant localised deterioration, particularly to the underside of the floor slabs and exposed beam soffits.

4.2 Widespread carbonation and areas of low compressive strength suggest the concrete has experienced long-term environmental degradation, likely accelerated by inadequate cover and poor original construction practices (e.g., honeycombing and large aggregate variation). While chloride-induced corrosion is not a current concern, the presence of fully carbonated concrete across much of the structure presents an elevated risk of future reinforcement corrosion and associated structural weakening.

4.3 Despite these findings, certain areas—particularly central and ground floor wall elements—exhibited good core integrity and adequate strength, indicating that the building retains some structurally sound components.

4.4 The following defects would need addressing to retain the building and convert it to residential use with the appropriate design life:

Honeycombing of concrete
Proprietary concrete repair systems will need to be specified to reinstate the voided concrete and restore the necessary reinforcement cover. Protective coatings and corrosion inhibitors should be applied to reinforcement.

Carbonation of concrete
Guidance from the Building Research Establishment's Digest 444 and Concrete Society's Technical Report Number 38 will need to be followed for carbonation repairs. This can include removal of carbonated concrete, treatment of rebar and then reinstatement of new surface concrete to provide suitable concrete cover

Lack of structural fire resistance due to exposed rebar/lack of suitable concrete cover
Proprietary products will be applied to reinstate the appropriate fire protection of the concrete elements.

Corroded wall ties and lintels within external brickwork
External brickwork cladding should be removed to allow removal of the wall ties and lintels to prevent further damage to the structure and to prevent potential collapse of the masonry outer leaf. New remedial stainless steel wall ties and lintels will be required.

Cracking within external brickwork
It is likely that the entire outer leaf brickwork may need to be removed to remediate the corroded wall ties and lintels. Consequently, the cracking will be remediated when the brickwork is rebuilt. However, in areas where brickwork may not be removed and where cracks are presents, these will need to be repaired using forms or crack injection and stitching.

Basement water ingress
The basement of the building is now completely flooded, and this will need to be pumped out to allow a waterproofing system to be retrofitted. Suitable measures for draining of water should be provided and maintenance strategies will also be required to ensure the waterproofing system remains effective.

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REPORT FOLLOWING

Structural Investigation

At

The Former Novartis Site, Horsham

PROJECT REFERENCE: 25.1774

July 2025

constructiveevaluation

site investigation • building pathology

Structural Investigation.

By:

Constructive Evaluation Ltd

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Email: info@celtduk.com

Report Author(s)		
Sam Preller **(Lead Building Surveyor)**	Signature: [redacted]	Date: 30/07/2025

	Version 1	Version 2	Version 3
History			
Issued to			
Date			

Foreword

This report has been prepared by Constructive Evaluation Limited (CE) with all reasonable skill, care and diligence within the terms of the contract with the Client and should not be used in a different context. Unless specifically assigned or transferred within the terms of the agreement, CE asserts and retains all Copyright, and other intellectual Property Rights in and over the Report and its contents.

Introduction

Constructive Evaluation Ltd was instructed by Lovell Partnership Ltd to undertake a structural investigation on the front section of the former Novartis site building consisting of one centre staircase building and two side wings. Site was attended by myself accompanied by two technicians on Wednesday 2nd July & Thursday 3rd July. Site was accessed via a key safe at the main gate.

Scope of Works

The purpose of this visit was to undertake a follow-up assessment of the building, having previously attended in 2016 when initial samples were taken for testing. The objective was to establish any notable changes in the condition of the structure since the original survey and to collect additional comparative samples. As part of this scope, concrete cores were extracted for compressive strength analysis, dust samples were taken for chloride ion content testing, and in-situ carbonation depth testing was carried out. A photographic survey was also undertaken to document the current condition of the exposed structural elements, providing a visual reference for comparison against the previous survey findings.

Limitations

Basement area contained asbestos stickers therefore, any intrusive works were halted down there until a asbestos register can be obtained.

Visual Inspection

The building comprises five levels, including a basement, ground floor, first floor, second floor, and roof space. It is arranged with a large central core housing the main stairwell, flanked by two wings that extend around a central courtyard or green space, forming a rectangular footprint. The focus of our inspection was the front central section of the building and its two adjoining wings.

During the original site visit in 2016, the building remained fully intact with finishes in place. However, at the time of this recent inspection, the building had been completely stripped back to its structural frame, providing clear access and visibility to all primary structural elements. The structure is formed of reinforced in-situ cast concrete columns and beams, supporting what are understood to be in-situ cast concrete slabs.

The overall visual condition of the exposed structural elements was notably poor. Severe carbonation and significant corrosion of the embedded reinforcement were observed, particularly to the underside of the floor slabs. In several areas, the corrosion had advanced to the extent that concrete had spalled, leaving reinforcement bars fully exposed. This level of deterioration is likely exacerbated by minimal concrete cover to the reinforcement.

Additionally, the columns and beams exhibited extremely poor casting quality, with extensive voiding and honeycombing visible along the edges and corners—indicative of inadequate vibration and compaction during the original concrete pour. Despite these external defects, core samples taken from various locations revealed that the internal sections of the columns and beams appeared generally sound, with minimal voiding observed. However, the aggregate size and quality were inconsistent, ranging from excessively large to unusually fine aggregates in different areas.

Cover / Carbonation

Cover carbonation testing determines the depth at which carbon dioxide has penetrated the concrete, reducing its alkalinity and thus increasing the potential for corrosion of the reinforcement. We used phenolphthalein solution to visually indicate the carbonation front, which can compromise the protective passivation layer around the steel. Using a cover meter to establish embedded reinforcement depth we are then able to make a comparison between the carbonation depth and the embedded reinforcement depth.

Green – Minimal carbonation

- Phenolphthalein test shows **no colour change** or concrete remains **pink/purple throughout**.
- Indicates that the carbonation depth is significantly **less than the depth of cover**, suggesting that the reinforcement remains well protected.

Orange – Moderate carbonation

- Partial colour change observed in the phenolphthalein test, with **carbonation depth encroaching into the cover zone** but still providing some protection.
- Acceptable condition but should be **monitored or considered for maintenance planning**.

Red – Fully or high risk of carbonation

- Concrete **does not turn pink/purple** during the phenolphthalein test, or carbonation depth has fully reached or exceeded the cover depth.
- Suggests **high risk of reinforcement corrosion** due to loss of alkalinity at reinforcement level.

Location	Element	Cover to reinforcement	Carbonation	Difference
Ground Floor	Wall	38mm	Fully Carbonated	0
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Ground Floor	Wall	23mm	Fully Carbonated	0
Ground Floor	Wall	20mm	Fully Carbonated	0
Ground Floor	Wall	36mm	17mm	9mm
Ground Floor	Beam	41mm	Fully Carbonated	0
Second Floor	Beam	34mm	Fully Carbonated	0
Second Floor	Wall	23mm	Fully Carbonated	0
Second Floor	Beam	33mm	Fully Carbonated	0
First Floor	Beam	17mm	15mm	2mm
First Floor	Beam	31mm	Fully Carbonated	0
First Floor	Beam	29mm	18mm	11mm
First Floor	Column	24mm	15mm	9mm

Chloride Ion Testing

Chloride ion testing measures the concentration of chloride salts within the concrete, which can accelerate corrosion if present in significant amounts. We removed concrete powder samples by drilling into the balconies and sent them to a UKAS-accredited laboratory for quantitative chloride analysis.

Green – Within acceptable threshold (0 – 0.15 % by weight of cement)

- Chloride content is **low and within standard acceptable limits**, indicating minimal risk to the reinforcement.

Orange – Potential concern for corrosion (0.15 – 0.4 % by weight of cement)

- Chloride content is **above ideal but below the typical corrosion threshold**.
- Suggests a **moderate risk** of corrosion, which may require monitoring or preventive measures.

Red – High likelihood of corrosion (0.4%+ by weight of cement)

- Chloride content is **above the generally accepted corrosion threshold**, indicating **high risk of reinforcement corrosion** and likely requiring remedial action.

Sample number	Chloride by mass of sample (%)	Chloride by mass of cement (%)
DS-03	<0.003	<0.02
DS-06	<0.003	<0.02
DS-09	<0.003	<0.02
DS-10	<0.003	<0.02
DS-11	<0.003	<0.02
DS-13	<0.003	<0.02

Compressive Strength Analysis

Compressive strength analysis determines the ability of concrete to withstand axial loads without failure. To obtain samples for testing, we use a diamond coring rig to extract cylindrical cores—typically 75mm or 100mm in diameter—from the concrete element. These cores are then sent to a UKAS-accredited laboratory for compressive strength testing, ensuring accurate and certified results.

Green – Acceptable

- **≥ 25 MPa**
- Good concrete quality, typical for structural elements in buildings.

Orange – Moderate concern

- **20 – 25 MPa**
- Slightly lower than modern design grades but still acceptable for many older structures.

Red – Poor concrete quality / concern

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Location	Core ID	Core Diameter	Compressive Strength (N/mm2)
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Ground Floor beam	CO12	74mm	23.3

Result Interpretation

The results of the laboratory testing provide a mixed assessment of the structural integrity of the building. Chloride ion levels were found to be negligible across all tested samples, remaining well below the accepted corrosion threshold (<0.02% by mass of cement), indicating a low risk of chloride-induced corrosion. However, carbonation testing revealed that a significant number of elements, including beams and walls at all levels, were fully carbonated, with the carbonation front reaching or exceeding the depth of reinforcement cover. This suggests a high risk of passive layer breakdown and reinforcement corrosion in these areas.

Compressive strength results showed varied outcomes: while some cores achieved satisfactory strengths (e.g., 40.0 MPa in Core C06 and 37.9 MPa in Core C08), several samples—particularly those from columns and beams on the first and second floors—showed substandard performance (e.g., 11.8 MPa in Core C09 and 17.7 MPa in Core C10), falling below modern structural expectations. These weaker areas may be indicative of long-term degradation, poor original compaction, or reduced cement content. Despite this, no evidence of imminent failure was observed.

Conclusion

Based on both visual inspection and testing data, the structure appears to exhibit significant localised deterioration, particularly to the underside of the floor slabs and exposed beam soffits. Widespread carbonation and areas of low compressive strength suggest the concrete has experienced long-term environmental degradation, likely accelerated by inadequate cover and poor original construction practices (e.g., honeycombing and large aggregate variation). While chloride-induced corrosion is not a current concern, the presence of fully carbonated concrete across much of the structure presents an elevated risk of future reinforcement corrosion and associated structural weakening.

Despite these findings, certain areas—particularly central and ground floor wall elements—exhibited good core integrity and adequate strength, indicating that the building retains some structurally sound components. Any future redevelopment or reuse of the structure should account for the extensive remedial work likely required to address carbonation, low-strength zones, and deteriorated concrete quality, particularly in suspended elements. We recommend a more detailed structural assessment if retention of the building is being considered.

Appendix A

Photographic Evidence

Photographic Record

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Photographic Record

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Photographic Record

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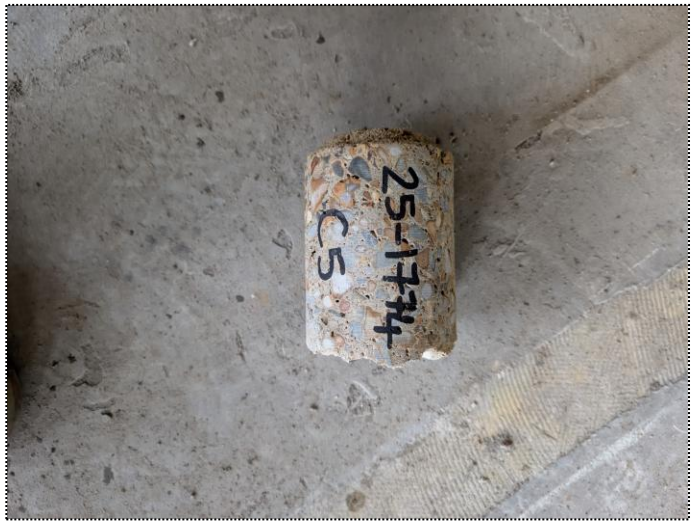

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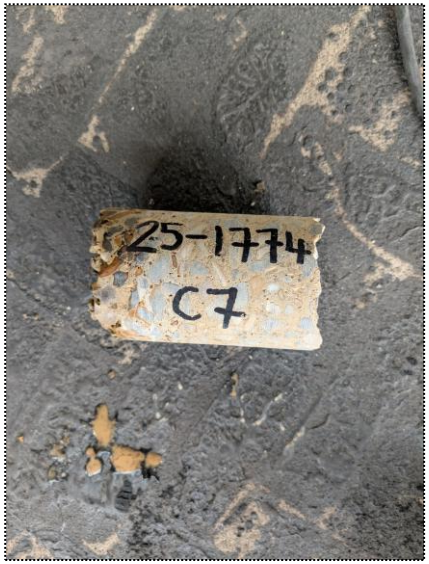

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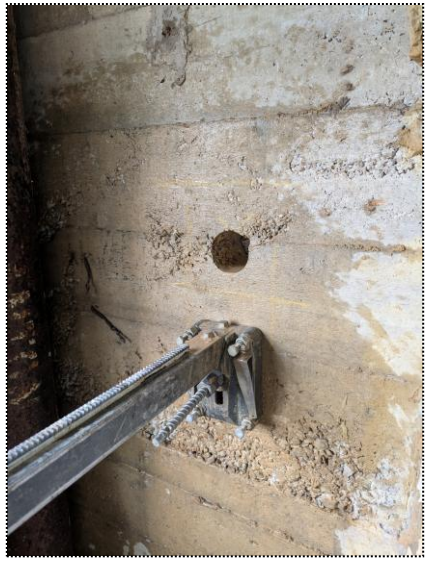

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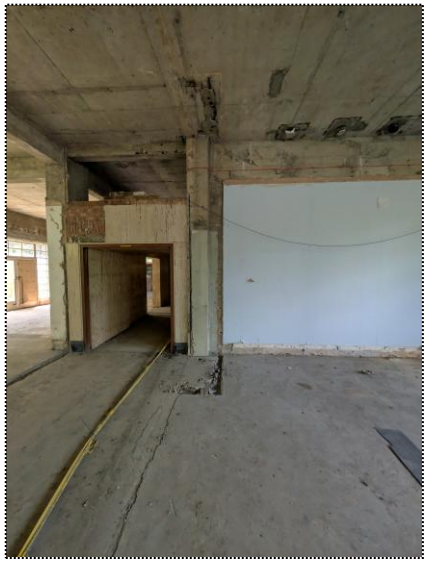

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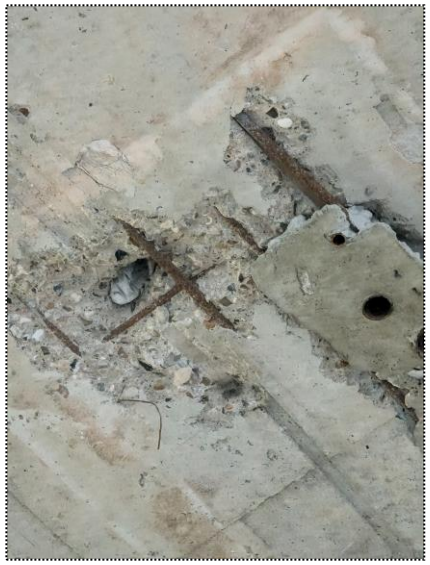

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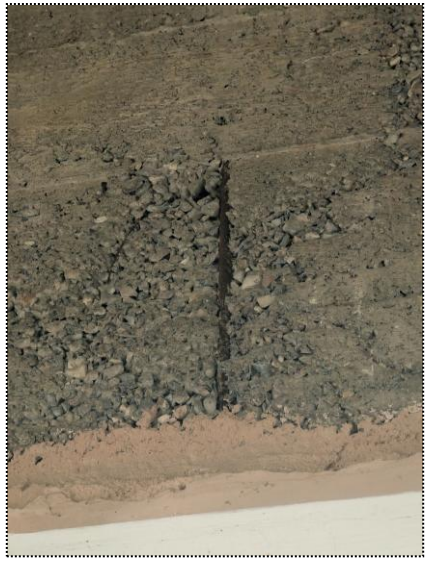

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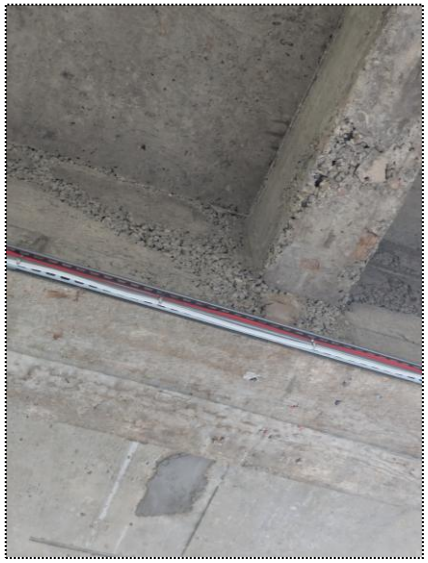

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Appendix B

Laboratory Results

Testing & Consultancy Services Ltd

1303

126a High Street
Old Woking
Surrey
GU21 4QN
01483 750074
www.tcstesting.co.uk

TEST REPORT

Concrete Core Commpressive Strength

Customer

Constructive Evaluation Ltd

Units 15 & 16, Ford Lane Business Park
Ford
Arundel
Chichester
BN18 0UZ

Site

Formar Novartis Site, Horsham

Report No
25/0903 to 25/0910

Testing & Consultancy Services Ltd

1303

126a High Street
Old Woking
Surrey
GU21 4QN
01483 750074
www.tcstesting.co.uk

COMPRESSIVE STRENGTH AND DENSITY OF CORES

BS EN 12504-1:2019, BS EN 12390-3:2019 and BS EN 12390-7:2019

TCSL Reference			25/0903	25/0904
Site Mark/Client Reference			C04	C06
Date Received at Laboratory			17.07.2025	17.07.2025
Details	- Location of Concrete in the Structure		not supplied	not supplied
	- Date of Coring		not supplied	not supplied
	- Driller		not supplied	not supplied
	- Date Cast if Known		unknown	unknown
	- Storage Conditions		sealed bag	sealed bag
Mix Details			not supplied	not supplied
Presence of Abnormalities			none	none
Reinforcement	No of Bars		none	none
	/Diameter	(mm)	N/A	N/A
	/Distance From Nearest End	(mm)	N/A	N/A
Aggregate, Maximum Nominal Size		(mm)	20	20
Age at Test		(Days)	unknown	unknown
Method of End Preperation			grinding	grinding
Surface Moisture Condition at Test			dry	dry
Actual Core Lengths				
	- Maximum Length as Received	(mm)	130	130
	- Minimum Length, as Received	(mm)	110	125
	- Prepared Length	(mm)	100	75
	- Length After End Preperation	(mm)	93	74
Mass as Received		(g)	1959	1269
Mean Core Diameter		(mm)	99	74
Density		(kg/m^3)	2239	2293

Testing & Consultancy Services Ltd

1303

126a High Street
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COMPRESSIVE STRENGTH AND DENSITY OF CORES

BS EN 12504-1:2019, BS EN 12390-3:2019 and BS EN 12390-7:2019

Amount trimmed from cores			
- Average trimmed from top of core	(mm)	2	35
- Average trimmed from bottom of core	(mm)	19	9

Excess Voidage	(%)	0.5	1.0
Length/Diameter Ratio, λ		0.94	1.00
Date of Test		30.07.2025	30.07.2025
Mode of Failure		Normal	Normal
Maximum Load at Failure	(kN)	201	172
Compressive Strength (Measured Core Strength)	MPa (N/mm^2)	26.1	40.0
Estimated in-Situ Cube Strength	MPa (N/mm^2)	25.5	40.0

Deviations From the Standard Method:

Unless otherwise stated:

All testing was carried out in accordance with BS EN 12504-1:2019, 12390-3:2019 and 12390-7:2019

Test Cores and off-cuts are retained for 1 month

Autherised by: Report Date: 30.07.2025

Neal Jones

[redacted]

Operations Manager

Testing & Consultancy Services Ltd

1303

126a High Street
Old Woking
Surrey
GU21 4QN
01483 750074
www.tcstesting.co.uk

COMPRESSIVE STRENGTH AND DENSITY OF CORES

BS EN 12504-1:2019, BS EN 12390-3:2019 and BS EN 12390-7:2019

TCSL Reference			25/0905	25/0906
Site Mark/Client Reference			C07	C08
Date Received at Laboratory			17.07.2025	17.07.2025
Details	- Location of Concrete in the Structure		not supplied	not supplied
	- Date of Coring		not supplied	not supplied
	- Driller		not supplied	not supplied
	- Date Cast if Known		unknown	unknown
	- Storage Conditions		sealed bag	sealed bag
Mix Details			not supplied	not supplied
Presence of Abnormalities			none	none
Reinforcement	No of Bars		none	none
	/Diameter	(mm)	N/A	N/A
	/Distance From Nearest End	(mm)	N/A	N/A
Aggregate, Maximum Nominal Size		(mm)	20	20
Age at Test		(Days)	unknown	unknown
Method of End Preperation			grinding	grinding
Surface Moisture Condition at Test			dry	dry
Actual Core Lengths				
	- Maximum Length as Received	(mm)	160	145
	- Minimum Length, as Received	(mm)	155	130
	- Prepared Length	(mm)	101	76
	- Length After End Preperation	(mm)	99	75
Mass as Received		(g)	2586	1278
Mean Core Diameter		(mm)	99	74
Density		(kg/m^{3})	2273	2304

Testing & Consultancy Services Ltd

1303

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COMPRESSIVE STRENGTH AND DENSITY OF CORES

BS EN 12504-1:2019, BS EN 12390-3:2019 and BS EN 12390-7:2019

Amount trimmed from cores			
- Average trimmed from top of core	(mm)	15	37
- Average trimmed from bottom of core	(mm)	30	19

Excess Voidage	(%)	0.5	2.0
Length/Diameter Ratio, λ		1.00	1.01
Date of Test		30.07.2025	30.07.2025
Mode of Failure		normal	normal
Maximum Load at Failure	(kN)	139	163
Compressive Strength (Measured Core Strength)	MPa (N/mm^2)	18.1	37.9
Estimated in-Situ Cube Strength	MPa (N/mm^2)	18.1	38.1

Deviations From the Standard Method:

Unless otherwise stated:

All testing was carried out in accordance with BS EN 12504-1:2019, 12390-3:2019 and 12390-7:2019

Test Cores and off-cuts are retained for 1 month

Autherised by: Report Date: 30.07.2025

Neal Jones

[redacted]

Operations Manager

QF05/Rev01/NJ/Jan24

Testing & Consultancy Services Ltd

1303

126a High Street
Old Woking
Surrey
GU21 4QN
01483 750074
www.tcstesting.co.uk

COMPRESSIVE STRENGTH AND DENSITY OF CORES

BS EN 12504-1:2019, BS EN 12390-3:2019 and BS EN 12390-7:2019

TCSL Reference			25/0907	25/0908
Site Mark/Client Reference			C09	C10
Date Received at Laboratory			17.07.2025	17.07.2025
Details	- Location of Concrete in the Structure		not supplied	not supplied
	- Date of Coring		not supplied	not supplied
	- Driller		not supplied	not supplied
	- Date Cast if Known		unknown	unknown
	- Storage Conditions		sealed bag	sealed bag
Mix Details			not supplied	not supplied
Presence of Abnormalities			none	none
Reinforcement	No of Bars		none	none
	/Diameter	(mm)	N/A	N/A
	/Distance From Nearest End	(mm)	N/A	N/A
Aggregate, Maximum Nominal Size		(mm)	20	20
Age at Test		(Days)	unknown	unknown
Method of End Preperation			grinding	grinding
Surface Moisture Condition at Test			dry	dry
Actual Core Lengths				
	- Maximum Length as Received	(mm)	140	125
	- Minimum Length, as Received	(mm)	120	110
	- Prepared Length	(mm)	101	74
	- Length After End Preperation	(mm)	98	82
Mass as Received		(g)	2207	1093
Mean Core Diameter		(mm)	99	73
Density		($kg/m^{3)}$	2273	2304

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COMPRESSIVE STRENGTH AND DENSITY OF CORES

BS EN 12504-1:2019, BS EN 12390-3:2019 and BS EN 12390-7:2019

Amount trimmed from cores			
- Average trimmed from top of core	(mm)	14	28
- Average trimmed from bottom of core	(mm)	8	9

Excess Voidage	(%)	2.0	1.0
Length/Diameter Ratio, λ		0.99	1.12
Date of Test		30.07.2025	30.07.2025
Mode of Failure		normal	normal
Maximum Load at Failure	(kN)	91	74
Compressive Strength (Measured Core Strength)	MPa (N/mm^2)	11.8	17.7
Estimated in-Situ Cube Strength	MPa (N/mm^2)	11.8	18.5

Deviations From the Standard Method:

Unless otherwise stated:

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Test Cores and off-cuts are retained for 1 month

Autherised by: Report Date: 30.07.2025

Neal Jones

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Operations Manager

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COMPRESSIVE STRENGTH AND DENSITY OF CORES

BS EN 12504-1:2019, BS EN 12390-3:2019 and BS EN 12390-7:2019

TCSL Reference			25/0909	25/0910
Site Mark/Client Reference			C11	C12
Date Received at Laboratory			17.07.2025	17.07.2025
Details	- Location of Concrete in the Structure		not supplied	not supplied
	- Date of Coring		not supplied	not supplied
	- Driller		not supplied	not supplied
	- Date Cast if Known		unknown	unknown
	- Storage Conditions		sealed bag	sealed bag
Mix Details			not supplied	not supplied
Presence of Abnormalities			none	none
Reinforcement	No of Bars		none	none
	/Diameter	(mm)	N/A	N/A
	/Distance From Nearest End	(mm)	N/A	N/A
Aggregate, Maximum Nominal Size		(mm)	20	20
Age at Test		(Days)	unknown	unknown
Method of End Preperation			grinding	grinding
Surface Moisture Condition at Test			dry	dry
Actual Core Lengths				
	- Maximum Length as Received	(mm)	130	130
	- Minimum Length, as Received	(mm)	120	125
	- Prepared Length	(mm)	68	70
	- Length After End Preperation	(mm)	65	68
Mass as Received		(g)	1190	1165
Mean Core Diameter		(mm)	73	74
Density		(kg/m^{3})	2273	2304

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01483 750074
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COMPRESSIVE STRENGTH AND DENSITY OF CORES

BS EN 12504-1:2019, BS EN 12390-3:2019 and BS EN 12390-7:2019

Amount trimmed from cores			
- Average trimmed from top of core	(mm)	39	24
- Average trimmed from bottom of core	(mm)	15	18

Excess Voidage	(%)	2.8	2.0
Length/Diameter Ratio, λ		0.89	0.92
Date of Test		30.07.2025	30.07.2025
Mode of Failure		normal	normal
Maximum Load at Failure	(kN)	76	100
Compressive Strength (Measured Core Strength)	MPa (N/mm^2)	18.2	23.3
Estimated in-Situ Cube Strength	MPa (N/mm^2)	17.3	22.5

Deviations From the Standard Method:

Unless otherwise stated:

All testing was carried out in accordance with BS EN 12504-1:2019, 12390-3:2019 and 12390-7:2019

Test Cores and off-cuts are retained for 1 month

Autherised by: Report Date: 30.07.2025

Neal Jones

[redacted]

Operations Manager

QF05/Rev01/NJ/Jan24

Kiwa CMT

Kiwa CMT
Unit 5 Prime Park Way
Prime Enterprise Park
Derby
DE1 3QB

T +44 (0)1332 383333
E uk.cmtenquiries@kiwa.com
www.kiwa.com

Client: Constructive Evaluation

Report Number: 74614-A

Site: Former Novartis Site, 25.1774

Date: 21st July 2025

Partner for Progress

UKAS TESTING 0529

Kiwa CMT

Client:

Constructive Evaluation
Unit 15 & 16
Ford Business Park
Ford Nr. Arundel
West Sussex
BN18 0UZ

Date:	21/07/2025	**Originator:**	Sam Preller
Order Ref:	25.1774	**Our Ref:**	74614/CH/A
Site^:	Former Novartis Site, 25.1774		

Document Control

Document Prepared By: **Nina King** **Chemistry Technician**	[redacted]	
Document Authorised By: **Cameron Farr** **Head of Chemistry & Building Products**	[redacted]	
Issue Number and Date	**Issue 1**	**21/07/2025**

1. Samples

1.1. The following samples were recovered by the client and delivered to Kiwa CMT on 17/07/2025, no sampling certificate was provided.

Sample References^	Sample Description
DS-03, DS-06, DS-09, DS-10, DS-11, DS-13	6 No. concrete dust samples weighing approximately 30g each.

2. Analysis:

2.1. The sample(s) were submitted for the following analysis.

Sample References	Testing Requirements
DS-03, DS-06, DS-09, DS-10, DS-11, DS-13	Chloride ion content

2.2. The below are the testing methods used in the analysis.

Testing	Testing Method	UKAS
Chloride ion content	BS 1881: Part 124: 2015 + A1: 2021	Yes

2.3.

Comments:
Information marked by ^ was supplied by the client.
Information supplied by the client may affect the results
Results apply to the sample(s) as received
Results relate only to the items tested

3. Results:

3.1. Detailed chemical results for the analysis can be found in Appendix 1, of this report.

Appendix 1:

Certificates of Analysis

Kiwa CMT

DETAILED ANALYTICAL RESULTS - CHLORIDES

Client	Constructive Evaluation	**Job No.**	74614
Contact	Sam Preller	**Site^**	Former Novartis Site
Order Ref	25.1774	**Date Received**	17/07/2025
Date Analysed	18/07/2025	**Date Reported**	21/07/2025
Test Methods	BS 1881-124:2015+A1:2021	**Sample Description**	Concrete dust

Sample Reference^	%Chloride by mass of sample	%Chloride by mass of cement	Assumed % Cement Content
DS-03	<0.003	<0.02	14
DS-06	<0.003	<0.02	14
DS-09	<0.003	<0.02	14
DS-10	<0.003	<0.02	14
DS-11	<0.003	<0.02	14
DS-13	<0.003	<0.02	14

Comments

Where a cement content has not been determined, an assumed cement content of 14% has been used. This value was selected for historical reasons and may not accurately represent conditions on site if significant chloride ion is present within the samples.

Results apply to the samples as received.

Identified information supplied by the client (^) can affect the validity of the result

Signed : [redacted]
N. King
Chemistry Technician

Approved : [redacted]
C. Farr
Head of Chemistry & Building Products

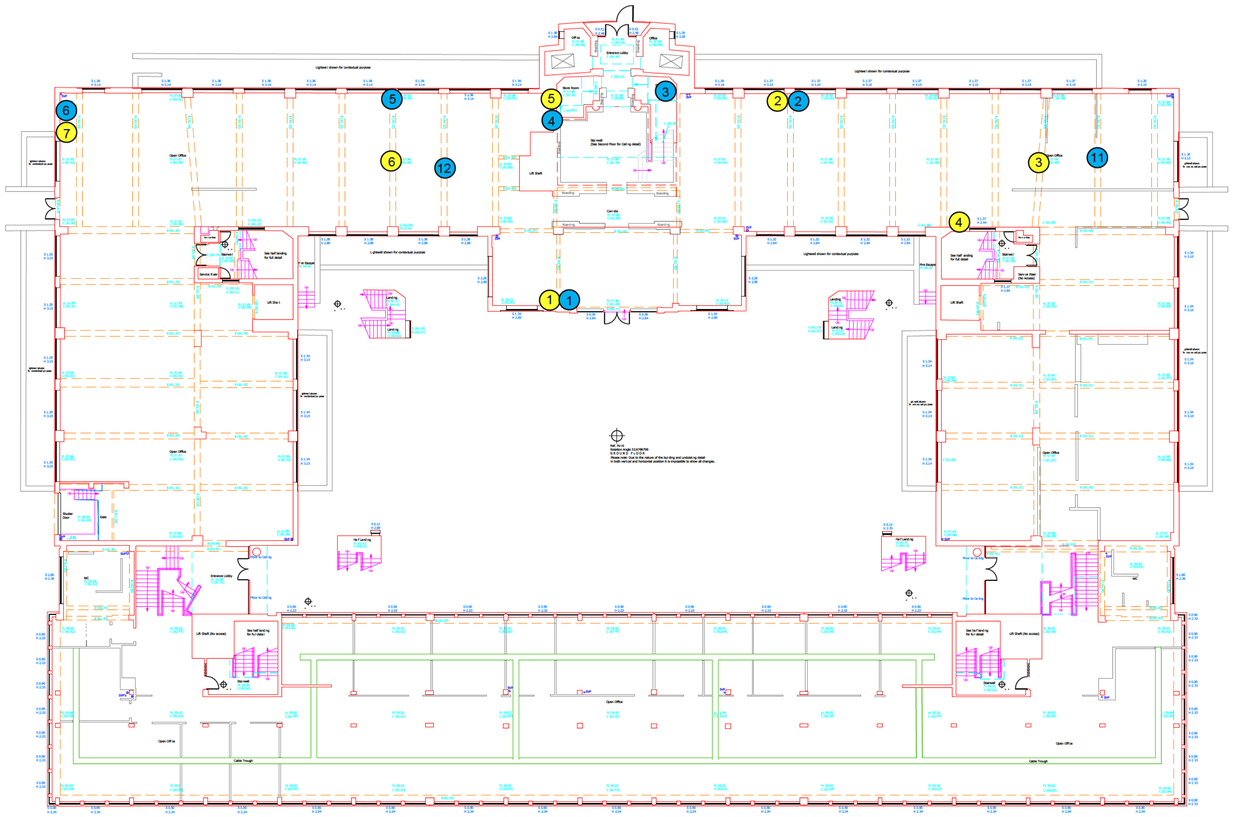
UKAS TESTING
0529

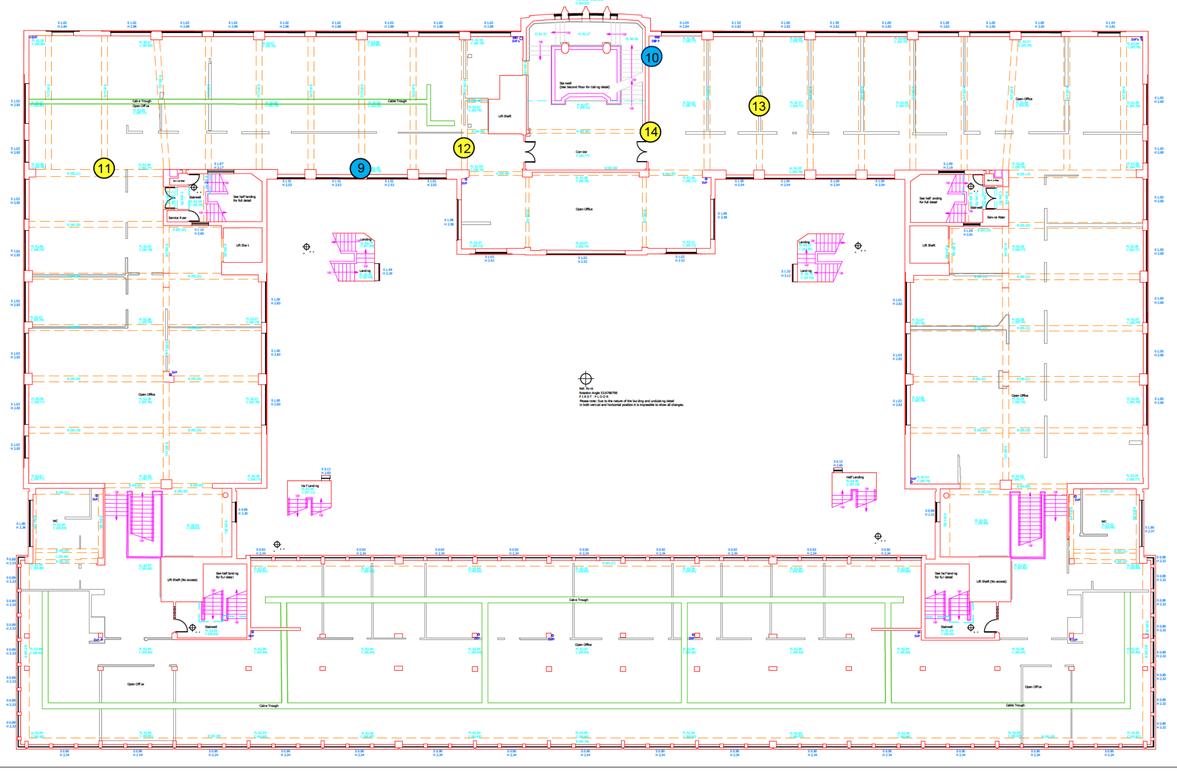
Appendix C

Locatio Plans

Core Sample Taken

Dust Sample Taken





NOTES:
Drainage:
Inspection Covers are lifted where possible and all drainage invert information has been obtained through visual inspection only, with no entry into manholes. Therefore the complete accuracy cannot be guaranteed. Where drainage is of critical importance we suggest the services of a specialist drainage expert be used.

Trees:
Every effort has been made to identify and detail all trees on site but where trees are of critical importance we suggest the use of a specialist such as an arborist. Tree spread and heights are indicative.

GPS:
GPS detail is relative to the time and date of survey. GPS levels and grid are obtained using industry standard guidelines and can vary according to the quality of the GPS network at the time of survey. Unless stated otherwise, surveys are Scale factor 1 and Horizontal and Vertical Datums are established from a central site fix and baseline orientation station utilising GNSS correction data.

Survey notes:
Survey specification is linked to the original purpose of the survey commissioned at source and is to be used for this purpose only. Survey is accurate within limitations of site conditions at the time of survey. In areas difficult to survey due to restricted access, lines of sight or dense vegetation, critical dimensions and positions should be verified following suitable clearance.
Survey detail obtained and shown is relative to the plotting scale.

LEGEND

TREE SPECIES INFORMATION

ALDER	ALD	LOCUST	LOC
ASH	ASH	LONDON PLANE	LPN
ASPEN	ASP	MAGNOLIA	MAG
BEECH	BCH	MAPLE	MPL
CEDAR	CED	OAK	OAK
CHERRY	CHY	PINE	PNE
CYPRESS	CYP	POPLAR	POP
ELM	ELM	PRUNUS	PNS
FIR	FIR	RHODODENDRONS	RDN
FRUIT	FRT	ROWAN	RWN
HAWTHORN	HAW	SILVER BIRCH	SBI
HAZEL	HAZ	SORBUS	SOR
HOLLY	HLY	SWEET CHESTNUT	SCH
HORSE CHESTNUT	HCH	SYCAMORE	SYC
HORNBEAM	HRM	WALNUT	WNT
LABURNUM	LRM	WILLOW	WLW
LARCH	LAR	YEW	YEW
LIME	LIM	SPECIES UNKNOWN	SPU
		COPPICED	COP

TREE ANNOTATIONS: Tree Species / Tree Boll Size / No of Bolls
Tree Height / Tree Canopy Spread

FENCE INFORMATION

BARBED WIRE FENCE	BWF
CORRUGATED IRON FENCE	CIF
CLOSE BOARD FENCE	CBF
CHAIN LINK FENCE	CLF
CHESTNUT PALING	CPF
CRASH BARRIER	CBR
HANDRAIL	HDL
IRON RAILINGS	IRF
LARCH LAP FENCE	LLF
MISCELLANEOUS FENCE	MSF
PALISADE FENCE	PSF
PICKET FENCE	PKF
POST AND CHAIN FENCE	PCF
POST AND RAIL FENCE	PRF
POST AND WIRE FENCE	PWF
STOCK WIRE FENCE	SWF
TRELLIS FENCING	TLF

LEVEL INFORMATION

BASEMENT LEVEL	BTL
BED LEVEL	BL
COVER LEVEL	CL
DAMP PROOF COURSE	DPC
FLOOR LEVEL	FL
INVERT LEVEL	IL
OUTFALL LEVEL	OL
THRESHOLD LEVEL	THL
FOUL WATER	FW
SURFACE WATER	SW
UNABLE TO LIFT	UTL
WATER LEVEL	WL

SURFACE INFORMATION

CONCRETE	Conc
BRICK PAVERS	BP
FLOWERBED	FB
PAVING SLABS	PS
RETAINING WALL	RWall
TACTILE PAVING	Tac

FEATURE INFORMATION

BOLLARD	BO
BRITISH TELECOM BOX	BTB
BRITISH TELECOM IC	BTIC
BUS STOP	BS
CABLE TELEVISION BOX	CATB
CABLE TELEVISION IC	CATV
EARTHING ROD	ER
ELECTRICITY CABLE PIT	ELCP
ELECTRICITY CONTROL BOX	ECB
ELECTRICITY POLE	EP
FIRE HYDRANT	FH
INSPECTION COVER	IC
LAMP POST	LP
LETTER BOX	LB
LITTER BIN	BIN
KERB OUTLET	KO
NAME PLATE	NP
NOTICE BOARD	NB
POST	P
RAIN WATER PIPE	RWP
RAISED FLOWERBED	RFB
ROAD SIGN	RS
RODDING EYE	RE
SERVICE MARKER POST	SMP
SOIL VENT PIPE	SVP
STOP COCK	SC
STOP VALVE	SV
TELEGRAPH POLE	TP
TELEPHONE CALL BOX	TCB
TRAFFIC SIGNAL	TS
TRAFFIC SIGNALS IC	TSIC
WATER METER	WM
WATER TAP	Tap

Level Datum:
Levels are related to OSGB15 derived from the GPS network

Grid:
Grid is related to OSGB15 derived from the GPS network

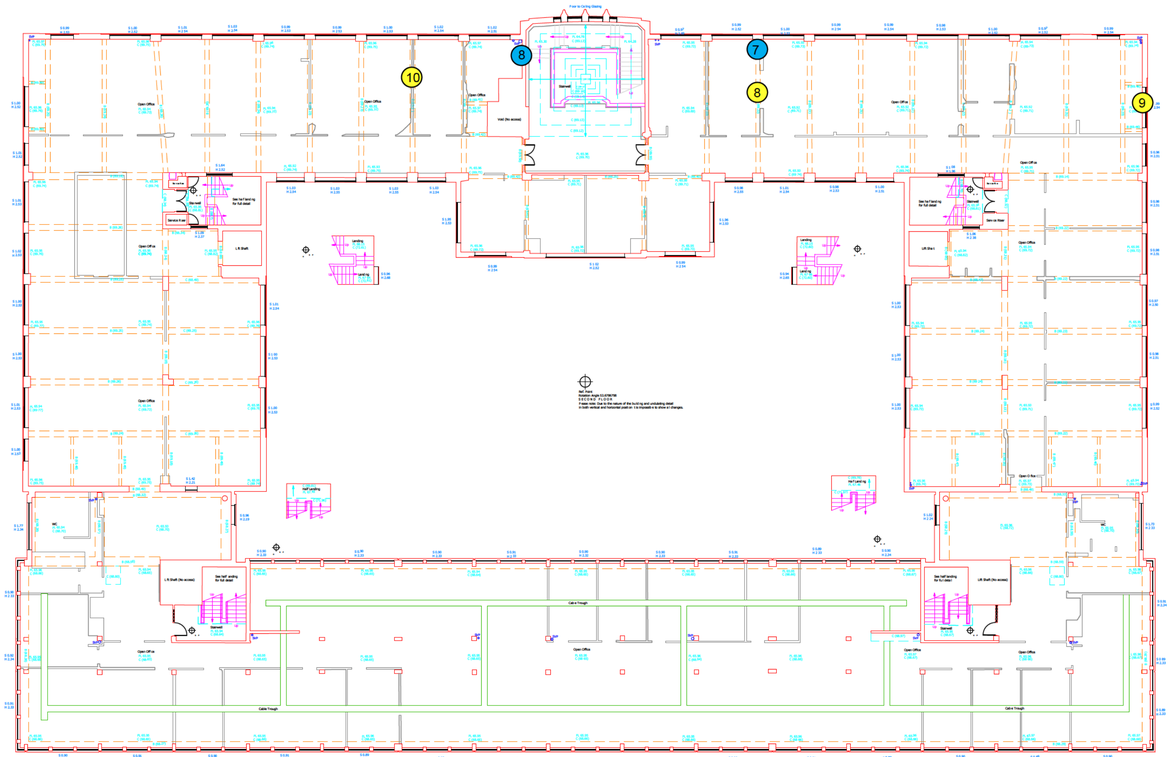
Northpoint:
The Northpoint position shown on this drawing has been located as accurately as possible, but is only indicative of true North

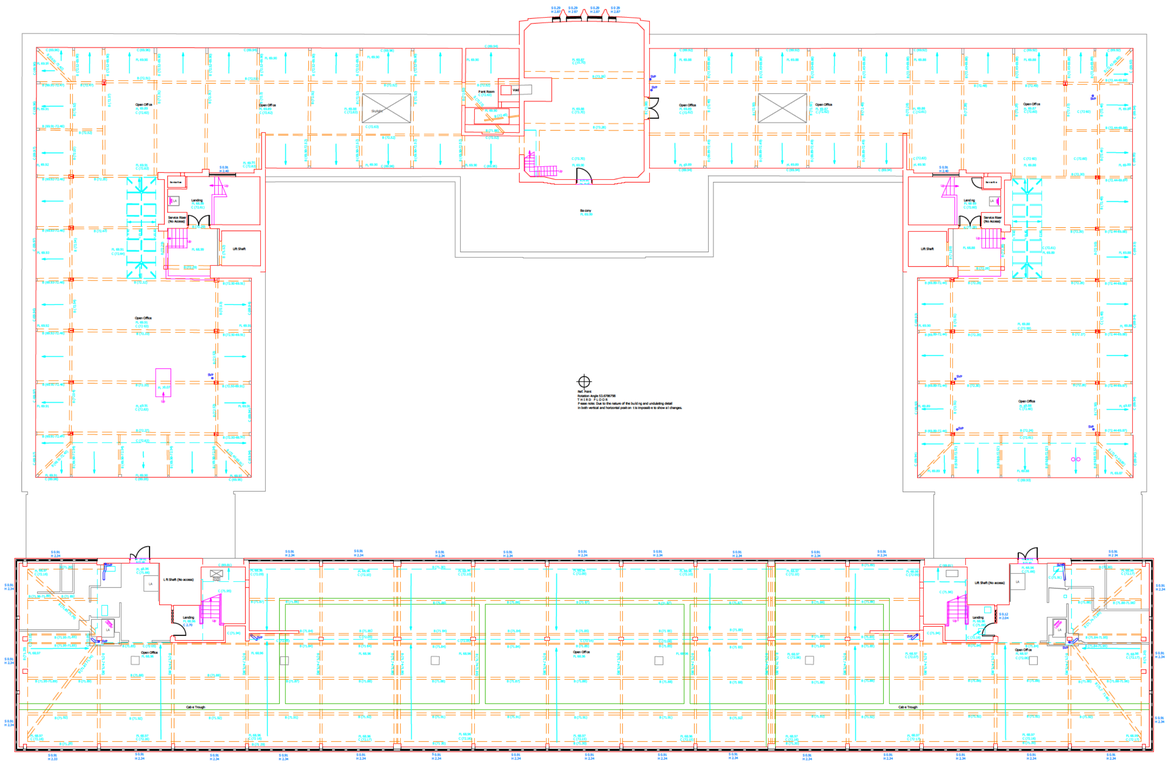
ENCOMPASS SURVEYS

Encompass Surveys Ltd
Unit 2
Tallsman Business Centre
Duncan Road
Park Gate, Southampton
Hampshire SO31 7GA

Tel: 023 80692002 Email: info@encompass-surveys.co.uk
Fax: 023 80697125 Website: encompass-surveys.co.uk

Client:	Lovell Partnerships Limited		
Survey Location:	Horsham Enterprise Park Wimblehurst Road Horsham		
Survey type:	Measured Building	Scale:	1:100@A1 (Presented @ 1:200)
Drawing ref:	ENC/2404/260722/MB	Date:	August 2022
Drawn/QA:	EH / SB	Revision:	-





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HAZEL	HAZ	SORBUS	SOR
HOLLY	HLY	SWEET CHESTNUT	SCH
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SURFACE WATER	SW
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WATER LEVEL	WL

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RODDING EYE	RE
SERVICE MARKER POST	SMP
SOIL VENT PIPE	SVP
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Fax: 023 80697125 Website: encompass-surveys.co.uk

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Drawing ref:	ENC/2404/260722/MB	Date:	August 2022
Drawn/QA:	EH / SB	Revision:	-