

Concrete Condition Survey

Newport Civic Centre
Newport



B **Beton
Bauen**
SPECIALIST CONTRACTING

DOCUMENT INFORMATION

SCOPE

Make safe &
Hammer tap testing

SITE ADDRESS

Newport Civic Centre
NP20 4UR

JOB NO.

BB24140

CLIENT / MC

Newport Norse

ISSUED

05 Nov 2024

REVISION

000



Document control

DOCUMENT HISTORY	
Created by	Louis Lau
Title	Site Engineer
Signed	
Date	05/11/2024

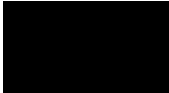
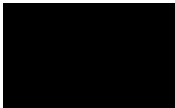
REVISION HISTORY					
Rev	Prepared by	Signature	Approved by	Signature	Date
00	Louis Lau		Martin Lau		05 Nov 2024
	First issue				
01					
02					
03					

Table of Contents

DOCUMENT CONTROL..... 1

SCOPE OF WORKS 4

INSPECTION DETAILS..... 5

WORKING PHOTOS..... 6

SCHEDULE OF DEFECTS AND DRAWINGS 11

Scope of works

The purpose of this report is to assess the condition of the concrete element of the waffle frame roofing on the 5th floor in Newport Civic Centre.



Location of Newport Civic Centre

Acoustic Hammer tap test

Manual test including the tapping of a hammer on a surface to establish the integrity of concrete that can be subject to delamination and hollowness. A make safe approach was adopted to remove any loose concrete that may pose immediate danger.

Inspection Details

The concrete waffle structure with glass block roofing at the surveyed building has shown several cracks and spalling. The hammer test has removed a fair amount of the loose concrete .

There are several major causes that lead to the concrete failing in the areas concerned:

- Condensation
It is believed that condensation in the false ceiling is a contributing factor in the demise of the soffit concrete. The glass blocks and surrounding concrete frame act as a cold bridge and as such condensation is evident in the ceiling void with little ventilation, hence delamination taking place.
- Water leakage
The waffle structure was found to have numerous cracks which have provided an avenue for water to track inside the soffit. Further to this seal between the building structure and concrete waffle frame has failed.
- Mortar joint failure
Gaps found between the waffle concrete structure and all cross beams is another avenue for water ingress and build up inside the building and could be subject to freeze thaw of late due to the sub-zero temperatures following periods of high relative humidity.
- Lack of maintenance
The existing water proofing system has failed due to seemingly what looks like a lack of maintenance and periodic monitoring.

Working Photos

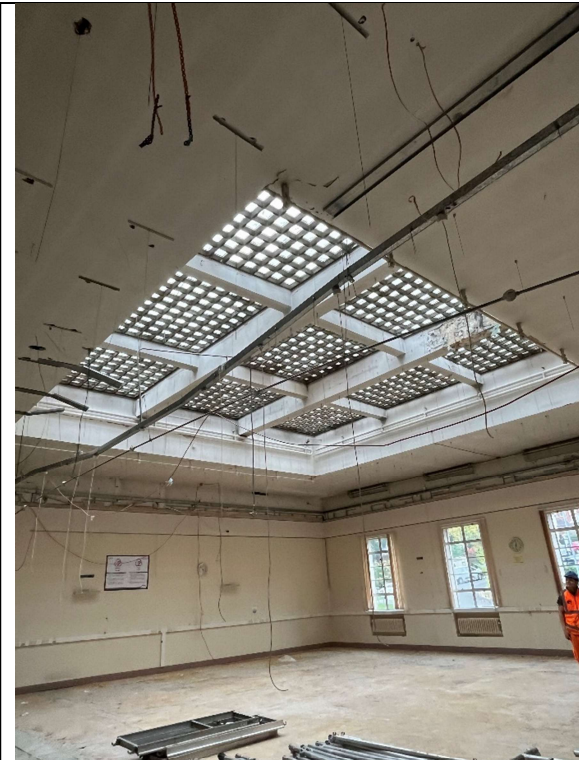


Photo 1. General view of the structure



Photo 2. Waffle concrete frame failed



Photo3. Cracks on structure



Photo 4. Water ingress, rebar corrosion



Photo 5. Spalling concrete

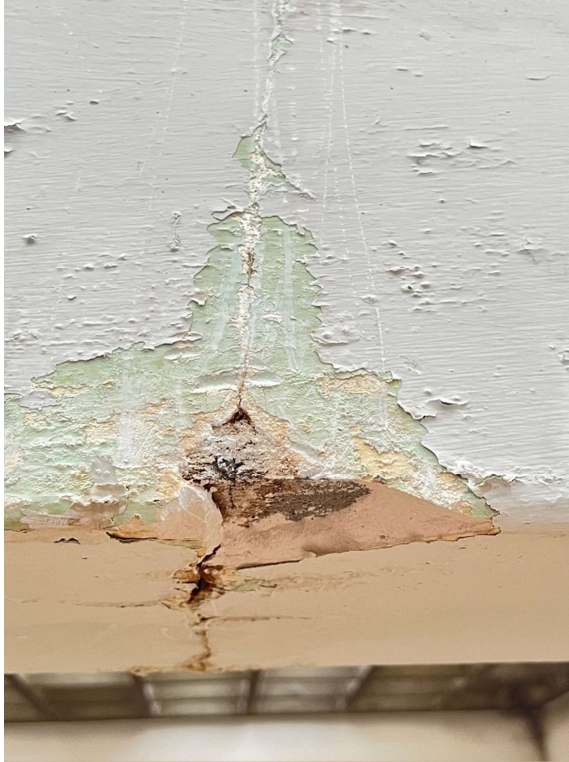


Photo 6. Cracks on beams

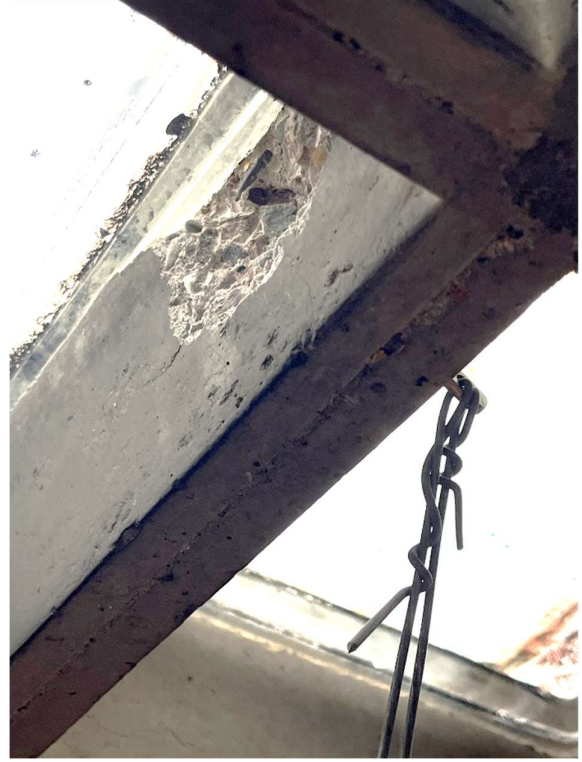


Photo 7. Cracks on beams

Photo 8. False ceiling fixing



Photo 9. Water ingress, rebar corrosion



Photo 10. Water ingress, rebar corrosion

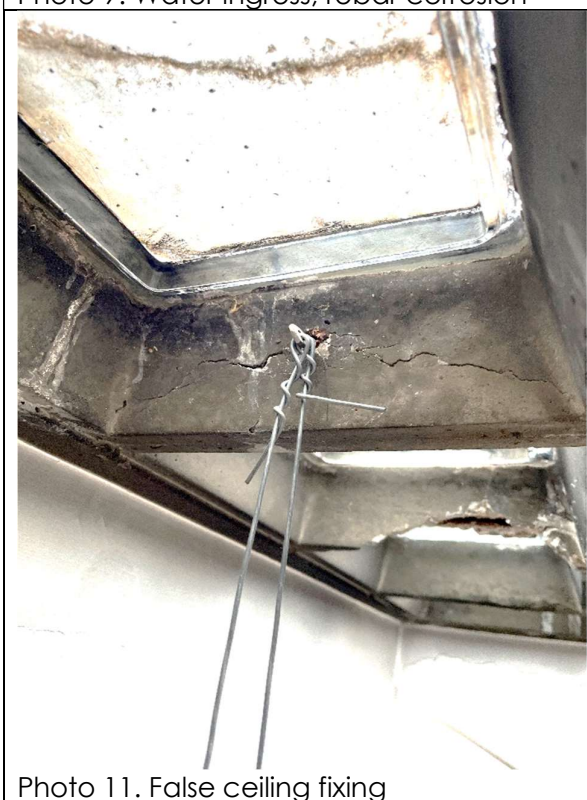


Photo 11. False ceiling fixing



Photo 12. Water ingress, rebar corrosion

Schedule of Defects and Drawings

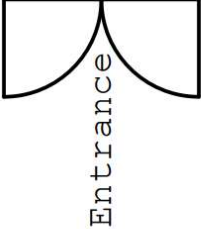
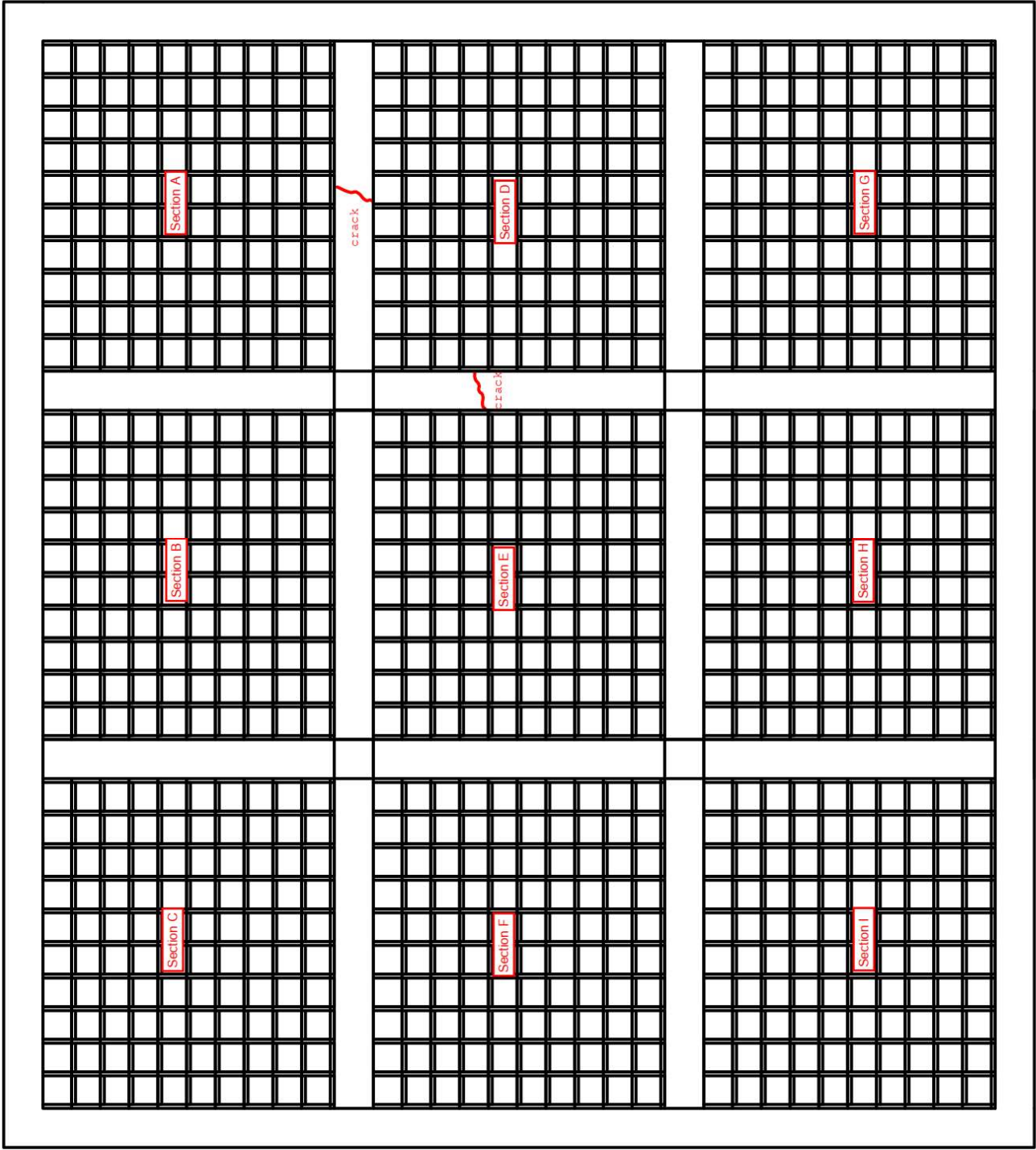
Acoustic Hammer Test Survey							
Location	Newport Civic Centre						
location	item quantity	description	detail	length (mm)	width (mm)	area (m2)	length (M)
Section A	24	waffle frame	repair	220	65	0.34	
Section B	18	waffle frame	repair	220	65	0.26	
Section C	35	waffle frame	repair	220	65	0.50	
Section D	28	waffle frame	repair	220	65	0.40	
Section E	25	waffle frame	repair	220	65	0.36	
Section F	29	waffle frame	repair	220	65	0.41	
Section G	22	waffle frame	repair	220	65	0.31	
Section H	33	waffle frame	repair	220	65	0.47	
Section I	15	waffle frame	repair	220	65	0.21	
Section D	1	beam	crack	820	1		0.82
Section D	1	beam	crack	1320	1		1.32

Summary			
waffle frame	repair	3.27	m2
beam	crack	2.14	linear m

NOTES

- 1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE STATED.
- 2. ALL HEIGHTS ARE IN METERS ABOVE ORDNANCE DATUM UNLESS OTHERWISE STATED.
- 3. DO NOT SCALE FROM THIS DRAWING.
- 4. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER SCHEME DRAWING.
- 5. LOCATION, SHAPE AND EXTENT OF DEFECTS ARE APPROXIMATE.
- 6. Date of Survey: 04/11/2024

Window



Newport Civic Centre

Structural Investigation and NDT Legend		
Legend Item Description	Drawing Symbol	Type
Photograph Number	(5)	
Repaired Area		
Delaminated Area		
Spalled Area		
Exposed Reinforcement		ER
Cracking and Crack Width		1mm
Rust Staining		RS
Water Strain		
Efflorescence staining		EFL
Tie Wire		
Vegetation		
Honeycombing		
Measurement Location	(A)	

A	First Issue	04/11/2024
Rev	Revision Details	Chkd/Appd Date
Drawn:	Louis Lau	For comment
Design:	---	For tender
Chkd:	Martin Lau	For construction
Appd:	---	As Constructed
Date:	04/11/2024	Other
File ref:		



Tel: 02920 862 596

betonbauen.com

Client

Newport Norse

Project Name

Newport Civic Centre

Drawing Title

Newport Civic Centre Floor 5

Original Drawing Size

A1

Scale

1:40

Dimensions: Millimeters

Drawing No

BB24140-20241104-001

Rev

A



Head Office

BETON BAUEN (UK)
Beton Haus
Nantgarw Road Factory Access
Caerphilly, CF83 2BJ



Telephone

FREE PHONE: +44 (0) 800 077 8802
LOCAL RATE: +44 (0) 29 2086 2596



Web & Mail

EMAIL: ENQUIRIES@BETONBAUEN.COM
WEB: WWW.BETONBAUEN.COM



WWW.BETONBAUEN.COM