Office for National Statistics

Construction output QMI

Quality and Methodology Information for construction output in Great Britain, detailing the strengths and limitations of the data, methods used, and data uses and users. These statistics are short-term measures of output by the construction industry with a breakdown of different types of construction work. These data are published monthly and are sourced from the Monthly Business Survey for Construction and VAT returns.

Contact:

Release date:
8 August 2019

Next release:
To be announced

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1 . Output information

National Statistic	
Survey name	Construction Output in Great Britain
Frequency	Monthly
How compiled	Survey and Administrative data
Geographic coverage	Great Britain
Sample size	8,000
Last revised	9 August 2019

2 . About this Quality and Methodology Information report

This quality and methodology report contains information on the quality characteristics of the data (including the European Statistical System five dimensions of quality) as well as the methods used to create it.

The information in this report will help you to:

- understand the strengths and limitations of the data
- learn about existing uses and users of the data
- understand the methods used to create the data
- help you to decide suitable uses for the data
- reduce the risk of misusing data

3 . Important points

- Data are sourced from the Monthly Business Survey for Construction (also known as the Construction Output Survey) and Value Added Tax (VAT) returns, which collect value of work broken down by type of work from businesses in the construction industry within Great Britain; the survey's results are used to produce estimates for Construction output in Great Britain.

- Data are published in current prices and chained volume measures (removing the effect of changes in price) on both a non-seasonally and seasonally adjusted basis; these series are available on a monthly, quarterly and annual basis.

- Data since Quarter 1 (Jan to Mar) 2010 have been published by the Office for National Statistics, however, longer time series are published under different methodologies for the period pre-2010; under these different methodologies it is possible to view current price, non-seasonally adjusted data from 1955 and chained volume measure, seasonally adjusted data from 1997.

- As of 7 March 2019, the statistics are now re-designated as National Statistics .

- Data at subnational and sub-sectoral are also published; this split is modelled from ONS new orders in construction data.

- Since December 2017, VAT turnover data have been used to estimate the output of selected small and medium-sized businesses; while less timely than the survey data, VAT turnover data provide an improvement in quality due to the increased number of businesses with actual data in comparison with the survey.

4 . Quality summary

The survey measures the value and volume of output in the construction industry each month. The Monthly Business Survey for Construction was introduced from January 2010, replacing the earlier Quarterly Inquiry of Activity for Construction and Allied Trades, and the Building and Civil Engineering Employment and Output Inquiry.

The survey collects output by sector from businesses in the construction industry within Great Britain. In 2008, the responsibility of these statistics transferred from the Department of Business, Enterprise and Regulatory Reform (BERR), now the Department for Business, Energy and Industrial Strategy (BEIS), to the Office for National Statistics (ONS).

The Inter-Departmental Business Register (IDBR) is used as the sampling frame to select 8,000 businesses each month, which are sent a questionnaire to be completed and returned to the ONS. Returns for businesses that do not respond are imputed and the data are weighted to provide estimates for the full population. Statistical disclosure control methodology is applied to avoid identifying any individual organisations.

Value Added Tax (VAT) turnover data sourced from Her Majesty's Revenue and Customs (HMRC) have also been used to inform construction output estimates from December 2017. While less timely than the survey data, it provides improved estimates of small and medium-sized businesses due to the amount of businesses with VAT data in comparison with the numbers sampled on the survey.

Construction output is defined as the amount chargeable to customers for building and civil engineering work done in the relevant period excluding VAT and payments to subcontractors.

The survey's results are used to produce non-seasonally and seasonally adjusted monthly, quarterly and annual estimates of output in the construction industry at current price and at chained volume measures (removing the effect of changes in price). The estimates are widely used by private and public sector institutions, particularly by the Bank of England and Her Majesty's Treasury, to assist in informed decision-making and policy-making.

Construction output is an important economic indicator and is also therefore used in the compilation of the output approach of gross domestic product (GDP). Based on the current gross value added (GVA) weight, construction equates to 6.0% of the economy.

Data at subnational and sub-sectoral level are also published in current prices on a non-seasonally adjusted basis. This information is not collected directly from the Construction Output Survey for logistical and burden reasons. Instead, this split is modelled from new orders data via project-level information collected from Barbour ABI. These data map the specific duration of projects, and factor in the project start date and lag time from the order being placed to the project commencing. Please note these statistics are not badged as National Statistics.

The Monthly Business Survey questionnaire is split into five sections, as detailed in Table 1.

Table 1: Monthly Business Survey – Construction questionnaire

Section A	This section asks for information on housing work with a breakdown of new work and repair and maintenance. Within this section we also ask for a split of work for public sector clients (questions 5 and 6) and work for private sector clients (question 7 and 8).
Section B	This section asks for information on infrastructure with a breakdown of new work and repair and maintenance.
Section C	This section asks for information on non-housing work excluding infrastructure with a breakdown of new work and repair and maintenance. Within this section we also ask for a split of work for public sector clients (questions 15 and 16) and work for private sector clients (question 17 to 19).
Section D	This section asks for information on the total value of work. This is the sum of sections A to C.
Section E	This section provides users with a comments box and asks for contact details.

Source: Office for National Statistics

Uses and users

The data published in the Construction output statistical bulletin are used by a variety of different users. These include:

- national accounts, where estimates are fed into the GDP monthly estimate and quarterly GDP as part of the first quarterly estimate and quarterly national accounts estimates
- Eurostat, to comply with statutory requirements as part of the short-term statistics regulation and to allow comparison and analysis of competitive performance across all member states across the EU
- industry analysts requiring estimates of the construction industry output of Great Britain
- trade associations making UK and international comparisons
- other government departments in helping to inform policies – these other government departments include: Department for Business, Energy and Industrial Strategy (BEIS), Bank of England (BoE), HM Treasury (HMT) and the Ministry of Housing, Communities and Local Government (MHCLG)

Strengths and limitations

Strengths of the construction output data

Timeliness of the survey – the estimates for the latest reference month are published approximately six weeks after the end of the period.

Type of work breakdown allows users to analyse trends in specific work types – the types of work published in the release are described in Annex 1 and in Types of construction work (PDF, 77.3KB).

Time series availability – a monthly chained volume measure, seasonally adjusted series is available from January 2010 to present and the survey also provides construction output in non-seasonally adjusted current prices from 1955 to present.

Coverage of larger businesses – businesses with greater than or equal to 100 employees, or 10 to 99 employees with turnover greater than or equal to £60 million per year, are sampled period-on-period; this allows a high coverage in terms of turnover within the industry.

Response rates to the survey – at the time of the latest monthly construction output publication, the approximate response rate for the latest month is nearly 80% based on turnover coverage; these response rates are published within Table 11 of the output in the construction industry dataset in the statistical bulletin each month.

Based on the Eurostat guidance, the methodology used to measure the industry is an “A method”; this is the best possible method available and compared with other member states across the EU; we are the only member state to adhere to the A method methodology.

Our survey is the largest and broadest-ranging survey of the construction sector both across government and within the private sector.

Limitations of the construction output data

Question definition for the value of work supplied by businesses. The questions surveyed on the questionnaire ask for a business to return the value of work for a specific period. Whilst the question is clear in terms of what to include and exclude as part of this definition, along with contact details for businesses to contact the office to query their returns, it is sometimes the case that there can be inconsistency as to what is provided. For example, within the questions asked, payments to subcontractors are specifically asked to be excluded to avoid double-counting. This is because if we also sample the subcontractor we may have this work captured twice, that is, by the contractor and subcontractor.

Clarity between the types of work breakdown. Some businesses are involved in multiple types of work in the construction industry and sometimes across both the public and private sector. Therefore, the ability to break down this work undertaken to the definitions we survey on the questionnaire is sometimes difficult to provide. This information is also sometimes not always collected by the business and in a manner that is easily to hand.

Coverage of businesses under the Value Added Tax (VAT) and Pay As You Earn (PAYE) threshold. The sampling frame used in the production of the Construction output estimates is the Inter-Departmental Business Register (IDBR). The IDBR is a comprehensive list of UK businesses used by government for statistical purposes covering 2.6 million businesses in all sectors of the UK economy. It does not cover very small businesses (those without employees and/or with turnover below the tax threshold) and some non-profit making organisations. Therefore, in the survey, the published estimates would not include estimates of unrecorded output. This is work carried out by sole proprietors who do not pay PAYE and are below the VAT threshold and therefore will not feature in the sample.

Exclusion of UK Standard Industrial Classification 2007: SIC 2007 41.1 “development of building projects”. In terms of the UK SIC 2007 section F construction, the survey has full coverage apart from UK SIC 2007 41.1 “development of building projects”. This is consistent with other national statistical institutes and originates in the type of activity this SIC undertakes. Property developers tend to subcontract work to other businesses in the construction sector that carry out the actual building activity. Businesses are asked to exclude any subcontracted work to avoid any double-counting. Output does not include payments made to architects or consultants from other firms – this would cover engineers and surveyors. Output would, however, include wages paid to such people if they were directly employed by the business.

Recent improvements

In recent years there have been numerous improvements to construction output in Great Britain estimates. These are detailed in this section.

Following the announcement by the UK Statistics Authority on 7 March 2019, Great Britain construction output statistics have been re-designated as National Statistics in accordance with the Statistics and Registration Service Act 2007 and signifying compliance with the Code of Practice for Statistics. This assessment also covered Construction Output Price Indices and Construction new orders. This means the independent regulator has judged that these statistics provide the highest levels of “trustworthiness, quality and value”.

As part of the ongoing Office for National Statistics (ONS) Construction Statistics Development Programme to regain the National Statistics status, we have worked closely with the Construction Statistics Steering Group (CSSG) and the Consultative Committee on Construction Industry Statistics (CCCIS). These groups provide a forum for the ONS to engage with main users of construction statistics on the development of ONS-published construction statistics, including other government departments, industry experts and academics, to identify areas for improvement.

We have recently published a series of methodological articles to help communicate these recent improvements.

Construction development: Impact of improvements to construction statistics, published on 29 September 2017. This article details improvements to the output price indices, including the incorporation of a mark-up for profit margin, a revised methodology for the labour series, new weights and data sources, and a full review of the methodology used. For further information, please see the Construction Output Price Indices Quality and Methodology Information report.

Improvements to construction statistics: addressing the bias in early estimates of construction output, published on 4 June 2018. This article addresses the upward bias in early construction output survey data, which was achieved by improving imputation methodology to impute data for businesses that have not yet returned their survey responses, along with a further adjustment to address additional bias in early estimates. For further information on the impact of these methodological changes, please see Impact of the improvements to construction statistics, published on 29 June 2018.

Construction development: improvements to regional and sub-sector level estimates, published on 4 June 2018. This article highlights improvements made to the model used to estimate subnational and sub-sectoral level output estimates, by improving the assumptions used using project-level data sourced from Barbour ABI. This results in subnational and sub-sectoral level data that are more reflective of what is happening within the economy.

Construction statistics development: improving the understanding of new orders in the construction industry and the gap between output and new orders, published on 30 October 2018, provides analysis to improve the understanding of the uses of and coherence between ONS construction output and new orders data. For more information, please see the New orders in construction Quality and Methodology Information report.

Conceptual and methodological differences between private housing construction output and gross fixed capital formation private sector dwelling, published on 31 May 2019 provides an explanation as to why construction output related to private housing is not equal to investment expenditure on dwellings. This has been done by analysing their components and how the statistics are calculated.

VAT turnover data are also used to supplement construction output survey data. This is part of the transformation of short-term output indicators to make more use of administrative data to help inform the estimates. By using VAT turnover data for selected industries, we are now able to use actual data from approximately 85,000 businesses in comparison with the 2,400 units it replaces. Further information on the use of VAT turnover and its impact can be found in the following articles:

VAT turnover implementation into national accounts article (published on 22 December 2017)

VAT turnover in national accounts: background and methodology (published on 19 March 2018)

Quality assurance of administrative data (QAAD) report for Value Added Tax turnover data (published 11 April 2019)

5 . Quality characteristics of the construction output data

Relevance

Office for National Statistics (ONS) construction output data are regularly assessed as part of an ongoing quality assurance programme from the Office for Statistics Regulation (OSR). Previous consultation details are captured in this section.

The statistics have also been assessed against the standard set out in the statutory Code of Practice for Statistics . The first UK Statistics Authority assessment to assess the suitability of the output was conducted in 2012. The findings from the assessment can be found within Assessment report 170.

The next UK Statistics Authority assessment of the relevance of the statistics was conducted in 2014. The findings from the assessment can be found within Assessment report 280.

Construction output statistics have recently been re-assessed by OSR. This consultation also covers the ONS's construction new orders and Construction Output Price Indices. The public consultation closed for responses as of December 2017. As a result of the work programme to develop and improve the statistics, as of 7 March 2019 the statistics have been re-designated as National Statistics status.

All issues relating to the collection and dissemination of construction output statistics are discussed with users through two separate forums:

- the Consultative Committee on Construction Industry Statistics (CCCIS) – this is a joint forum that meets biannually and consists of members of the industry, academics, the Department for Business, Energy and Industrial Strategy and the ONS
- the Construction Statistics Steering Group (CSSG) – this is a group of other government departments, industry experts and academics who provide comment and input into recent development work on the survey and statistical products; due to the nature of data being discussed, all attendees are required to sign a confidentiality declaration to ensure data are not discussed and disclosed outside this forum

Accuracy

The total error in a survey estimate is the difference between the estimate derived from the data collected and the true (unknown) value for the population. The total error consists of two main elements; sampling error and non-sampling error.

The survey obtains its samples from the Inter-Departmental Business Register (IDBR), which is a database of UK businesses maintained by the ONS. Northern Ireland businesses while not selected for the survey are included on the IDBR.

The sample is periodically reviewed by ONS methodologists to ensure optimality. Targeted survey response rates are set at 65% by number of questionnaires and 79% by turnover coverage. Respondents are sent reminder letters to encourage response and are also contacted by telephone to achieve the response targets. Enforcement of persistent non-responders can also be implemented if required. Response rates at the time of publication are included for the current months and three months prior within Output in the construction industry Table 11.

Sampling error

The sampling error represents the error that arises because the estimate is based on a survey rather than a census of the population. Sampling error is minimised for the Monthly Business Survey using a scientifically chosen sample, which is reviewed and refined periodically. Sampling error is continually monitored with standard errors and coefficients of variation calculated for each output question asked.

Standard error

The standard error is a measure of the level of sampling error we expect to see, based on the design of our sample and our underlying assumptions about the population being studied. In the case of the construction output statistics, there is an underlying assumption that the distribution of companies within the sample is normally distributed. As such, we expect to find the true value for output within plus or minus 1.96 standard errors of our estimate 95% of the time.

For example, based on May 2019 data, total output in current prices and on a non-seasonally adjusted basis from the survey data was £14,537 million with a standard error of £180 million.

Coefficient of variation (CV)

This is estimated by the standard error of a variable divided by the survey estimate. This is used to compare the relative precision across surveys or variables.

The CV is effectively a measure of the size of our confidence intervals relative to the value being estimated. To give an example: being confident that output is £1,000 million plus or minus £10 million is far more meaningful than saying that output is £11 million plus or minus £10 million, despite the standard error being the same in both cases.

Inherently, due to the difference in the size of different sectors of construction, we cannot survey all businesses equally without it being an undue burden on certain types of business. As such, the CV will vary between different outputs being predicted, due to the composition of the sample and the size of the sectors being surveyed.

Estimated standard errors and CVs are available for sector estimates published in Output in the construction industry Table 8.

Non-sampling error

Non-sampling errors cover all errors unrelated to sampling methodology. Specific examples to the construction output release are detailed in this section. Non-sampling error is minimised through comprehensive input and output editing processes within the various ONS teams responsible for these areas but can be difficult to quantify.

These actions range from ensuring wording of questions is as clear and simple as possible, right through to enforcement actions being taken in the courts against companies that fail to respond to statutory surveys. A non-sampling error will usually force us to use a value imputed from the present and historical data to replace the missing values. These imputation methods are further described in Table 3. The rate of imputations is also published monthly in Output in the construction industry Table 8.

Response rate

The response rate gives an indication of the likely impact of non-response error on the survey estimates. The issue with missing responses is that there is a potential for “non-response bias”.

An example of this could be that smaller businesses may be more likely to respond in a timely manner to our survey than a large multi-national company. This may be because their activity takes place in a single sector, whereas a larger firm may operate in multiple sectors in multiple regions across the UK and it takes more time to coordinate their response. As such, this would bias our data towards the smaller companies. As previously said, steps are taken to minimise the burden of the survey and maximise the response rate. The lower the response rate, the higher the chance that some form of non-response bias will be present in the output.

To adjust for this non-response bias and higher imputation rate for non-response, an adjustment is applied to the early estimates of the survey data. Based on historic data, a decaying multiplicative adjustment is applied to the data to account for the remaining bias, where a large adjustment is applied for the latest month in comparison with the subsequent months. This adjustment is applied at the aggregate level and seeks to address the remaining bias caused by late responders differing in their characteristics from early responders.

For further information, please see Sections 6 and 7 of the article Improvements to construction statistics: Addressing the bias in early estimates of construction output, published on 4 June 2018.

Overall response rates are published in Output in the construction industry Table 11. These include the latest reference month and the subsequent three months at the time of the latest construction output release.

Response accuracy

It is difficult to accurately quantify the effect of response inaccuracy. We are aware of possible issues over concepts and definitions collected, however, we try to explicitly state what is required to be included and excluded from the business on the questionnaire. Further attempts to validate and quality assure response is achieved through a mixture of telephone conversations with businesses and written follow-ups to ensure an audit trail to assist future validation of the business if required.

Classification changes on the IDBR

Industry reclassification (moving from one UK Standard Industrial Classification 2007: SIC 2007 to another) can occur due to a relatively small change to the nature of a businesses’ activity, but can have a significant effect on estimates.

When a survey does not cover the whole business population, as with the monthly Construction Output Survey, industry reclassification can lead to units moving in and out of scope of the sample. Likewise, movement of employment can affect estimates as the businesses is reclassified from one stratum to another. This can be problematic when a business is reclassified from sampled stratum with weighting applied to a fully enumerated stratum or the other way around.

We minimise this error by ensuring that main respondents to sectors remain in the sample period-on-period by having a census of all businesses with employment greater than or equal to 100 employees or employment of 10 to 99 employees and annual turnover of £60 million or more.

In addition, the correction of misclassified businesses can lead to bias, particularly when there is systematic movement from one industry to another. This is because, where classification updates are identified via survey returns, it is only units in the survey sample that are updated.

Coverage errors

The coverage of the monthly Construction Output Survey is impossible to assess, because it is not possible to identify all businesses that undertake construction activity across the economy. Consequently, as the IDBR classifies businesses' activity based on primary economic activity, the coverage of the survey is generally assessed by using the enterprises' turnover or employment as a reference.

This method ensures a numerical number can be applied to coverage but must be viewed with caution, as it would exclude firms not classified to the construction sector that may be conducting construction themselves. For a full breakdown of UK SIC 2007 coverage for the Monthly Construction Survey, please see Annex 2.

Reliability

Assessing the difference between the first published estimate and the final revised figure provides an indication of reliability. Monthly construction output data are revised subject to the National Accounts Revisions Policy. The available period for revisions is announced ahead of time to ensure confidence in the reliability of the values being given.

Revisions are separate to corrections, which are unplanned changes announced by the ONS upon the discovery of errors in our output. Corrections should always be clearly labelled as such, rather than simply included with revisions, as in accordance with the National Accounts Policy.

When open for revisions in the monthly publication, a section describing these revisions in further detail is added to assist users' understanding.

Revisions can be made for a variety of reasons, the most common include:

- late responses to survey returns or Value Added Tax (VAT) turnover data, or changes to original returns
- imputations being replaced by actual data
- revisions to seasonal adjustment factors, which are re-estimated every month and reviewed annually
- HM Revenue and Customs (HMRC) VAT returns replacing Monthly Business Survey (MBS) data for small- and medium-sized businesses when VAT estimates become available each quarter
- revisions to the input series for the Construction Output Price Indices

More information on monthly construction output revisions are published each month in the statistical bulletin in the form of revisions triangles. These are published in the form of one-month growth and three-month growth.

Coherence and comparability

To understand the comparability of construction output data it is worthwhile to understand the history of the data and discontinuities in terms of the data collection. The construction survey began in 1955, with the Board of Trade (later the Department for Trade and Industry (DTI)). Responsibility later transferred to the Department for Business, Enterprise and Regulatory Reform (BERR) before its amalgamation with the Department for Innovation, Universities and Skills (DIUS) to create the Department for Business, Innovation and Skills (BIS), now the Department for Business, Energy and Industrial Strategy (BEIS).

Survey responsibility was transferred to the Office for National Statistics (ONS) in March 2008. In June 2009, we announced major changes to the arrangements for producing construction statistics and indicated that the changes would take effect from the beginning of 2010. For further information as to the work undertaken by the ONS when the statistics transferred to us, please see Development of construction statistics (PDF, 135KB), published in March 2010.

The subsequent redevelopment of the output statistics has meant that a revised back series of data at sector level to 1955 and at subnational and sub-sectoral level to 1980 has been produced.

Monthly construction output is designed in accordance with Eurostat short-term statistics regulations (EU Regulation 1158/2005) to ensure comparability across European Union member states. An important aspect of this is the use of UK Standard Industrial Classification (SIC), which is consistent with the European Union's NACE system of industry classification.

Coherence with other ONS data sources

Monthly construction output survey estimates can also be assessed for coherence against other ONS data sources. These include the Annual Business Survey (ABS), new orders in the construction industry data and gross fixed capital formation (GFCF) estimates.

Coherence with the Annual Business Survey

The ABS collects total turnover, alongside other variables such as purchases, capital expenditure, stocks and employment costs. The indicators in the ABS publications are collected and presented as monetary values or counts, for example, approximate gross value added (aGVA) and numbers of enterprises. They serve as a snapshot of UK business activity and can be used to understand the level of the contributions to the UK economy from different sectors of the economy at any one time. The statistics produced are referred to as structural business statistics.

Table 2: Coherence with the Annual Business Survey (ABS)

ABS – Turnover	The ABS ask for "Total amount receivable in respect of invoices raised during the period of return, covering sales and goods and services."
MBS – Value of Work	The MBS asks for "…the total value of all work carried out"

Source: Office for National Statistics

However, the datasets are not directly comparable for a variety of reasons. These include, but are not limited to, the reasons detailed in this section.

Question definition

This is the important reason as to why the MBS value of work is not directly comparable with the ABS definition of turnover. The major reason for the difference is the treatment of subcontractor costs. To avoid double-counting, the MBS questionnaire specifically asks for only work conducted by respondents themselves. As subcontractors that are classified to construction will also be reporting this activity, this will avoid double-counting.

In contrast, as the ABS asks for a more detailed breakdown of questions on its questionnaire as it asks for income from subcontracting activity and payment to subcontractors, these figures can be accounted for in the final estimates when aGVA estimates are calculated.

UK SIC 2007 coverage

The ABS samples all of UK SIC 2007 section F – Construction. This is different to the MBS whose coverage is UK SIC 2007 section F – Construction excluding UK SIC 2007 41.1. “Development of building projects”. This is consistent with other national statistical institutes and originates in the type of activity this SIC undertakes.

Property developers tend to subcontract work to other businesses in the construction sector that carry out the actual building activity. Businesses are asked to exclude any subcontracted work to avoid any double-counting. Output does not include payments made to architects or consultants from other firms – this would cover engineers and surveyors. Output would, however, include wages paid to such people if they were directly employed by the business.

Geographical coverage

The ABS has a UK coverage, whereas the MBS has a Great Britain coverage. The reason for this is the Northern Ireland Statistics and Research Agency has a quarterly construction output survey that measures construction output in Northern Ireland.

Reporting periods

The MBS asks for a return to cover calendar months. If a business reports a period outside of these dates then the return will have a calendar day adjustment applied to it. Therefore, it is possible to sum 12 months within the year to obtain an annual figure. Whilst this annual figure might then be compared with the ABS figure, there may still be differences. This difference can come from the ABS allowing businesses to report any business year-end to help reduce the burden of completing the questionnaire. This is shown with around 60% of businesses reporting non-calendar year end dates. Further analysis as to this can be found in Section 8 of the ABS Technical Report (PDF, 1.64MB).

Types of work versus UK SIC

Another important feature with both datasets is the type of work against the SIC breakdown. For MBS, the focus of the release is on the type of work as derived from the various questions asked on the MBS questionnaire. Whereas the ABS publishes data based on the UK SIC 2007 and, on request, can provide its detailed variables broken down to detailed four-digit SIC classification.

Subnational construction estimates

ABS also publishes subnational estimates of construction data, which may be viewed by users to be comparable with the subnational estimates produced as part of the construction output in Great Britain dataset. It is unwise to compare the statistics in this manner, because ABS data are apportioned to the regional level based on local unit industry classification, employment size and regional location (see Section 5.8 Regional apportionment of the ABS Technical Report (PDF, 1.64MB)).

In contrast with the ABS regional data, the subnational output data are produced via modelling project information as part of the new orders in the construction industry dataset. For further information on this modelling, please see Construction development: improvements to regional and subsector level estimates, published on 4 June 2018.

As well as the caveats as to why the series may not be directly comparable, it is also worthwhile to understand the ABS time series for the construction industry are only available going back to 2008. This is because available results for the ABS between 1993 and 2007 are based on the UK SIC 2003 system, which was updated to become the UK SIC 2007 following a 2007 review. These updates were designed to reflect structural changes in the European economy, for example, the growth in technology industries. Consequently, ABS estimates from reference year 2008 onwards are published according to the UK SIC 2007 and so are not directly comparable with earlier results published according to UK SIC 2003.

Coherence with new orders in the construction industry

We also publish data on new orders in the construction industry on a quarterly basis as part of the short-term economic output indicators. For a full description of the methodology used to compile new orders, please see the New orders quality and methodology information report. It is often the case that new orders are interpreted by users as a good indicator of future construction output data. Whilst this is not an unreasonable assumption, it is advised that new orders are not used in this manner for a variety of reasons. Differences between the new orders and output data are further explored in Construction statistics development: Understanding the gap between construction output and new orders, published on 30 October 2018.

The new orders and output datasets are not directly comparable for a variety of reasons. These include, but not limited to, the reasons detailed in this section.

There is a difference in coverage between new orders and output data. All projects under £100,000 or a single residential property are not included in the new orders dataset. However, if a business is sampled undertaking this type of work, these would be included in the monthly construction output data.

Changes in specification (either projects including additional project requirements or downsizing the specification from initial estimations) can lead to overspend or underspend on budgets, which can mean a discrepancy between the initial estimate and later estimates of the new order. These later valuations would be the value, if sampled, that would be included in the monthly output data.

Difference in concepts and definitions – in the monthly output survey, contributors are asked to provide information on the value of work carried out in the reference period, whereas Barbour ABI ask for a valuation of a new project. While these are similar concepts, it is possible that differences in the valuation process could occur here. This could be the inclusion of other costs outside of the pure construction costs.

New order contracts may also be cancelled after the initial order. As a result, it is possible to see some projects in the new orders dataset that will not be transferred into the output data due to cancellation. This could also be dependent upon the current economic climate, where in a downturn, more projects are likely to be cancelled as businesses struggle to finance and raise capital to fund new projects.

Coherence with gross fixed capital formation (GFCF) estimates

We publish estimates with a sector and asset breakdown of GFCF including business investment. These estimates are published in current and chained volume measures for the UK on a seasonally and non-seasonally adjusted basis.

Within these estimates a sector breakdown of private sector dwellings is published. It is therefore the case that a comparison with the construction output private housing series (both new work and repair and maintenance) is often made. Whilst this assumption is valid, differences between the two series can occur, but are not limited to the following reasons:

- conceptual differences between the datasets – GFCF private sector dwelling series is an expenditure measure whereas the private housing output series is an output indicator; additional series are included to the GFCF dwellings series to account for this and these include hidden improvements, DIY improvements and self-builds
- geographical coverage differences between the datasets – the GFCF dwellings measure is UK coverage whereas construction output is Great Britain coverage
- difference in seasonal adjustment procedures – due to differences in the level of data being seasonally adjusted and the time series and periodicity of the time series available, this leads to valid differences in the published data

For further information describing the differences between ONS construction output private housing data and GFCF dwelling data, please see Conceptual and methodological differences between private housing construction output and gross fixed capital formation private sector dwellings, published on 31 May 2019.

Timeliness and punctuality

To comply with EU regulation and to provide more timely data, survey estimates are published on or around the 10th day of the month, six weeks after the reference period month-end. These estimates are published as part of the short-term output economic indicators theme day, where GDP monthly estimate, Index of Services, UK, Index of Production, UK and UK trade are also published. At this time, the survey response rate, by number of questionnaires returned and validated, is approximately 79% based on turnover coverage. To provide more accurate estimates, data are revised and published.

Publications are timely and fully compliant with Eurostat regulations and timetables. The data are published each month on the ONS website in the Construction output in Great Britain release. Every quarter new orders in construction are also additionally released within the statistical bulletin. To accompany the bulletin, a full set of estimates are available in MS Excel format in the construction output dataset. Longer time series of current price (to 1955) non-seasonally adjusted and chained volume measure seasonally adjusted (to 1997) are also available.

For more details on related releases, the GOV.UK release calendar is available online and provides 12 months' notice of release dates. If there are any changes to the pre-announced release schedule, public attention will be drawn to the change alongside full explanation of the reasoning behind it, as set out in the Code of Practice for Statistics. This itself has been recently updated, with a greater focus on statistical context and recommended usage.

Accessibility and clarity

Our recommended format for accessible content is a combination of HTML web pages for narrative, charts and graphs, with data being provided in usable formats such as CSV, XML and Excel. We also offer users the option to download the narrative in PDF format. In some instances, other software may be used or may be available on request. Available formats for content published on our website, but not produced by us or referenced on our website but stored elsewhere, may vary.

For information regarding conditions of access to data, please refer to the following links:

- terms and conditions
- access to microdata via the Secure Researcher Service
- accessibility
- legislation on data

Why you can trust our data

The ONS is the UK's largest independent producer of statistics and its national statistics institute. The Data Policies and Information Charter detail how data are collected, secured and used in the publication of statistics. We treat the data that we hold with respect, keeping it secure and confidential, and we use statistical methods that are professional, ethical and transparent.

The monthly Construction Output Survey has National Statistics status, designated by the Office for Statistics Regulation (OSR) in accordance with the Statistics and Registration Service Act 2007.

6 . Methods used to produce the construction output data

Sample frame

The monthly construction output sample frame is the Inter-Departmental Business Register (IDBR). The IDBR covers businesses in all parts of the economy, except those that are not registered for Value Added Tax (VAT) or Pay As You Earn (PAYE), for example, very small businesses, the self-employed, those without employees and those with low turnover. Some non-profit making organisations are also not registered on the IDBR. The IDBR has details of approximately 2.6 million businesses and covers approximately 97% of UK economic activity.

The IDBR is used by government departments, including the Office for National Statistics (ONS), as the sampling frame for most business surveys. The monthly Construction Output Survey draws its sample from approximately 320,000 businesses classified to the construction sectors in scope of the survey.

Sample design

The monthly Construction Output Survey uses a stratified random sample design. This is grouped by:

- five employment size bands: 0 to 4, 5 to 9, 10 to 19, 20 to 99, and 100 or more employees
- industry class: four-digit UK Standard Industrial Classification 2007: SIC 2007 (see Annex 2 for UK SIC 2007 industries)

All businesses with 100 or more employees will automatically be included in the sample for each month. Also, businesses with 10 to 99 employees and turnover greater than £60 million will be automatically sampled each month due to their importance to the industry. For the businesses with employment below the fully enumerated threshold, a simple random sampling method based on a permanent random number (PRN) is used for selection.

The sampled industries (those with fewer than 100 employees or 10 to 99 employees and annual turnover less than £60 million) are selected for the survey for approximately 27 months, except for businesses with 0 to 9 employees, which are only included for 15 months. After this period, they are guaranteed not to be selected for this or any other short-term business survey for another three years, assuming they continue to be small in employment size and do not change industrial classification.

Sample size

Monthly construction output has a sample size of approximately 8,000 businesses across construction sectors. The construction industry is classified as UK SIC 2007 section F excluding 41.1 – development of building projects.

Data collection

Data are collected from businesses solely through tailored paper questionnaires, to minimise respondent burden. In 2018, approximately 96,000 questionnaires were dispatched across the industry.

Reminders are sent for non-response, in addition to a telephone exercise conducted by a dedicated respondent relations team. When questionnaires are received, they are scanned and transferred to a data validation team for processing.

Where applicable, newly sampled businesses are telephoned in advance and products are added to their questionnaires prior to dispatch.

Measured variables

The main variables for the monthly Construction Output Survey are:

- value of new work
- value of repair and maintenance

By summing these two high-level components an all work series can be calculated. These variables are further broken down by type of work. These are detailed in Annex 1.

How we process and analyse the data

Once the data are collected, businesses will be re-contacted where substantial data changes are identified. The data are then aggregated and a further phase of validation checks is carried out via thorough micro-level investigation. Respondents may receive further queries if important changes driving aggregate movements at the type of work level are highlighted.

The following procedures are used for non-responders or non-sampled businesses, alongside atypical responses.

Imputation

Automatic imputation using ratio imputation is used when item non-response occurs. The imputation methodology uses the ratio of means approach, which is consistent with other short-term indicators (retail sales, Index of Services and Index of Production) and is recognised in the Recommended Practices for Editing and Imputation in Cross-Sectional Business Surveys EDIMBUS manual (PDF, 799KB) (see Chapter 4.2) as international best practice for imputation when the contributor has a valid value in the previous period. Table 3 provides further information as to the different types of imputation for non-response on the Construction Output Survey. These include:

- constructed imputation – these are an estimate for the non-response of a business, for the first period it is on the sample; the survey's sample rotation leads to approximately 600 new businesses joining the sample each month, maintaining the total sample size of 8,000
- forwards imputation – these are an estimate for non-response of a business, which has been on the sample for more than one period
- backwards imputation – these are an estimate for non-response, in case where a business's first response to the survey is not for its first period on the sample; it is used for all periods that are prior to the period of its first response

Table 3: Detailed explanation of imputation methods on the Construction Output Survey

Method	Constructed imputation	Forwards imputation	Backwards imputation
Level	Estimated at UK SIC 2007 industry level only, separately for all 11 questions on the survey.	Estimated at UK SIC 2007 industry level only, separately for all 11 questions on the survey.	Estimated at UK SIC 2007 industry level only, separately for all 11 questions on the survey.
Contributing information	The return (Rp) and annual turnover (T), according to the Inter-Departmental Business Register (IDBR), of businesses at the same level, who have returned for the period.	The return for both the estimation period (Rp) and the previous period (Rp-1), for businesses who have returned for both periods.	The return for both the estimation period (Rp) and the subsequent period (Rp+1), for businesses who have returned for both periods.
Link calculation (Ratio of Means)	(Rp) / (T), where the sums include all contributing businesses at the chosen level.	(Rp) / (Rp-1), where the sums include all contributing businesses at the chosen level.	(Rp) / (Rp+1), where the sums include all contributing businesses at the chosen level.
Trimming Factor	None	None	None
Link application	The link is applied to the annual turnover of the non-responding business.	The link is applied to the value held for the non-responding business, for the previous period. This value could be a return, construction or imputation.	The link is applied to the value held for the non-responding business, for the subsequent period. This value could be a return, or imputation.

Source: Office for National Statistics

An influential responder (a business that is known to make a significant contribution to the estimates) may also have its details manually constructed if it does not respond. This construction is based on previous returns to the survey and specialist knowledge of the industry.

Outliers

Once validated and approved, outliers can be removed from the processing, so they do not impact on the imputation link highlighted previously. These judgement-based decisions are based on expert knowledge of the industry, where these atypical responses would otherwise be impacting on the values of other businesses who are yet to respond to the survey.

Weighting and estimation

As it is not possible to conduct a census of all businesses classified to the construction industry each month due to cost and respondent burden, a sample is drawn each month.

For every business in the population, we weight the data from the sample of businesses to provide estimates for the full population. In strata that are not fully enumerated (that is, businesses in the 0 to 4, 5 to 9, 10 to 19 and 20 to 99 employees strata), two weights are applied to data collected in the Monthly Business Survey: the design (“a”) weight and calibration (“g”) weight.

Design (“a”) weight This is the inverse of the inclusion probability of businesses in the sample; essentially, the ratio of the size of the population from which the sample is selected to the size of the sample. The “a” weight calculation is adjusted for closedowns, based on assumptions about the births to deaths ratio: this ratio is assumed to be 1 except in large businesses where it is assumed to be 0.

Calibration (“g”) weight This adjusts for the imbalance of the selected sample compared with the population from which the sample is selected, where the imbalance is defined in terms of average register turnover. The “g” weight is given by the average population register turnover divided by the average sample register turnover within a group, which can be either a stratum or a combination of strata.

Deflation

The quarterly Construction Output Price Indices (OPIs) are used to deflate the current price construction output data to derive chained volume measure estimates of construction output in Great Britain. This is undertaken to remove the effects of changes in prices within the current price series.

Responsibility for these indices transferred to the ONS on 1 April 2015 from the Department for Business, Energy and Industrial Strategy (BEIS) and as part of this, a full development programme of work was undertaken in conjunction with stakeholders and user consultation to ensure their suitability within the output.

Information about the methods used to compile the interim construction price index can be found in the first article published in June 2015, as well as the main strengths and limitations of this interim solution.

For further information about improvements since made to Construction Output Price Indices, please see the Construction output price indices Quality and Methodology Information report and Section 5 of the Impact of improvements to construction statistics article, published on 27 September 2017. Because of these further improvements, the indices are no longer considered an interim solution.

Seasonal adjustment

The monthly chained volume measures are seasonally adjusted (CVMSA) using a seasonal adjustment software tool called X-13-ARIMA-SEATS. This monthly series is aggregated to form the quarterly seasonally adjusted chained volume measure series.

The seasonal adjustment parameters for output in the construction industry are reviewed annually by ONS methodologists. However, due to the volatility of these statistics and a high volume of revisions because of seasonal adjustment, time series analysis experts are regularly asked to review the seasonal adjustment prior to an annual review.

It should be noted that 60 months or five years is the minimum time span recommended by Eurostat for seasonal adjustment. While the seasonal pattern is generally established after 60 months in a monthly time series, there is still potential for increased revisions until the seasonal pattern has matured. The construction monthly output series is now nearly 10 years old.

Chained volume measures

The chained volume measures (CVM) of construction output are annual re-weighted chain Laspeyres indices referenced to current price values, currently 2016.

As with constant price estimates, chained volume measures only vary with changes in the quantities of commodities produced or sold. However, unlike constant price estimates and fixed-weight indexes, which value quantities using the prices of some base periods that were updated (or reweighted) once every five years, chained volume measures value quantities by using prices in a base period that is updated annually. These annually reweighted (rebased) volume change measures are then linked, or “chained” together, to produce a time series of chained volume measures.

A chained volume series is an economic series for successive years put in real terms by computing the volume for each year in previous year's prices and then chain-linking the data together to obtain a time series of volume figures from which the effects of price changes have in theory been removed. The chain-linking method used is consistent with the standard national accounts method (PDF, 58KB).

VAT turnover usage in construction output estimates

Since December 2017, VAT turnover data have been used to inform estimates of construction output in the short-term output indicators. This allows us to use the strengths of the survey data, which is the timeliness of the data, which means the output can be published around six weeks after the reference period end, and the granularity provided by type of work conducted by businesses. Whereas the coverage of VAT units is far greater than is possible through the survey, in the smaller employment strata, where sample rotation and response can be a factor.

The method in which this administrative dataset has been combined with survey data to produce the final, seasonally adjusted chained volume measure is described further in Section 3 in VAT turnover in national accounts: background and methodology, published on 19 March 2018.

As of August 2019, VAT turnover data have been used for selected industries previously covered by the Monthly Business Survey (MBS) from Quarter 1 (Jan to Mar) 2016 to Quarter 3 2018 (Jul to Sep). To achieve this hybrid series, the following processing steps are undertaken:

- a new "VAT-consistent" annual series is created that equates to growth in the construction MBS prior to the year in which VAT data have been taken on (2015); the annual growth rate derived from VAT data are benchmarked and spliced onto the established level of the annual MBS series – the Cholette-Dagum method of benchmarking is employed, according to ONS established best practice
- this series is then used as a benchmark for the creation of a quarterly "VAT-consistent" series that follows a quarterly VAT path; in a case where further quarterly VAT data are available for an incomplete calendar year, growth in the quarterly tail is also spliced on
- a final monthly "VAT-consistent" series is then created, which benchmarks MBS monthly growth data to the quarterly "VAT-consistent" series; where additional MBS data are available for a later period than VAT, these data are spliced in to create an MBS-only tail
- the final series is therefore consistent with VAT annual and quarterly growth rates when they are available and with monthly growth rates derived from the MBS data
- to create the industry totals for use in national accounts, an industry selection matrix is used to select the most appropriate data source (either MBS, VAT, or composite data) for any given industry by employment combination; industry totals can therefore consist of composite series for the sampled strata and of MBS-only series for the larger strata, making use of the best and most appropriate data for each stratum within an industry
- these "composite output total" time series are then run through the remaining part of the monthly construction systems as per usual

For a list of those industries selected to use VAT turnover within construction, please see the VAT industry selection matrix.

Modelling of output by type of work and by region

Estimates of output by subnational region and sub-sectoral type of work are published as part of the Output in the construction industry: subnational and sub-sector dataset in Tables 1 and 2. These are described in Annex 1.

The repair and maintenance output estimates are calculated from the output survey, which assumes that repair and maintenance work is carried out in the subnational region in which a business is registered. However, the new work output estimates are modelled using new orders data sourced from Barbour ABI. These new orders data include information from businesses on contracts won at subnational and sub-sector level on where the work is to be carried out, as well as individual project-level start dates, value, duration and end-dates.

Using these data, a two-staged approach is adopted depending on the individual projects value, with a different approach taken for new orders worth over and under £50 million.

Providing the value of a project is over £50 million, the value of the new order is spread over its duration, from their start to end date, using a set of pre-determined cost curves, which assume most of the cost is incurred to during the middle stage of the project. If a new order is postponed, it is not used to model construction output until the actual construction start date, while if a new order is cancelled, it is no longer used to model construction output.

A slightly different approach is taken for new orders with a value of less than £50 million. These lower value new orders, on which less data are available, are grouped with their cumulative value spread across default average durations according to the projects type of work using the same set of cost curves. Once the value of all projects worth over and under £50 million are spread across their duration, the resulting values are constrained to construction output.

For full details on the recent improvements implemented to the methodology to calculate subnational and sub-sector data, please see Construction development: improvements to regional and sub-sector level estimates, published on 4 June 2018. In addition, for further information on the assessment of the suitability of the Barbour ABI data, please see UK Statistics Authority guidance for quality assurance of administrative data, which illustrates how the data have been assessed.

How we quality assure the data

Data are quality assured throughout the data collection, processing and analysis processes through regular consistency checks, investigation of anomalies, ensuring disclosure procedures and reviewing data sources. These checks are presented at monthly curiosity meetings, where important internal stakeholders can interrogate the data and explore any anomalies or interesting findings.

External stakeholders, such as other government departments, also have regular opportunities to analyse the data and share feedback with ONS colleagues.

The external forums that are in place where the data can be quality assured and queried are the Construction Statistics Steering Group and the Consultative Committee on Construction Industry Statistics (CCCIS).

How we disseminate the data

Construction output data are disseminated primarily through publication of statistical bulletins and ad hoc releases on the ONS website. These are further shared through the increased use of ONS social media accounts.

Tables 4 and 5 describe the following datasets that are published as part of the data tables each month. For a full list of subnational regions, sector and sub-sectors, please see Annex 1.

Table 4: List of data tables published as part of construction output in Great Britain

Table Number	Table title	Prices	Seasonal Adjustment	Periodicity	Time Series available
1a	Construction output: Volume seasonally adjusted index numbers – by sector	Chained volume measure	Yes	Annual, quarterly and monthly	1997 to present (annual and quarterly) 2010 to present (monthly)
1b	Construction output: Volume non- seasonally adjusted index numbers – by sector	Chained volume measure	No	Annual, quarterly and monthly	1997 to present (annual and quarterly) 2010 to present (monthly)
2a	Construction output: Volume seasonally adjusted pounds data – by sector	Chained volume measure	Yes	Annual, quarterly and monthly	1997 to present (annual and quarterly) 2010 to present (monthly)
2b	Construction output: Volume non-seasonally adjusted pounds data – by sector	Chained volume measure	No	Annual, quarterly and monthly	1997 to present (annual and quarterly) 2010 to present (monthly)
3a	Construction output: Volume seasonally adjusted, percentage change period on previous period – by sector	Chained volume measure	Yes	Annual, quarterly and monthly	1997 to present (annual and quarterly) 2010 to present (monthly)
3b	Construction output: Volume seasonally adjusted, percentage change period on previous period a year earlier – by sector	Chained volume measure	Yes	Annual, quarterly and monthly	1997 to present (annual and quarterly) 2010 to present (monthly)
3c	Construction output: Volume seasonally adjusted, percentage change three months on three months – by sector	Chained volume measure	Yes	Monthly	2010 to present

3d	Construction output: Volume seasonally adjusted, percentage change three months on a year earlier – by sector	Chained volume measure	Yes	Monthly	2010 to present
4	Construction output: Value non-seasonally current prices – by sector	Current prices	No	Annual, quarterly and monthly	1955 to present (annual and quarterly) 2010 to present (monthly)
4a	Construction output: Value seasonally current prices – by sector	Current prices	Yes	Annual, quarterly and monthly	1997 to present (annual and quarterly) 2010 to present (monthly)
5a	Construction output: Volume seasonally adjusted growth rates	Chained volume measure	Yes	N/A	N/A
5b	Construction output: Volume non-seasonally adjusted growth rates	Chained volume measure	No	N/A	N/A
6a	Construction output: Implied price deflator, non-seasonally adjusted index numbers	Implied deflator	No	Annual, quarterly and monthly	1997 to present (annual and quarterly) 2010 to present (monthly)
7	Construction output: Value non-seasonally adjusted, current prices, by sector	Current prices	No	Quarterly	2010 Quarter 1 (Jan to Mar) to present
8	Construction output: Basic quality information, sample and non-sample errors	Current prices	No	Monthly	Latest month only
9	Construction output: Non-seasonally adjusted, matched pairs analysis, current prices	Current prices	No	N/A	Latest two quarters
10	Construction output: all work summary	Chained volume measure and current prices	Both	Annual, quarterly and monthly	1997 to present (annual and quarterly) 2010 to present (monthly)
11	Response rates	N/A	N/A	Monthly	Latest four months only

Source: Office for National Statistics

Table 5: List of data tables published as part of construction output in Great Britain

Table Number	Table title	Prices	Seasonal Adjustment	Periodicity	Time Series available
1	Construction output: Value non-seasonally adjusted – by sub-sector	Current prices	No	Quarterly	1980 to present
2	Construction output: Value non-seasonally adjusted – by subnational region	Current prices	No	Quarterly	1980 to present

Source: Office for National Statistics

We also employ consistent disclosure control procedures ahead of publication. The Government Statistical Service defines statistical disclosure control:

“Statistical disclosure control (SDC) is the term used to cover the many methods of safeguarding the confidentiality of the information about individuals and businesses. Information obtained from surveys or administrative data is usually given in confidence. SDC is applied to ensure that individuals, businesses or other statistical units cannot be identified from published data, whether record level data or tables. This will involve modifying data so that the risk of identification is reduced to an acceptable level.”

Monthly construction output is conducted under the Statistics of Trade Act 1947. This Act imposes restrictions on the way that data collected during the survey may be used, to ensure that information that can be attributed to an individual organisation is not disclosed in any publication.

The Code of Practice for Statistics sets out practices for how we protect data from being disclosed. More information can be found on the ONS Disclosure Control Methodology page.

Other information

In addition to this Quality and Methodology Information, monthly construction output releases include a Quality and methodology section within the monthly statistical bulletin to aid user understanding of published estimates, alongside a user guide to aid the interpretation of estimates.

For further information, please contact the Construction team via email at construction.statistics@ons.gov.uk.

Useful links

Construction statistics annual
Construction statistics sources and outputs
Types of construction work (PDF, 75KB)
Output and new orders in the construction industry definitions and explanations (PDF, 39KB)

7 . Annex 1: Type of work and subnational breakdown collected on the construction output data

Sectors published within the construction output in Great Britain release

All new work can be split into two parts: new housing and all other work. These can be broken down as follows.

New housing includes:

- public new housing
- private new housing

All other work includes:

- other new work
- infrastructure
- public other new work
- private industrial other new work
- private commercial other new work

Repair and maintenance:

- public housing repair and maintenance
- private housing repair and maintenance
- non-housing repair and maintenance

Regions within the construction output in Great Britain release

- North East
- Yorkshire and The Humber
- East Midlands
- East of England
- London
- South East
- South West
- Wales
- West Midlands
- North West
- Scotland

Subsectors published within the construction output in Great Britain release

Total new work and repair and maintenance includes the following:

- public housing
- private housing
- infrastructure (further disaggregated into public and private infrastructure), which includes water, sewerage, electricity, roads, railways, harbours, and other
- other public non-housing, which includes other public industrial, schools and colleges, universities, health, offices, entertainment, garages, shops, agriculture, and miscellaneous
- private industrial, which includes factories, warehouses, and oil, steel and coal
- private commercial, which includes schools, universities, health, offices, entertainment, garages, shops, agriculture, and miscellaneous

8 . Annex 2: List of UK Standard Industrial Classification 2007 industries collected by the monthly Construction Output Survey

The Standard Industrial Classification 2007: SIC 2007 industries collected by the monthly Construction Output Survey are:

41201: Construction of commercial buildings
41202: Construction of domestic buildings
42110: Construction of roads and motorways
42120: Construction of railways and underground railways
42130: Construction of bridges and tunnels
42210: Construction of utility projects for fluids
42220: Construction of utility projects for electricity and telecommunications
42910: Construction of water projects
42990: Construction of other civil engineering projects not elsewhere classified
43110: Demolition
43120: Site preparation
43130: Test drilling and boring
43210: Electric installation
43220: Plumbing, heat and air conditioning installation
43290: Other construction installation
43310: Plastering
43320: Joinery installation
43330: Floor and wall covering
43341: Painting
43342: Glazing
43390: Other building completion and finishing
43910: Roofing activities
43991: Scaffold erection
43999: Other specialised construction activities not elsewhere specified