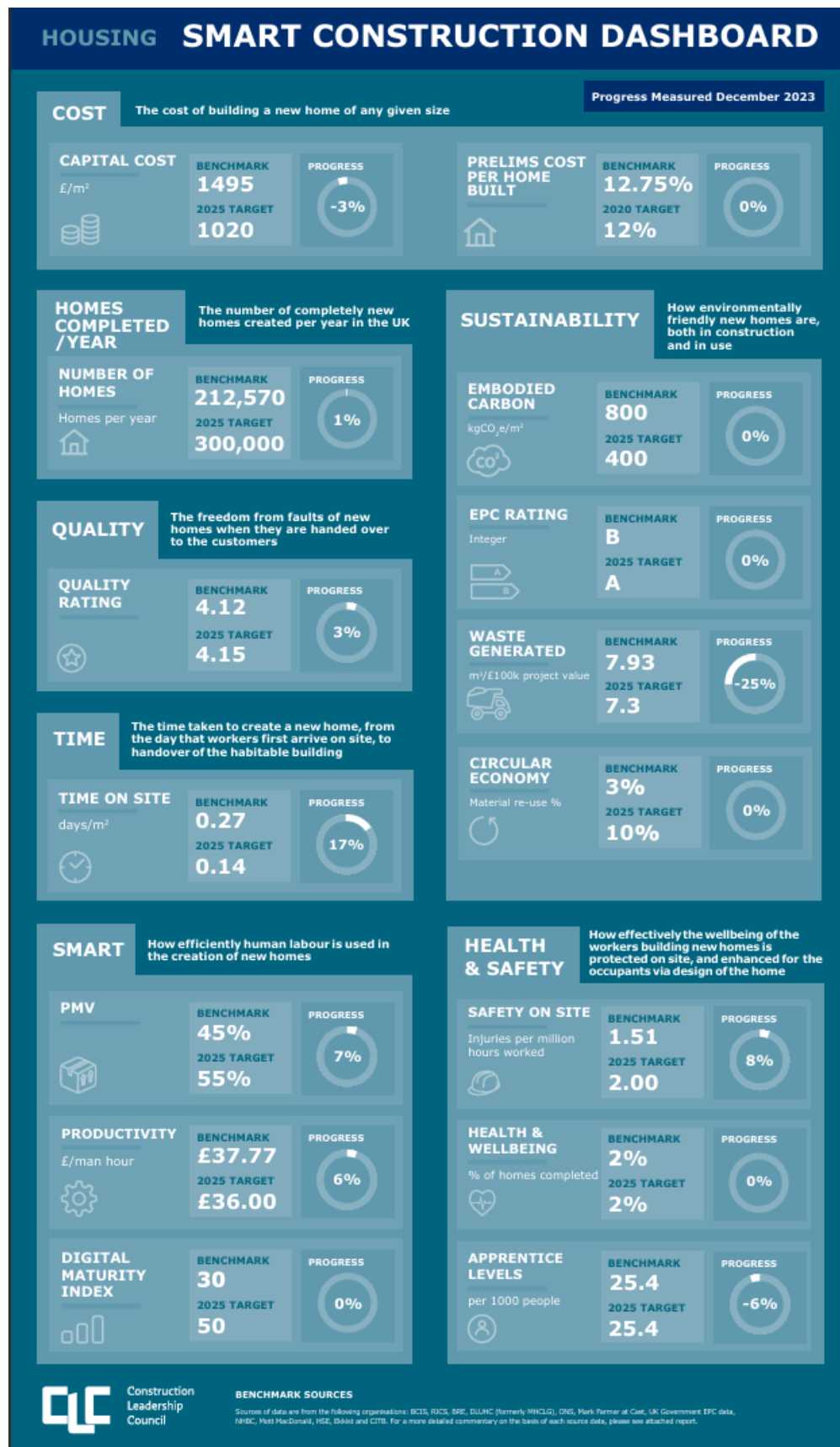


CLC Housing Dashboard – 2023 Report



Introduction

Previous reports published in 2018, 2019, 2020, 2021 and 2022 have provided a 'snapshot' of the state of housing performance in relation to a dashboard consisting of a number of metrics, all of which have been developed under the direction of the Construction Leadership Council (CLC) 'Innovations in Buildings' workstream. The key 'driver' for the completion of the dashboard on an annual basis was to unpin the Construction 2025 report (published in July 2013) as target outcomes to be achieved by 2025. Those headline targets were (and still are):

- 33% lower costs
- 50% faster delivery
- 50% lower emissions
- 50% improvement in exports

The dashboard was therefore created to seek to measure progress against three of the four target figures (not exports) and over those twelve years (2013-2025) – in essence, answering the question, 'how are we doing currently against the three targets?'

It should be noted that this Dashboard only seeks to capture the 'state of play' in respect of **housing** – clearly, a similar dashboard **could** be created for every construction and infrastructure industry functional type of building and/or structure and, indeed, for an aggregate dashboard measure across all functional types. It was thought best to start somewhere and perhaps the 'easiest' functional type was considered to be housing.

The key 'movements' seeking to be measured and reported are therefore as follows:

- **Increase** the number of homes completed per year
- **Reduce** the time on site to build houses
- **Reduce** the capital cost and Preliminaries cost of building
- **Improve** safety in construction
- **Reduce** waste
- **Reduce** defects
- **Reduce** carbon emissions
- **Improve** productivity

Historic work on previous reports

Previous reports (as noted above) and published at that time under the 'BRE' banner set out much of the detail that sits behind the 'headline' metrics that appear on the front page of the Dashboard itself together with the process that was originally undertaken to decide upon which metrics to select and to formulate the basis of measurement and generally the thought process overall.

It is therefore not intended to repeat these sections within the body of this report, but merely to provide a simple overview as to 'how to read' the Dashboard data and to provide the basis of the following for each metric set out in the Dashboard:

- Unit (of measurement)
- Definition of the metric itself
- The information required to 'build' the metric
- A benchmark figure
- The source of any data quoted, with suitable commentary

Dashboard data understanding

In each case, when reading the Dashboard itself, there are three key pieces of data within each metric 'box' or 'section', as follows:

- The '2025 target' figure, this being a figure that has been set originally with a view to achieving the overall 2025 target improvement, when compared with a notional 'starting point' of 2013
- The (current) 'benchmark' figure, this being a calculated current in-year figure for where the industry is believed to be in relation to that particular metric, at the relevant year-end.
- The 'progress' percentage, being a simple measure of the extent of the improvement from the previous report (and where the metric has been in existence in previous years).

In respect of this last point, it should be noted that additional metrics have been added into the Dashboard since it was originally launched, all as set out in the attached report commentary.

2023 report publication – basis

This report is based upon metrics data which has been gathered and which applied during the course of 2023, such that the 'progress measurement date' that appears in the top right-hand corner of the Dashboard ('Progress Measured December 2023').

Given that the previous 2022 report was published in March 2025, and therefore delayed well beyond the relevant date, we observe that this 2023 report is also published later than we had hoped.

Metrics tables

As noted above, the following pages contain a table for each of the metrics and which captures the following information:

- **Unit of measurement** – the basis upon which the metric is calculated and expressed as a rate, number or percentage, dependent upon the nature of the item and the historically understood manner and form in which the metric is measured.
- **Definition** – the descriptor of the metric under consideration – 'what are we considering as a "thing", and seeking to use plain, rather than technical language.
- **Information required** – a fuller description of the basis upon which the metric value is being calculated – and the input data that is going to be required to enable the output figure to be calculated.
- **Benchmark figure** – the calculated figure for the year under consideration, with suitable observations and qualifications over the 'quality' of the figure quoted.
- **Source** – the location of where the foregoing columns are obtained from, with particular reference to the 'benchmark figure'.

In addition to the metrics table in each case, there is a '2022 commentary' section which provides an overview of the changes that have occurred since the last report.

2024 report basis and the future

Consideration will need to be given to the format and structure of the report to be published for data to the end of 2024 and it is expected that we will continue to report on the same metrics as has been included in previous reports.

However, by the time of publication of that 2024 report, we will have arrived at the point of conclusion of the original Construction 2025 Government policy targets (although there is some question as to whether the intention behind the original report was to set targets to be measured to the start or the end of 2025).

This is also of relevance given that there has been a change in Government and a resultant change in the direction of policy in this area. Notwithstanding this, we also intend to publish a 'end-of-term' report which will seek to capture an overview of progress over the life of the dashboard and provide a summary the achievements, all measured to the end of 2025.

Following that, there is going to be the need to design, develop and launch a new dashboard which may well use a different set of metrics and targets and with a new timeframe for delivery of those targets.

What insight can we gain from this?

Our sixth dashboard and data is aimed at showing evidence of the sectors performance. We continually aim to create knowledge and evidence to assist financial, operational, technical functions to enable better decisions to be made when designing, contracting, and delivering new housing stock. We aim to create connections between the different data and produce insight that will improve the sector performance.

This 2023 data Dashboard has been developed with data developed by BCIS, RICS, BRE, Cast, NHBC, CITB, LC Journey, Mott MacDonald and Ekkist and builds on the previous knowledge of the sector and performance.

Despite the increase in material usage per home the speed of delivery of homes has marginally decreased over the course of the year. The reasons for this are unclear, but perhaps the constraints on skills and materials, from a disrupted supply base had an impact on time and performance.

Volumes of homes built were maintained - market volumes stayed broadly the same between 2022 and 2023 with a 1% rise. Private sector volumes reduced year on year, impacted affordability multiples related to interest rate rises.

Healthy new homes maintained the 2025 target - our high bar health and wellbeing measure continued to demonstrate achieving the CLC's 2025 2% target. Whilst there was no growth year on year, drivers are in place like improvements in Part L fabric performance, to enable market share growth.

Cost - continued material and labour inflation increased construction cost of housing by 3%, but below 7.3% wider economy. Both closures (MMC Cat 1) and openings of MMC Cat 2 factories were recorded in 2023. This is one of the first times we have observed an opening of an MMC factory during a housing downturn, potentially recognising traditional housing labour market constraints and flexibility of Category 2 construction techniques. Smart Construction techniques, are yet to demonstrate a wider industrial level impact on cost.

Waste generated reduced by 25% - this is a very encouraging result from a poor performing 2022. 2022 proving to be an anomaly, likely effected by supply factors from

the pandemic. We believe contractors and housing companies are recognising the link between waste and commercial performance.

Digital maturity – has not shown any improvement since last year and the year before that, which is disappointing and continues to be well below our target percentage. We detected that the housing sector lags other sectors on the use of digital technology, particularly related to the small builder deployments.

MMC policies – continue to make an impact with the PMV percentage, as assessed, but no change has been reported this year, and it remains at 45%, this still being some way below the target of 55%.

Safety on site – has improved over the course of this year by some 8%, and it should be noted that this is within the 2025 target. The improvement is possibly born from a renewed focus related to the instigation of the building safety act. Our evidence suggests that safety on site is a cultural norm.

Quality – continues to improve with a further 3% movement, building upon the improvement from the previous year as well and by using the NHBC Quality index. Expected full quality improvements due to scalable use of MMC solutions are yet to feed into the this performance across the sector.

Apprenticeships – a modest decrease from the previous year and now at the 2025 target figure, having been over-achieved in the previous year. This is a very encouraging development as one of the minor measures of greater social value within the sector.

Capital Cost / m²

Capital cost/m ²				
Unit	Definition	Information required	Benchmark figure	Source
£/m ²	Cost associated with construction of the superstructure of a building per metre square of gross internal floor space	Capital cost - cost in £ associated with construction of the superstructure of the building excluding non-construction costs such as marketing etc.	£1,495/m ²	BCIS
		Gross internal floor space – space of a building measured to the internal face of the perimeter walls at each floor level according to RCIS NRM.		

2023 commentary

2022 figure – £1,450/m² (c 3% negative increase)

The cost data noted under this section is a nationally averaged figure and therefore does not relate to any geographically based projects. It is also an average of different types of housing stock combined together.

Given the previous decision to make use of BCIS cost data as the benchmark figure, each year BCIS are consulted on the movement in the 'headline' figure based upon a combination of incoming housing cost data and the movement with the Building Cost Index. This dashboard contains the cost data from BCIS which applied as at December 2023 and it showed an increase of some 3% on the previous year. However, it should be remembered that this percentage increase is common to all industry sectors and does not necessarily relate to housing in particular.

None of the contribution to the increase this year has been derived from the growth in the cost database for housing projects – this is because the modest number of pieces of data that had been received by BCIS. This lack of fresh data, whilst disappointing, is assumed to be a reflection of the fact that housebuilders (in particular) are reluctant to share such sensitive cost data. Accordingly, all of the increase relates to construction inflation over the year.

The percentage increase is more modest over the course of the year in question but is merely a reflection of the general state of the construction economy, rather than any

specific trends within the housing sector and merely reflects construction inflation over the course of the year, which itself mirrors the state of the economy as a whole.

Embodied Carbon

Embodied carbon				
Unit	Definition	Information required	Benchmark figure	Source
KgCO ₂ e/m ²	Amount of embodied carbon associated with the production and transport of materials used in the construction of homes per metre square of gross internal floor space	Embodied carbon – embodied carbon covers greenhouse gas (GHG) emissions that arise from the energy and industrial processes used in the processing, manufacture and delivery of the materials, products and components required to construct a building.	800 kgCO ₂ e/m ² (embodied carbon of products only)	RICS, Methodology to calculate embodied (and operational) carbon – the 2 nd edition was published in September 2023 and became effective from 1 July 2024 (and as such the 'effective date' sits outside the timeframe for this report). This 2023 report therefore still uses the 1 st edition methodology for calculation purposes. See RICS website for further details.

2023 commentary

2022 figure – 800 (no change)

This metric continues to be difficult to update due to the lack of 'real time' carbon assessment data and for this reason the benchmark figure remains unchanged from the previous year.

The basis of calculation of the benchmark noted above was undertaken using the current RICS methodology (1st edition – published in 2017) of the RICS methodology. A 2nd edition was published in September 2023 and will be used as the basis of the

methodology for calculation purposes going forward, and once it becomes 'effective' as from 1 July 2024. However, it should be noted that any figures noted are still notional, based upon the carbon 'properties' of typical building components (generally) and therefore do not relate to housing alone.

Real 'live' and consistent carbon data will only start to become available once the BCIS database (known as the Built Environment Carbon Database (BECD)) becomes populated with project data - this will take some time, given that the BECD was only launched in October 2023.

Days on site

Days on site/m ²				
Unit	Definition	Information required	Benchmark figure	Source
Days/m ²	Elapsed time spent on site per metre square of gross internal floor space	Days –		
		From the first day the first man hour on site was registered with HSE to the last man hour being the last day. This excludes on site surveying, pre-inspecting before construction takes place and demolition. This does not include factory time, or time spent on groundworks or remedial works.	0.27	BRE SmartWaste data source

2023 commentary

2022 figure – 0.23 (c 17% negative increase)

There has been an discouraging change since last year (c. 17%) which builds on the 5% increase from the year before, and continues to move further away from the 2025 target (0.14) making it increasingly unlikely to be achieved within the time available.

Homes completed

Homes completed				
Unit	Definition	Information required	Benchmark figure	Source
Number of homes	Number of homes completed per year	Number of homes completed – Number of permanent dwellings completed	212,570 (2022-23, UK)	DLUHC (formerly MHCLG), house building: new build dwellings statistics *see below for further commentary on these statistics

2023 commentary

The only changes made to this metric were the benchmarks. They were updated using data from the same sources as previously used. The 2023 figure shows a modest improvement (some 1%) from the previous year, but it still remains well below the target set by Government, and that gap remains quite constant. However, the Government (at the time) seemed to have withdrawn during 2022 from a formal policy measure of 300,000 new homes and it remains to be seen what changed political decisions are made in future years.

*It should be noted that the benchmark figure quoted above (212,570) is the pure 'new build' figure and in addition to this are the following further elements:

Change of use to residential: 22,160

Conversions between houses and flats: 4,500

Other gains (caravans, house boats etc): 640

Offset by

Demolitions: 5,470

This results in an overall figure a total figure of 234,400.

Productivity

Productivity				
Unit	Definition	Information required	Benchmark figure	Source
£/man hour	Productivity is the efficiency at which a building is being constructed looking at the ratio of gross value added to man hours recorded on site. It is calculated as GVA (Gross value added)/MH (man hours) reflected as £ / man hour.	Gross Value Added – The value generated by any unit engaged in the production of goods and services Man hours – Number of hours worked.	£37.77/hour (for 2023)	Based on ONS data for output and hours worked

2023 commentary

2022 figure - £35.67/hour (c. 6% improvement)

This benchmark figure for 2023 has had to be taken from a different ONS data source and is a manual calculation using two separate data figures: (1) the total value of construction (table 1.4 - £93,768,000,000) and (2) the total number of man-hours worked in construction (table 3.6 – 1,439,100 industry workers) and making a calculated assumption as to the total number of hours worked by those workers (2,482,447,500), the resultant answer is the benchmark figure noted above.

However, a word of caution should be expressed given that the data source has changed since 2022 (given that the previous data source is no longer published in that form). We believe that we have used a broadly similar methodology which result does show a strong correlation with the previous data sources figures.

Mindful of that proviso, the 2023 figure shows a modest improvement on that for the previous year and is at some 6% uplift, which takes it over the 2025 target of £36/hour.

Pre-Manufactured Value

Pre-manufactured value (PMV)			
Definition	Information required	Benchmark figure	Source
Pre-manufactured value captures the value that is created as a result of completing work away from the site. It is calculated by taking the gross construction cost of the project and deducting the prelims - sometimes referred to as site overhead costs - and the total site labour costs. The result of this is then divided by the gross construction cost and is reflected as a percentage.	Gross construction cost - The total construction cost of a project excluding associated design and other consultancy fees but including an allocated main contractor overhead and profit margin or integration fee (even if delivered within a developer / contractor model which returns a combined development gross margin) Preliminary cost (Site overhead cost) - Generally, all site-based overheads and as defined in Group element 9 of RICS New Rules of Measurement NRM1. This should include a pro rata allocation of overhead and profit margin or integration fee as above. Site labour costs - The total cost of site labour expended on the construction site. This is the summation of all labour only sub-contract packages plus the labour & plant cost component (when plant, temporary works etc not included in preliminaries as defined above) of combined labour and material sub-contract prices. This is to include general labour, tradesmen, supervision and any management not recovered through central overhead.	45%	Information from Mark Farmer, Cast

2023 commentary

2022 figure – 45% (no change)

The definitions used in this metric were updated, following the publication of the Mark Farmer definition and methodology for the calculation of PMV. However, the benchmark figure included remains only an assessment of progress made in the previous year, and in the case of 2023, it is believed that no material change has occurred since last year.

Until a database of PMV figures are kept and are readily available, this benchmark figure can only remain an assessment against a target to be achieved by 2025 (that target being 55%).

EPC rating

EPC rating			
Definition	Information required	Benchmark figure	Source
Energy Performance Certificates record how energy efficient a property is and what its environmental impact is, using A-G ratings (A – being the most efficient/environmentally friendly and G – the least).	Average EPC rating for houses built	B (SAP rating 81-91)	Using Government data on EPCs lodged, Table NB1 – Number of New Dwelling Energy Performance Certificates lodged on the Register in England & Wales by Energy Efficiency Rating. Average value calculated by giving a value 1-7 to A-G ratings respectively, calculating an average score from these and rounding to the nearest whole figure

2023 commentary

2022 rating – B (no change)

The content of this metric remains unchanged, including the benchmark. This is because a rating 'B' is still the most common rating by far and we have no better data to be able to provide any different figure.

It has been suggested previously that this metric should be broken up into different property types, and broken down into refurbishment and new build projects, although nothing continues to be done this year in that respect.

Quality rating

Quality rating				
Unit	Definition	Information required	Benchmark figure	Source
%	Quality of homes is captured by looking at the cost of post-completion defects of a building as set out by the NHBC over the total capital cost. In short it is calculated as 1 (one) minus the cost of post-completion defects over the total build cost, reflected as a percentage	Capital cost - cost in £ associated with construction of the building excluding non-construction costs such as marketing etc. Cost of post-completion defects	4.12	NHBC survey data

2023 commentary

2022 figure – 3.98 (c. 3% improvement)

As noted in previous reports, this metric has limitations because any measure of the number of defects present in a completed house does not necessarily take account of the following factors, amongst others:

- Post completion defects do not necessarily become apparent until sometime after completion and occupation, and the gathering of such data is more 'suspect', the longer the passage of time.
- The data on the extent of defects present at the point of completion does not necessarily include those defects that have already been rectified by the Developer or Builder as part of the 'snagging' process (and therefore the existence of the defect not becoming 'public knowledge')
- The severity of the defect is not captured and/or the impact on the occupier of the property.

For the foregoing reasons, we have previously (in 2022) moved away from the initial data source and have moved to the NHBC construction quality review (CQR). The CQR is calculated as an average taken from statistics on items identified during construction, the quality of construction and customer feedback.

The benchmark for 2023 continues to show a further improvement from last year (c. 3%) which itself was an improvement from the year before that, which continues to be an encouraging movement towards the 2025 target of 4.15 – indeed, this 2023

benchmark is now very close to that target and it is hoped that it might be achieved in the 2024 report.

Digital maturity index

Digital maturity index				
Unit	Definition	Information required	Benchmark figure	Source
Score based on self-assessment out of 100	The Index considers maturity across a range of factors	Self-assessment against factors within index	30	Mott MacDonald Smart Infrastructure Index for residential properties

2023 commentary

2022 figure – 30 (no change)

This metric was originally labelled as 'BIM Level 2' but the feeling in the working group was that this may reflect certification rather than maturity. Maturity however is hard to measure, and the tool that was decided upon to understand maturity better was the residential element of the Mott MacDonald Smart Infrastructure Index. The benchmark of 30 was set in 2021 as this reflected a score in the upper tier of the residential self-assessments being completed at that time.

There is no change for the 2023 benchmark (as was the case with the 2022 figure as well) which remains at 30, which continues to be disappointing, given the 2025 target was originally set at 50. This has been set for the sector to reflect the need to keep pushing and encouraging the digital transformation, given its role at critical stages of construction, such as design, and the wider opportunities it creates to drive productivity and quality improvements and understand performance.

Waste generated

Waste generated				
Unit	Definition	Information required	Benchmark figure	Source
Volume (m ³) construction waste/£100K project value	This measure looks at the ratio of volume of construction phase waste that has been generated in the construction of the home represented for every £100k of the capital cost	Total volume of construction phase waste produced in m³ - This includes waste from construction phase only Capital cost – - cost in £ associated with construction of the building excluding non-construction costs such as marketing etc	7.93	BRE SmartWaste data based on median value for new build residential projects completed during 2021.

2023 commentary

2022 figure – 10.58 (c. 25% improvement)

The updated figure from SmartWaste is 7.93 (compared to 10.58 previously), which represents a very encouraging improvement this year of some 25%. This very positive movement indicates that the volume of waste generated is moving much closer to the 2025 target of 7.3, and it is hoped that this might be achieved in the 2024 report.

It is difficult to establish why there should have been such a good improvement over the course of the last year, given that the trend has been the other way for a number of years. Perhaps this might be a reflection of the 'waste message' being increasingly heard and acted upon.

ISO 9001 accreditation

Now dropped

2023 commentary

Given that the relevance and value of this metric has previously been questioned and that ISO 9001 is a measure of productivity and quality, it has been suggested that there is considerable overlap with other existing metrics.

In addition, it should be noted that the housing sector does not follow ISO 9001 as much as other industry sectors.

For these reasons, this metric has been dropped in previous years and continues to be so this year as well.

Safety on site (stated in previous reports as 'RIDDOR')

Safety on site (stated in previous reports as 'RIDDOR')				
Unit	Definition	Information required	Benchmark figure	Source
Injuries per million hours worked	The frequency rate is the number of people injured over a year for each million hours worked by a group of employees or workers	Number of injuries per year (as reported as per RIDDOR) Total hours worked per year OR Average weekly hours worked	1.51	Calculated as per Injury Frequency Rates guidance from HSE using injury rates from RIDIND: Reported injuries by detailed industry for 2017/18 and mean paid hours worked for Construction of Buildings from ASHE Table 4.9a for 2021P

2023 commentary

2022 figure – 1.65 (8% improvement)

The basis of the benchmark data has been set for some time and is commonly used within the industry. However, one problem has been highlighted with this metric in that it does not apply to all incidents as it only applies to those with RIDDOR criteria.

Notwithstanding this 'flaw', the benchmark data shows an encouraging improvement of some 8% in this reporting year, and has just achieved and passed the 2025 target, which is an excellent result. As with the commentary on the 'waste message', likewise, the message in respect of site safety is also heard.

Prelims cost per home built

Prelims cost per home built				
Unit	Definition	Information required	Benchmark figure	Source
%	This looks at the costs attached to prelims in construction which can be sometimes referred to as 'site overhead' divided by the total cost per home built reflected as a percentage	Preliminaries costs (£) - As defined in RICS NRM1 for Main Contractors Capital cost – - cost in £ associated with construction of the building excluding non-construction costs such as marketing etc	12.75%	RICS/BCIS

2023 Commentary

2022 figure – 12.75% (no change)

Information on preliminaries as a percentage of capital cost is available from the cost data base held by BCIS although this would have to be a considerable manual exercise as the Preliminaries cost data is not available digitally. Accordingly, the benchmark percentage quoted has taken a very small sample of housing projects and averaged the results to arrive at a very 'crude' benchmark.

The figure continues to remain the same as last year and the year before that, as there is very little movement in the size of housing cost data, which would serve to impact the figure.

As noted elsewhere in this report, this metric is linked to that for Pre-Manufactured Value (PMV) in that any increase in that metric should serve to reduce the percentage of cost incurred on site-based Preliminaries. However, there is no meaningful data available to demonstrate that potential correlation.

Health and well-being

Health and well-being				
Unit	Definition	Information required	Benchmark figure	Source
%	This looks at the percentage of new homes completed where the workforce (during construction) and the occupants of the home subsequently have indicated that they feel that this aspect has been adequately addressed and achieved. This is a certification process and includes 2021 data from: 1. WELL Building Standard 2. Fitwel 3. HQM 4. Passivhaus 5. Airscore 6. Immune Standard	Survey feedback data and then a combination of data sources aggregated to the current benchmark figure	2%	Ekkist

2023 Commentary

2022 figure – 2% (no change)

The 2025 target figure of 2% has been achieved this year (as it did last year) but there continues to be no change from the previous year. As noted previously, a word of caution needs to be made given that the source data is no longer able to be filtered for residential projects.

Circular economy (material reuse)

Circular economy (material reuse)				
Unit	Definition	Information required	Benchmark figure	Source
%	This looks at the percentage of the value of new properties where the materials have been able to be reused or designed with that intention in mind, both at the end of life of the property reflected as a percentage	Actual or assessed percentage of materials that have or could be reused at the end of life	3%	Green Thinking Limited

2023 Commentary

2022 figure 3% (no change)

Information on this element is generated as an assessment of potential reuse proportion against a 2025 target of 10%, but the current benchmark of 3% remains unchanged from last year and from the reporting year before that. This metric is at best an estimate of what might have been achieved in this area.

Currently, there are two formal methods of assessing the benchmark figure: either by value or by mass and the favoured method is by value, although this approach disregards the (perhaps) more logical method of using the mass of the items, given that this might encourage the reuse of heavier items.

Apprentice levels (previously Social value)

Social value				
Unit	Definition	Information required	Benchmark figure	Source
Per 1,000 people	This looks at the number of apprentices generated across projects expressed as a proportion against 1,000 regular workers	Feedback and data received from project work sites in respect of the number of apprentices retained on any particular project site	25.4%	CITB

2023 Commentary

2022 figure – 26.8% (negative movement of c. 5%)

Clearly, the measurement of the number of apprentices generated in any one year is only one possible (and minor) aspect of social value that could be measured. Given that this metric revolves around the need to demonstrate the 'give back' to society as a whole, it is suggested that this has limited traction in the wider context.

However, the 2025 target is 25.4/1,000 people and the benchmark figure for this year dropped back to align with having achieved the target, albeit with some slippage from the previous year which had exceeded the 2025 figure.