



# Building for Tomorrow

14 March 2023

Belfast





**Speaker spotlight:**

**Linda Flynn MCIQB MCABE**

**Project Construction Quality Manager**

# Agenda

Working together, creating an environment to build quality homes

1

NHBC  
Construction  
Quality Journey

2

What is a  
Construction  
Quality Review  
(CQR)

3

Construction  
Quality through a  
NHBC lens:  
Industry / NI /  
CQRs / Inspection  
insights

4

NI CQR  
Opportunities for  
Improvement

# Construction Quality Team



## Helping you improve quality and consistency

- CQRs introduced in 2016
- The first CQRs were carried out by Inspection Managers across the UK
- Due to the success and popularity of the reviews, the Construction Quality team was established in 2019
- Team of 40 quality specialists across the UK
- MCIQB level, defined Continuing Professional Development / Training programme / Annual Skills Review / NHBC Academy
- 4,000+ CQRs are being completed per year
- Coverage in all areas of the UK, with an on-going recruitment drive
- Pricing based on a sliding scale £1650-£1,050



# Construction Quality Reviews

## Independent, expert help on site quality

Site details including reference and date of review.  
Report emailed to site manger and any others previously set up for automatic distribution.

Site score summary. In this example 83.33% of build stages scored four ('good' or above) with an average of 4.45

## Site Assessment

Traditional construction  
N H B C House, Davy Avenue Knowlhill

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**Site Details:**

Builder name - NHBC  
Division -  
Group -  
Site Manager - A manager  
Reviewed - 20-02-2023  
Site ID Ref - 6126392

**Undertaken by:**

John Coates

**Site Scores:**

Percentage of Positive Scores: 83.33%  
Average Build Stage Score: 4.46

*This report is prepared for the sole use of the builder named above. It may not be disclosed to a third party, quoted, referred to, or published on any social media platform without NHBC's prior written consent. To gain NHBCs consent please email [ConstructionQuality@nhbc.co.uk](mailto:ConstructionQuality@nhbc.co.uk)*

Construction Quality Review



Raising Standards. Protecting Homeowners.

# Construction Quality Reviews

## Independent, expert help on site quality

Up to 38 build stages across eight build sections with typically about 20 stages reviewed per visit

Every available build stage scored from 1 to 6

Very Poor	Many significant non-compliances of NHBC Standards and/or Building Regulations - Imminent dangers to H&S apparent and/or almost inevitably resulting in a claim(s) > £100K	1
Poor	Many minor non-compliances of NHBC Standards and/or Building Regulations and/or some significant non-compliance - Imminent danger to H&S apparent and/or almost inevitably resulting in a claim(s) > £30K	2
Requires Improvement	Some minor non-compliance(s) with NHBC Standards and/or Building Regulations	3
Good	Meets NHBC Standards & Building Regulations	4
Very Good	In addition to 4 - some extra attention to detail over and above minimum requirements	5
Outstanding	In addition to 4 - much of work seen can't be improved upon	6

Contents page includes the score for each reviewed build stages

Contents		NHBC
		Raising Standards. Protecting Homeowners
<b>1.FOUNDATIONS</b>		<b>Rating</b>
1.2 Ground preparation, excavation, piling and formwork	-	
1.3 Reinforcement and concrete placement	-	
<b>2.SUBSTRUCTURE &amp; DRAINAGE</b>		<b>Rating</b>
2.1 Walls and columns	5	
2.2 Waterproofing and ventilation	4	
2.3 Sub-floor services and service entries	-	
2.4 Ground floor	4	
2.5 Drainage (internal and external)	4	
2.6 Gas precautions	-	
<b>3.SUPERSTRUCTURE</b>		<b>Rating</b>
3.1 Structural frame and/or loadbearing walls	6	
3.2 External envelope including chimneys and flues	4	
3.3 Cavities, insulation and soundproofing	4	
3.4 DPCs and trays	3	
3.6 Intermediate floor structure	4	
3.7 Lintels, beams and other structural elements	5	
3.8 Balconies including fixings and weather proofing	-	
3.10 Fire stopping (Superstructure)	6	
<b>4.ROOFS</b>		<b>Rating</b>
4.1 Framing (including dummy chimneys)	2	
4.2 Pitched roof coverings	-	
4.3 Flat roof coverings	-	
4.4 Ventilation, underfelt and insulation	4	
4.5 Flashings, gutters and downpipes	-	
4.6 Fire stopping (Roofs)	-	
<b>5.FIRST FIX</b>		<b>Rating</b>
5.1 Window and door frames	3	
5.2 Floor decking, stairs and soundproofing	3	
5.3 Services – electrical	4	
5.4 Services – plumbing	5	
5.5 Services – ventilation	4	
5.6 Non-load bearing and compartment walls	5	
5.7 Plaster and dry lining	-	
5.8 Fire stopping (First fix)	-	
<b>6.SECOND FIX</b>		<b>Rating</b>
6.1 Services - electrical including equipment	6	
6.2 Services - plumbing including equipment	5	
6.3 Joinery	5	
<b>7.SURFACE FINISHES</b>		<b>Rating</b>
7.1 Internal finishes	6	
7.2 Floor finishes	6	
7.3 External finishes	-	
<b>8.EXTERNAL WORKS</b>		<b>Rating</b>
8.1 Retaining walls and free-standing walls	-	
8.2 Hard and soft landscaping	-	

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Site name: Traditional construction - Review Date: 20-02-2023

Construction Quality Review

# Construction Quality Reviews

## Independent, expert help on site quality


Individual pages for each build stage

Build overview with any strengths and/or weaknesses highlighted

Photographs, drawings and other supporting images. With plot reference(s) and a clear indication if observed work is right or wrong

Summary root causations, with more details of findings from the review

### 5.FIRST FIX



Raising Standards. Protecting Homeowners

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#### 5.1 Window and door frames

Rating 3

**Comments:**

**Build Overview:**

- 1 plot available and viewed to plot 35
- Component / product / material details: Plastic double-glazed windows and front door
- Contractor details: Window Manufacturer, supply and fitting windows, front doors supplied by site and fitted by Carpentry Contractor
- Quality was inconsistent across the plots seen, with front doors


**Strengths:**

- Brackets to windows had been fitted at 600mm centres max and 150mm from top and bottom of the frame securely fixed to the inner leaf of blockwork.
- Brackets to windows were sloping down and out towards outer leaf to eliminate moisture tracking into property.
- Escape windows had been fitted in the correct locations and installed in accordance with Approved Document B.
- Windows boards were securely fixed.
- Windows had been accurately positioned to sit squarely in their openings.
- Window boards had been protected.


**Weaknesses:**

- Packers had not been installed behind each fixing through the door frame into the masonry as required by the manufacturer.

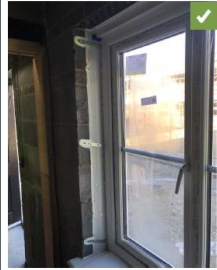
**Photography:**



1) Plot No(s): 35



2) Plot No(s): 35



3) Plot No(s): 35

**Root Causations:**

- Poor - Design / Drawings or details not available / Trades unaware of what should be built
- Poor - Output from trades / Lack of training

The trades did not know that packers were required to the fixings and assumed that foam filler would be suitable. There were no installation instructions or details on site showing the correct method of installation

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5.FIRST FIX - Page 29 of 55  
5.1 Window and door frames  
Site name: Traditional construction - Review Date: 20-02-2023

Construction Quality Review

# Construction Quality Root Causations

**THINK QUALITY**  
GET IT RIGHT FIRST TIME



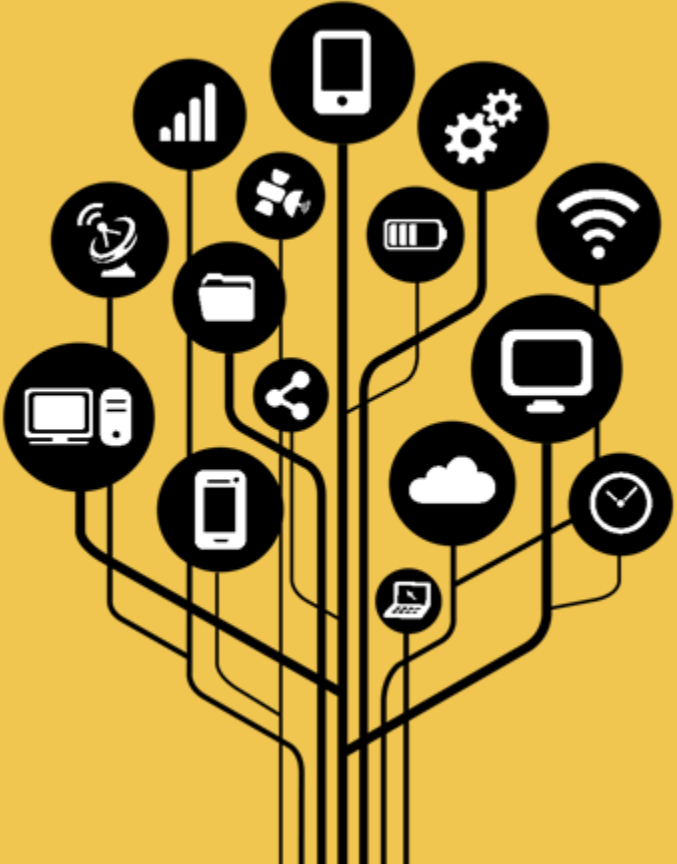
**Processes**



**Culture**



**Communications**





# CQR UK Regional Update



## Results compared to UK regions ranked based on average scores

Rank <sup>1</sup>	Builder	2022		2021	2020	Trend
		(58003 Stages)		(50219 Stages)	(42044 Stages)	(Left to right)
	<b>Industry</b>	4.55	▲ 0.13	4.42	4.28	
1	<b>West Midlands</b>	4.67	▲ 0.16	4.51	4.49	
2	<b>Yorkshire and The Humber</b>	4.63	▲ 0.00	4.63	4.43	
3	<b>South West</b>	4.57	▲ 0.23	4.34	4.20	
4	<b>Scotland</b>	4.57	▲ 0.21	4.36	4.07	
5	<b>Wales</b>	4.57	▲ 0.23	4.34	4.48	
6	<b>East Midlands</b>	4.56	▲ 0.05	4.51	4.43	
7	<b>North East</b>	4.53	▲ 0.00	4.52	4.48	
8	<b>East of England</b>	4.53	▲ 0.12	4.40	4.21	
9	<b>South East</b>	4.52	▲ 0.24	4.28	4.13	
10	<b>London</b>	4.52	▲ 0.03	4.49	4.47	
11	<b>North West</b>	4.50	▲ 0.02	4.47	4.30	
12	<b>Northern Ireland</b>	3.99	▼ -0.19	4.17	4.01	

# CQRs



## 2022 results across the UK

Rank	Build stage	2022			2021	Movement	
		Score variance	Build stages	Average scores	Average scores	Change since last period*	Trend (Left to right)
38	4.4 Ventilation, underfelt and insulation		1344	3.98	3.90	0.08	
37	3.4 DPCs and trays		2227	4.03	3.93	0.11	
36	3.3 Cavities, insulation and soundproofing		2468	4.08	4.01	0.07	
35	3.8 Balconies including fixings and weather proofing		89	4.12	4.09	0.03	
34	5.7 Plaster and dry lining		1288	4.14	4.05	0.09	
33	3.7 Lintels, beams and other structural elements		2000	4.17	3.96	0.21	
32	4.3 Flat roof coverings		69	4.23	4.28	-0.05	
31	2.2 Waterproofing and ventilation		1528	4.24	4.06	0.18	
30	2.4 Ground floor		1681	4.24	4.16	0.08	
29	4.2 Pitched roof coverings		1190	4.28	4.06	0.22	
5	5.8 Fire stopping (First fix)		283	4.87	4.55	0.32	
4	6.3 Joinery		2388	4.91	4.82	0.10	
3	7.1 Internal finishes		2185	4.91	4.91	0.01	
2	5.4 Services – plumbing		2342	4.97	4.83	0.14	
1	7.2 Floor finishes		658	5.07	4.97	0.09	
	<b>Total</b>		<b>58003</b>	<b>4.55</b>	<b>4.42</b>	<b>0.13</b>	

# CQRs



## 2022 results in Northern Ireland

Top focus areas observed from 2022, with comparison to UK wide figures were as follows, based on average score:

Top focus areas*	NI 2022	UK wide	Variance
External envelope including chimneys and flues	3.23	4.52	-1.29 ▼
Framing (including dummy chimneys)	3.26	4.40	-1.14 ▼
Lintels, beams and other structural elements	3.37	4.17	-0.80 ▼
DPCs and trays	3.50	4.03	-0.53 ▼
Cavities, insulation and soundproofing	3.61	4.08	-0.47 ▼

# Inspection



## 2022 Northern Ireland Top Ten Reportable Items (RIs)

REPORTABLE ITEM	2022	2021	Movement on 2021	
External masonry walls, Remove mortar debris from cavity areas, ties	830	561	269	▲
Strip and trench fill foundations, Prepare trench bottom prior to concreting	614	469	145	▲
Timber and concrete upper floors, Inadequate strutting between joists	575	544	31	▲
External masonry walls, Joints not fully filled	245	230	15	▲
Finishes and fitments, Unsatisfactory finishing's or workmanship to internal trim	235	258	-23	▼
Pitched roofs, Inadequate bracing and/or binders provided to trussed rafters	235	124	111	▲
Doors, windows and glazing, Inadequate security provision	234	310	-76	▼
Internal services, Inadequate prevention of vermin entry to soil and waste systems	211	186	25	▲
Internal walls, Inadequate partition support or fixing	208	129	79	▲
Painting and decorating, Unsatisfactory finish of completed work	200	210	-10	▼
<b>Overall</b>	<b>9977</b>	<b>9528</b>	<b>449</b>	<b>▲</b>

# NI Inspection Common Reportable Items (RIs)

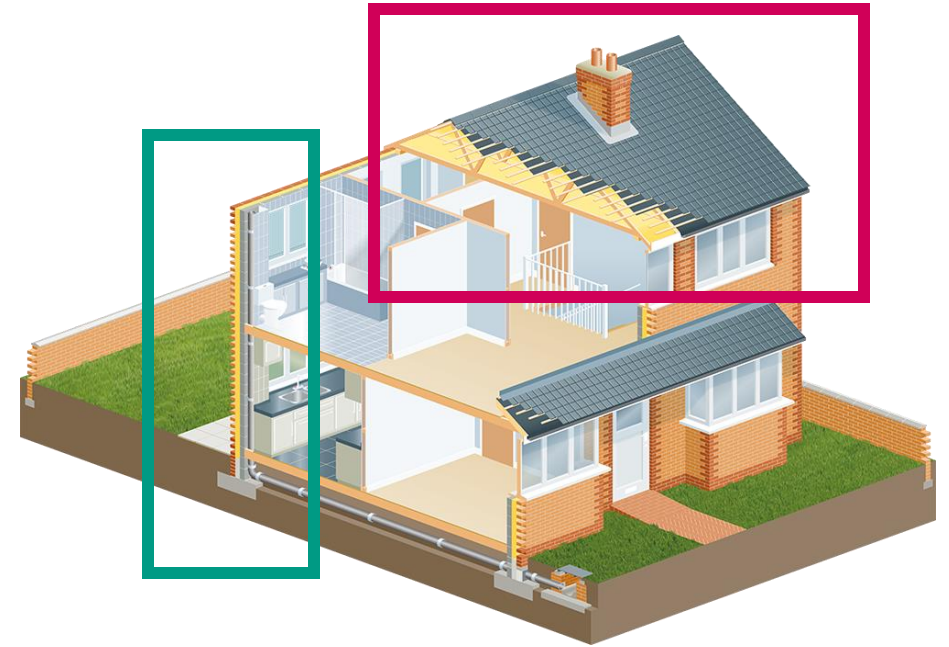


## A significant proportion related to the external envelope

- Debris in cavities and on wall ties
- Incorrect, or missing cavity trays
- Joints not fully filled
- Inadequate weep holes cavity barriers and fire stopping
- Breather membrane and vapour control

## Within roofs

- Inadequate bracing
- Fire stopping
- Spandrel panels



# CQRs



## 2022 results in Northern Ireland

Build stage	2022		2021	Change since last period*	Industry		Score variance
	Build stages	Average scores	Average scores		Positive scores	Difference vs region	
7.1 Internal finishes	34	4.59	4.68	-0.09	4.91	-0.33	
6.3 Joinery	36	4.58	4.81	-0.22	4.91	-0.33	
7.2 Floor finishes	31	4.48	4.61	-0.12	5.07	-0.58	
5.1 Window and door frames	41	4.49	4.90	-0.41	4.71	-0.22	
2.4 Ground floor	22	4.50	4.56	-0.06	4.24	0.26	
5.7 Plaster and dry lining	25	3.64	3.31	0.33	4.14	-0.50	
3.3 Cavities, insulation and soundproofing	33	3.61	3.46	0.15	4.08	-0.47	
3.4 DPCs and trays	22	3.50	3.78	-0.28	4.03	-0.53	
2.5 Drainage (internal and external)	12	3.50	3.62	-0.12	4.73	-1.23	
3.7 Lintels, beams and other structural elements	38	3.37	3.52	-0.15	4.17	-0.80	
2.1 Walls and columns	16	3.31	3.50	-0.19	4.51	-1.20	
4.1 Framing (including dummy chimneys)	34	3.26	3.87	-0.60	4.40	-1.13	
3.2 External envelope including chimneys and flues	43	3.23	3.86	-0.63	4.52	-1.29	
2.3 Sub-floor services and service entries	6	3.17	4.00	-0.83	4.59	-1.43	
5.8 Fire stopping (First fix)	1	2.00	5.00	-3.00	4.87	-2.87	
<b>Total</b>	<b>826</b>	<b>3.99</b>	<b>4.17</b>	<b>-0.19</b>	<b>4.55</b>	<b>-0.56</b>	

# Opportunities for improvement



**Achievable** build program that does not compromise quality



**Formal** quality control processes – move **verbal** communication to **golden thread** of information



Better **engagement** with sub-contractors / internal departments



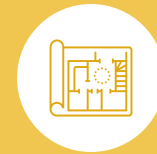
Ensure **accountability**



Ensuring the **right people** with the **right competencies** are in the **right role**



**Monitoring** of materials / process for site waste management plans



**Availability** of drawings / **detailed** design drawings / process for **managing changes** from agreed design



Better **protection** of work in progress and **storage** of materials



# CONSTRUCTION QUALITY: Team Work



**BUILDING FOR  
TOMORROW**  
2023



# Invest the same in 'Quality' as Health & Safety'



# Talk to us today about how our services can help you raise standards.

Linda Flynn MCIQB MCABE

[lflynn@nhbc.co.uk](mailto:lflynn@nhbc.co.uk)

Mobile: 07739 877380

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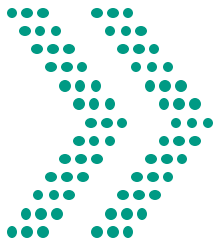
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# Thank you





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