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Our ref: 16088
18th August 2016

Corby Borough Council
The Corby Cube
Parklands Gateway
George Street
Corby
Northants
NN17 1QG

For the attention of: Mr Gareth Davis

Dear Sirs,

***Re: Martech Report 16088
Neville House, Corby
Additional Concrete Investigations & Testing***

We write enclosing our survey findings including laboratory report and photographs and survey sheets.

This testing was undertaken as requested due to the previous survey which found very low cement content (5.4%) at one test location (TA9). This additional testing was originally for 4 additional cement content tests but we have in fact undertaken 5 (at no extra cost) along with more cover and carbonation testing as on site.

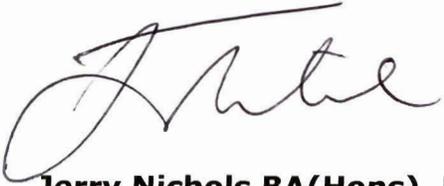
The cement content results ranged from 9.2% to 24.4% at this visit. The lowest of 9.2% was from the roof main beam at TA48, about 1m further along from TA9. The result was not as low as before but still indicative of a lower level of cement to this element. Three of the other four results were fairly consistent (from 13.3% to 15.2% (the accepted norm is 14%) and one result was high (24.4%).

The other test results (cover and carbonation) were comparable to those previously obtained. In fact the carbonation results were often lower and so will lower the mean carbonation results. A breakout at TA48, 1m along from TA9, revealed a bar with surface corrosion in carbonated concrete.

The findings should be assessed by the Structural Engineer.

We trust that the above is as required, and hope to be able to be of assistance in the future. In the event of any queries please do not hesitate to contact us,

Yours Faithfully,
For **Martech**,

A handwritten signature in black ink, appearing to read 'J. Nichols', written in a cursive style.

Jerry Nichols BA(Hons), MSc
Operations Director

Neville House, Corby – Additional Concrete Testing Site Photographs

The following photographs illustrate the additional survey works. We have already undertaken survey work which was reported under separate cover – this additional work was as requested following analysis of previous results, notably a low cement content result. The photographs should be viewed in conjunction with the site survey notes.



Photograph 1: General view of Test Area 41 (TA41) to a 3rd floor beam.



Photograph 2: General view of TA44 to roof plank soffits.



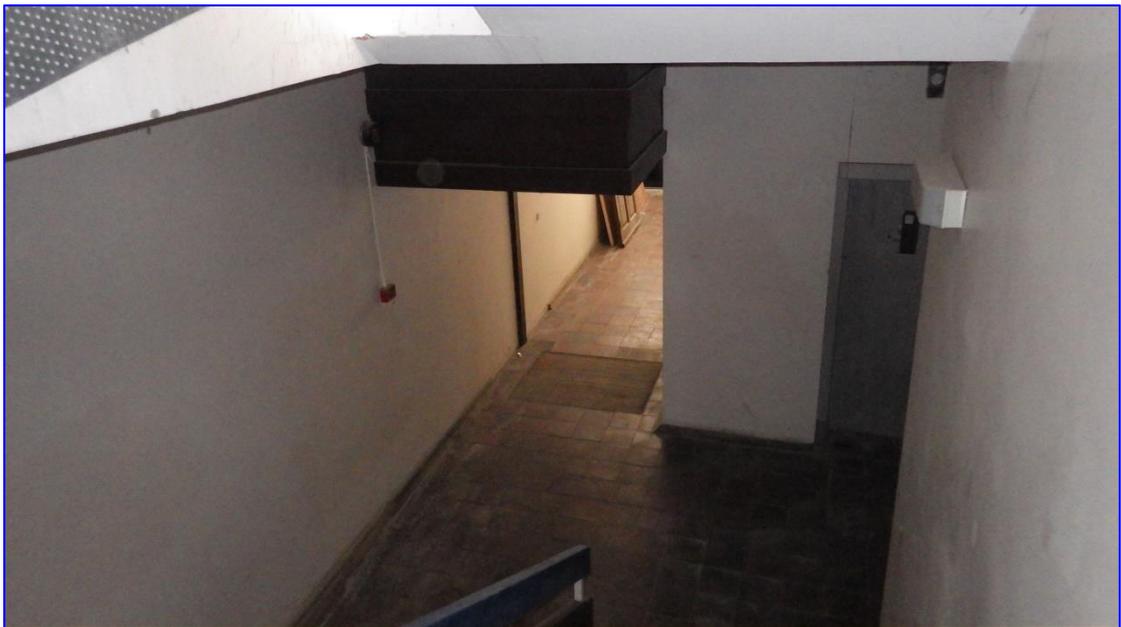
Photograph 3: Breakout and sample location at TA44. The pink colour is a result of a carbonation test also undertaken – indicating low carbonation.



Photograph 4: Breakout / sample location at TA48, roof main beam (approximately 1m from original TA9) revealing a bar with surface corrosion in carbonated concrete.



Photograph 5: Sample location at TA49, 1st floor column. Render over eml over the concrete.



Photograph 6: General view in lobby area.



Photograph 7: As p6, another view.



Photograph 8: View of timber cladding over soffit in lobby and existing hole through.

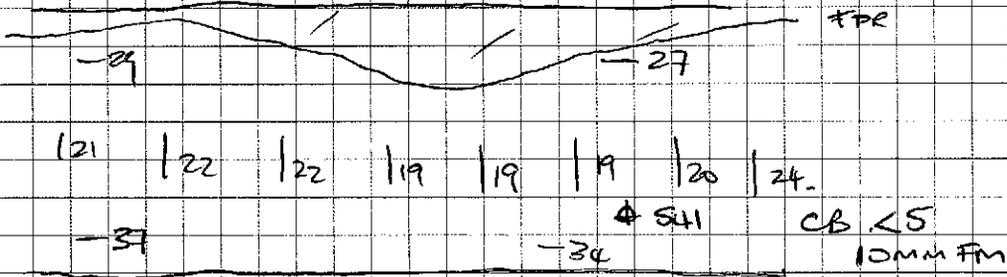


Photograph 9: General view of section of floor plank soffit in lobby, hidden by timber cladding.

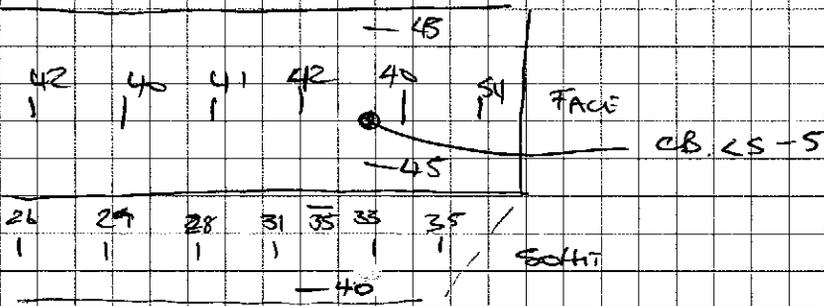
LEGEND

TA	Test Area
⊕ S	Sample Location and Reference
CV	Depth of Cover (mm)
CB	Depth of Carbonation (mm)
C+P	Clean and Passive Steel
LOP	Loss of passivity
SP	Spall
PR	Previous Repair
FPR	Failed Previous Repair
TW	Tie Wire
RS	Rust Spot/Stain
PY	Pyrite
B/O	Breakout to Expose Reinforcement
c	Crack
VS	Visible Steel
BE	Bar end
45	Rebar Location and Depth of Cover (mm)
SSC	Slight Surface Corrosion
SC	Surface Corrosion
H	Hollow

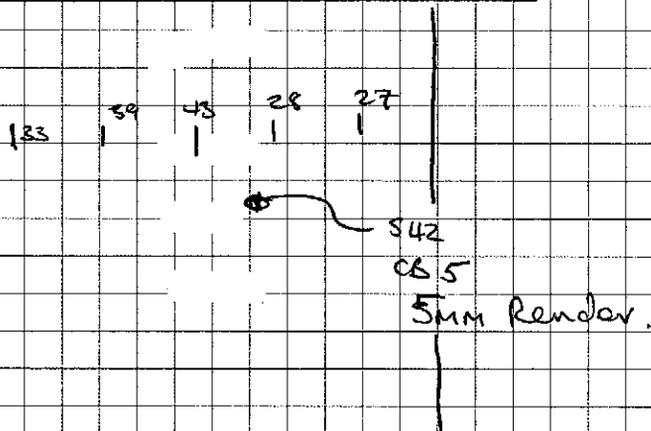
TA41 3RD floor beam (Ext)



TA42 2ND floor cross beam



TA43 2ND floor Soffit



Project NEVILLE HOUSE
carby

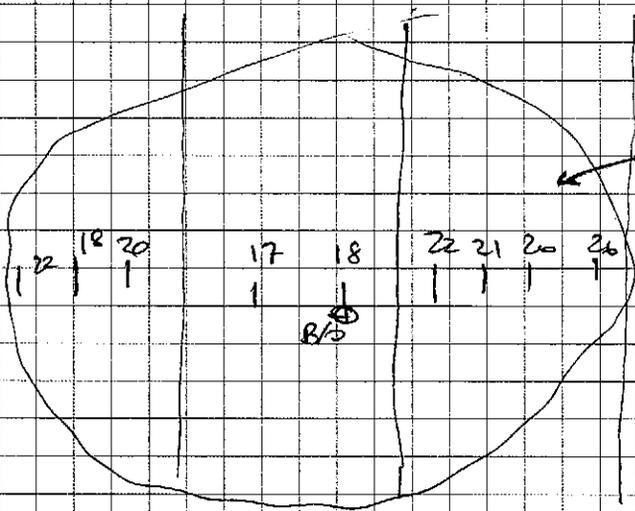
Location TA41-43

Date

Report No 16086

Sheet No

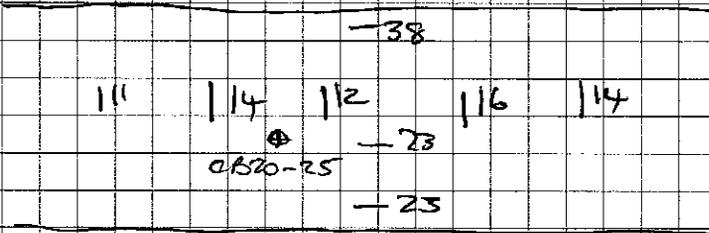
TA44 Roof Soffit



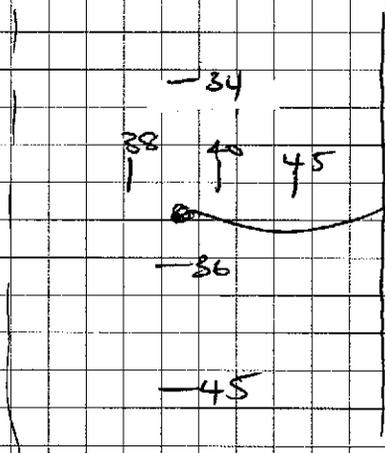
MISSING RENDER

B/O 2x 3mm plain bars c/c
 c/c 18 & 20
 c/c < 5.

TA45. 4th floor BEAM



TA46 3rd floor WALL



c/s < 5
 10mm render

Project NEVILLE House
GARY

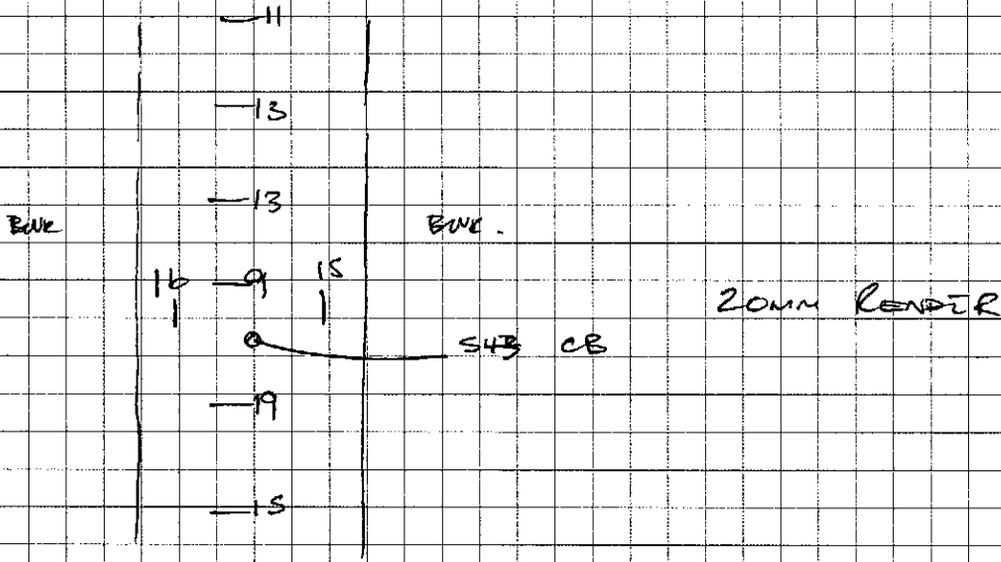
Location TRIP4 - 46

Date

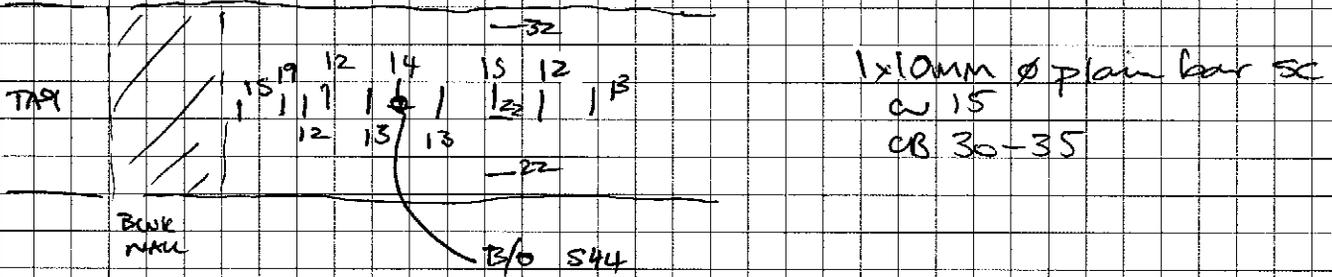
Report No 16089

Sheet No

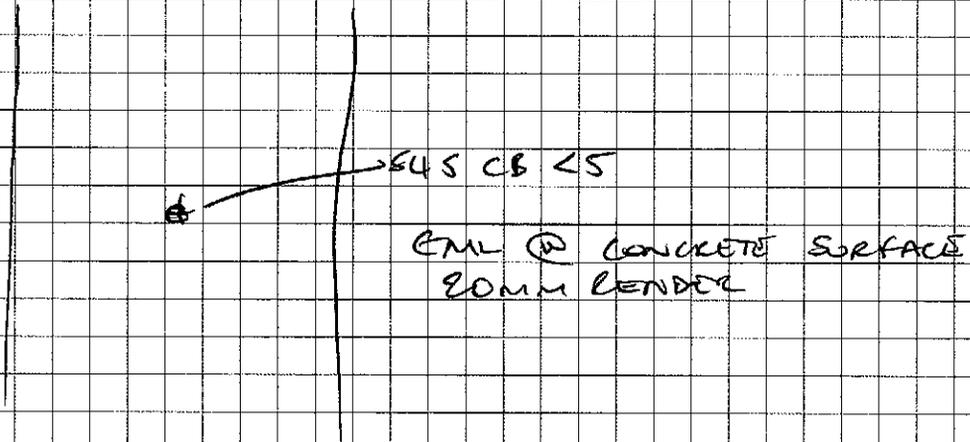
TA47 2ND FLOOR COLUMN



TA48. ROOF MAIN BEAM (APPROX 1M FROM TA9)

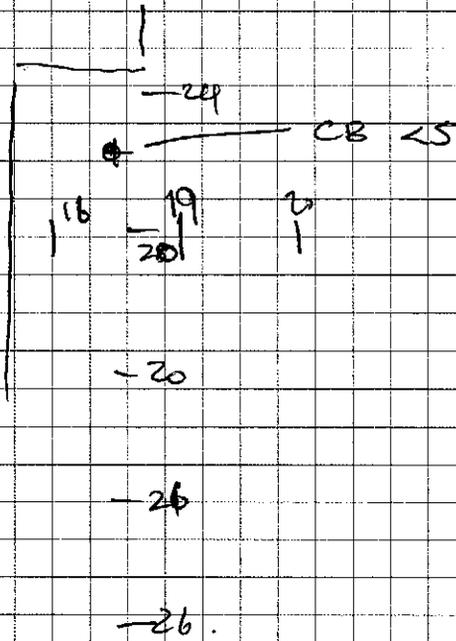


TA49 1ST FLOOR COLUMN



Project NEVILLE HOUSE Location TA47-49
CARBY
 Date
 Report No 16086 Sheet No

TASO 1st floor split



TASO 2ND floor lift wall

BRICKWORK WITH 25mm RENDER

Project NGILLE HOUSE
CORBY

Location TASO -SI

Date

Report No 16088

Sheet No

Sample List –
Neville House, Corby

Sample	Test Area	Element/Location
S1	41	3 rd Floor Beam Ext
S2	43	2 nd Floor Soffit Ext
S3	47	2 nd Floor Column
S4	48	Roof Main Beam
S5	49	1 st Floor Column



Martech Technical Services Ltd
21 Church Street
Sawtry
Huntingdon PE28 5SZ

17 August 2016
MA/12976/irg
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CERTIFICATE of ANALYSIS

Neville House, Corby
Cement content of concrete samples

Sample ref.:	10516	10517	10518	10519
Client's ref.:	S41	S42	S43	S44
Date received:	10 August 2016			
Mass received (g) :	65	50	74	57
Type of sample:	concrete dust			
Date of analysis:	15 August 2016			
<i>Determined values</i>				
Insoluble residue (%)	53.9	56.8	62.3	62.6
Soluble silica (%)	5.3	3.1	3.5	2.3
Calcium oxide (%)	21.5	18.3	17.2	16.0
<i>Calculated values</i>				
<i>Cement content (%)</i>				
ex silica	24.4	13.3	15.2	9.2
ex lime	33.4	28.4	26.7	24.7
preferred/mean value %	24.4	13.3	15.2	9.2
<i>Aggregate content (%)</i>				
ex silica	70.0	83.7	81.3	88.7
ex lime	59.0	65.0	67.2	69.6
preferred/mean value	70.0	83.7	81.3	88.7
<i>Aggregate/cement ratio</i>				
ex silica	2.9	6.3	5.3	9.7
ex lime	1.8	2.3	2.5	2.8
preferred/mean value	2.9	6.3	5.3	9.7

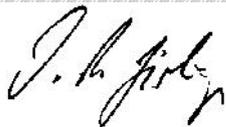
Sample ref.:	10520
Client's ref.:	S45
Date received:	10 August 2016
Mass received (g) :	48
Type of sample:	concrete dust
Date of analysis:	15 August 2016
<i>Determined values</i>	
Insoluble residue (%)	57.6
Soluble silica (%)	3.2
Calcium oxide (%)	19.4
<i>Calculated values</i>	
<i>Cement content (%)</i>	
ex silica	13.9
ex lime	30.0
preferred/mean value %	13.9
<i>Aggregate content (%)</i>	
ex silica	82.9
ex lime	63.1
preferred/mean value	82.9
<i>Aggregate/cement ratio</i>	
ex silica	5.9
ex lime	2.1
preferred/mean value	5.9

The cement contents were determined in accordance with B.S. 1881:Part 124:1988. The silica content was determined by atomic absorption spectrophotometric method.

Assumptions used for the cement and aggregate content calculations:

Silica content of cement	=	20.2 %
Soluble silica content of aggregate	=	0.5 %
Calcium oxide content of cement	=	64.5 %

End of report



Dr Ian Girling
 Quality Manager