# European Construction Sector Observatory

Country profile **United Kingdom**

January 2022

# In a nutshell

**Over the 2010-2020 period, the United Kingdom (UK) GDP increased by 8.1%, totalling GBP 1.9 trillion (EUR 2.3 trillion) in 2020. However, the GDP declined by 9.7% in 2020 over the previous year.**

In line with the overall economy, the broad construction sector in the UK also gained momentum. The **number of enterprises** in the broad construction sector totalled 551,212 in 2018[1], representing an increase of 31.5% over the 2010-2018 period. This growth is primarily attributable to a 44.6% and 32.5% increase in the architectural and engineering and the real estate activities sub-sectors, respectively.

| | |
|---|---|
| Number of enterprises in the broad construction sector between 2010 and 2018 | ↑ **31.5%** |

After witnessing a drop in 2012, the **volume index of production** in the broad construction sector has been on a constant rise, increasing by 12.4% over the 2015-2019 period. In parallel, the construction of civil engineering and buildings also experienced a growth of 18.4% and 11.6%, respectively, during the above referred period.

| | |
|---|---|
| Volume index of production in the broad construction sector over the 2015-2019 period | ↑ **12.4%** |

Likewise, the **total turnover** in the broad construction sector stood at EUR 450.1 billion in 2017, representing an increase of 32.9% compared to 2010 (EUR 338.7 billion). It further increased to EUR 494.6 billion in 2018, a 46.0% increase since 2010. This overall increase was mainly driven by growths in the narrow construction (+48.7%), architectural and engineering activities (+53.4%) and real estate activities (+40.0%) sub-sectors over the 2010-2018 period.

| | |
|---|---|
| Turnover in the broad construction sector between 2010 and 2018 | ↑ **46.0%** |

Similarly, the **gross operating surplus** of the broad construction sector recorded a substantial 73.0% increase between 2010 and 2018, reaching EUR 123.8 billion. This was primarily driven by an increase in the manufacturing sub-sector (+159.8%), followed by the architectural and engineering activities (+76.7%), the narrow construction (+74.0%) and the real estate activities (59.5%) sub-sectors over the same period.

Correspondingly, the **gross operating rate** of the broad construction sector, an indicator of the sector's profitability, increased from 21.1% in 2010 to 25.0% in 2018. This is well above the EU-27 average of 16.7%.

In terms of employment, there were 2,808,485 **persons employed** in the UK broad construction sector in 2018, representing an increase of 14.9% over 2010. This was driven by a rise in employment in the architectural and engineering activities (+23.9%), the real estate activities (+20.0%), the manufacturing (+12.6%) and the narrow construction (+10.8%) sub-sectors during the same period.

In parallel to the growth in employment, the UK **housing market** is facing two key issues. House prices have increased significantly in recent years, adding pressure to the shortage of affordable housing in the country. Although **residential construction** also picked up recently partly due to the implementation and further extension of the government's 'Help to

Buy' scheme through March 2023, it is still not enough to meet the overall market demand.

To address this issue, the government added GBP 500.0 million (EUR 597.2 million) in 2018 to the **Housing Infrastructure Fund,** which is now worth GBP 5.5 billion (EUR 6.1 billion), to support the construction of 400,000 housing units by 2021. In its Autumn Budget 2021, the UK government allocated GBP 1.7 billion (EUR 2.0 billion) from the "Levelling Up Fund" into towns and cities across England. Further, as per the "Roadmap to Recovery" initiative launched in October 2021, the UK's Green Homes Grant will invest grants worth GBP 2.0 billion (EUR 2.4 billion) to support residential buildings in improving their energy efficiency. The grant will also finance retrofit projects amounting to GBP 1.0 billion (EUR 1.2 billion) so as to improve the energy efficiency of public sector buildings.

Additionally, in October 2021, the UK government announced its "Heat and Buildings Strategy" focused on incentivizing households to adapt their operations to minimise greenhouse gas emissions across the life cycle of residential buildings. The UK government is looking for opportunities to deliver homes on vacant, brownfield land and other land closer to existing houses, thereby permitting synergies with local amenities and infrastructure.

**Under the Autumn Budget 2021, the UK government has allocated GBP 6.1 billion (EUR 7.3 billion) for investment in its Transport Decarbonisation Plan. The country has also allocated GBP 3.9 billion (EUR 4.7 billion) for investment in the decarbonisation of buildings across the UK, with a plan to further invest GBP 1.8 billion (EUR 2.1 billion) into supporting low-income households to make the net-zero transition[2].**

Currently, UK's infrastructure networks are under pressure with its rail, road and aviation networks reaching their capacity limit. The country has already started taking steps to cover its infrastructure deficit. Under its "Roadmap to Recovery" initiative, the UK government has announced an accelerated pipeline of 340 projects amounting to GBP 37.0 billion (EUR 44.2 billion) from the National Infrastructure and Construction Pipeline, including investment in transport infrastructure and local growth projects. In November 2021, the UK government announced a GBP 96.0 billion (EUR 114.7 billion) Integrated Rail Plan (IRP) outlining major projects including High Speed 2 (HS2) Phase 2b, Northern Powerhouse Rail and Midlands Rail Hub as well as their delivery schedule across the North and Midlands regions. Moreover, in its Autumn Budget 2021, the UK government announced its plans to invest GBP 2.6 billion (EUR 3.1 billion) in road maintenance between 2020 and 2025.

The UK broad construction sector is also suffering from **labour shortages**. The UK's exit from the EU Single Market has worsened the current skills shortage for the construction sector. The ongoing **COVID-19 pandemic** is also expected to have both short and long-term impacts on the construction sector.

The present Country Fact Sheet may present some incomplete or outdated data. This is due to the fact that, after Brexit, the United Kingdom (UK) and the European Union (EU) have not yet reached an agreement on statistical cooperation. Therefore, Eurostat (which is largely used to provide data in the Country Fact Sheets) is no longer disseminating new data for the UK, neither through its database nor in other dissemination products. For the purpose of this report, some alternative data sources have been identified to cover the gaps from Eurostat, although to a limited extent. Additionally, many of the EU reports and studies that are published regularly for all EU member states and used in the Country Fact Sheets, have not been updated for the UK.

For more information on the lack of a statistical agreement between the UK and the EU, please see: https://ec.europa.eu/eurostat/help/faq/brexit

# Table of Contents

# 1

# Key figures

## Construction market

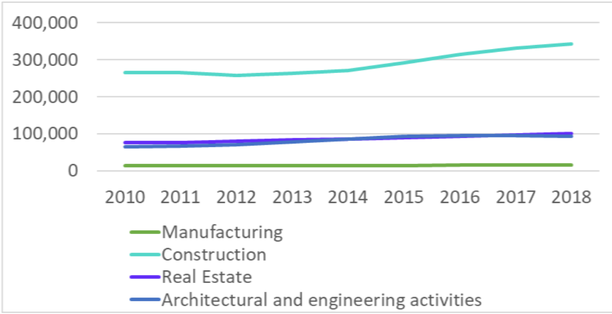
The **number of enterprises** in the broad construction sector totalled 551,212 in 2018[3,4], increasing by 31.5% between 2010 and 2018 (Figure 1). This growth is primarily attributable to the 44.6% increase in the architectural and engineering sub-sector followed by the real estate activities (+32.5%), narrow construction (+28.7%) and manufacturing (+15.8%) sub-sectors. The narrow construction sub-sector accounted for 62.0% of the total number of enterprises, followed by the real estate activities (18.1%), architectural and engineering activities (17.1%) and manufacturing (2.9%) sub-sectors.

| | |
|---|---|
| Number of enterprises in the broad construction sector between 2010 and 2018 | ↑ **31.5%** |

The **volume index of production** in the broad construction sector increased by 12.4% in 2019 compared to the 2015 level. In parallel, the volume index of production in the construction of buildings increased by 11.6% between 2015 and 2019, while it grew by 18.4% for civil engineering over the same period.

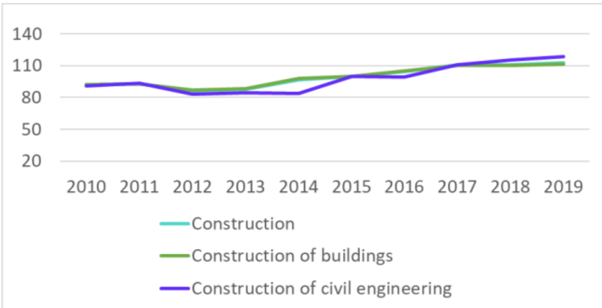
| | |
|---|---|
| Production of the broad construction sector between 2015 and 2019 | ↑ **12.4%** |

Figure 1: Number of enterprises in the broad UK construction sector between 2010 and 2018




*Source: Eurostat, 2021.*

Figure 2: Volume index of production in the UK construction sector between 2010 and 2019 (2015=100)

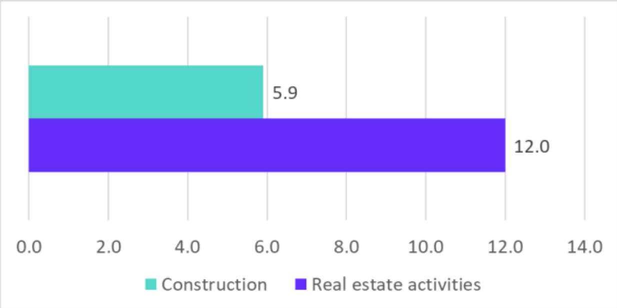



*Source: Eurostat, 2021.*

**The broad construction sector's total added value[5] amounted to EUR 217.4 billion in 2018[6,7], with the narrow construction sub-sector contributing 53.4% of the aggregate (EUR 116.1 billion), followed by the real estate activities (22.3%), the architectural and engineering activities (18.6%), and manufacturing sub-sectors (5.7%).**

Overall, the **share of gross value added** by the narrow construction sub-sector in the GDP reached 5.9% in 2019, above the EU-27 average of 4.9% as well as its 2010 level of 5.1%. Similarly, the share of gross value added by the real estate activities sub-sector in the GDP totalled 12.0% in 2019, well above the EU-27 average of 9.7% and marginally better than its 2010 level of 10.8%[8].

Figure 3: Gross value added as a share of GDP in the UK broad construction sector in 20199 (%)




*Source: Eurostat, 2021.*

There are 41 statistical regions in the UK. Outer London- West and Northwest had the highest share (5.0%) in gross value added in the narrow construction sub-sector among all regions of the UK in 2019. It also reported the largest increase, of 100.9%, in the gross value added in the narrow construction sub-sector during 2010-2019. It was followed by Bedfordshire and Hertfordshire (+89.6%) and Cornwall and Isles of Scilly (+79.3%) over the same period. In the real estate activities sub-sector, Inner London-West accounted for the maximum share (8.0%) in gross value added in 2019. Inner London-East witnessed the largest increase of 88.6% while Inner London-West reported an increase of 88.5% over the 2010-2019 period[10].

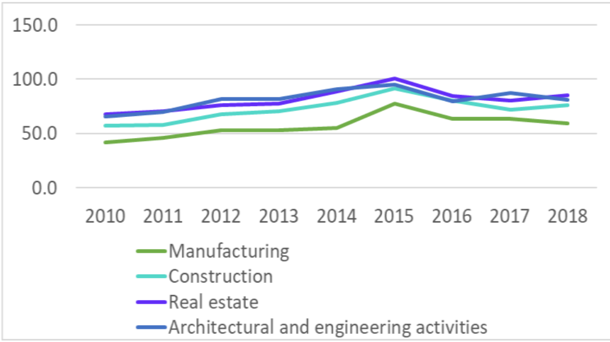
## Productivity

Overall, **apparent labour productivity**[11] in the UK broad construction sector increased from EUR 59,428 in 2010 to EUR 77,400 in 2018[12] (30.2%), well above the EU-27 average of EUR 51,960. The narrow construction sub-sector saw the highest increase in labour productivity, growing from EUR 57,000 in 2010 to EUR 75,800 in 2018 (32.7%), followed by real estate activities increasing from EUR 67,900 to EUR 85,200 over the 2010-2018 period (25.5%). Labour productivity in the architectural and engineering activities sub-sector grew by 23.1%, rising from EUR 65,800 in 2010 to EUR 81,000. On the contrary, productivity in the manufacturing sub-sector experienced a 80.8% decline during 2010-2018 reaching EUR 8,000 from EUR 41,605.

Nonetheless, since 2018, construction sector productivity growth has slowed down. While the overall construction output grew well till 2017 before levelling off, the construction sector's output per hour has been declining since 2016 and was notably weak in 2018[13]. The COVID-19 pandemic in 2020 has further impacted the construction sector significantly with the lockdown closing all work sites, causing the supply chain to temporarily shut down and inducing large-scale staff terminations[14].

**According to a research by Turner and Townsend, the COVID-19 pandemic has resulted in around 35.0% productivity losses at UK construction sites, causing massive programme delays and rising costs. Uncertainty related to labour arrival on site, social distancing measures and delays in material delivery have further worsened the productivity gap[15].**

Figure 4: Labour productivity in the broad construction sector in UK between 2010 and 2018 (EUR k)

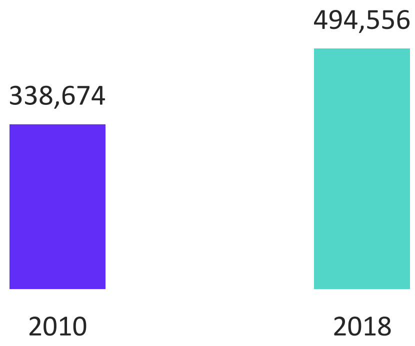



*Source: Eurostat, 2021.*

## Turnover and profitability

The **turnover** of the broad construction sector stood at EUR 494.6 billion in 2018, representing an increase of 46.0% compared to 2010 (EUR 338.7 billion). The increase was primarily due to a 53.4% incline in turnover in the architectural and engineering activities sub-sector between 2010 and 2018, followed by a 48.7% increase in the narrow construction and a 40.0% growth in the real estate activities sub-sectors over the same reference period. Similarly, the manufacturing sub-sector grew by 22.5% over the same reference period.

In 2018, the largest share of the turnover came from the narrow construction sub-sector, which accounted for 64.0% (i.e. EUR 316.5 billion) of the total. It was followed by the architectural and engineering activities (14.9%, i.e. EUR 73.6 billion), the real estate activities (14.8%, i.e. EUR 73.3 billion), and the manufacturing (6.3%, i.e. EUR 31.2 billion) sub-sectors.




Turnover of the broad construction sector in EUR million

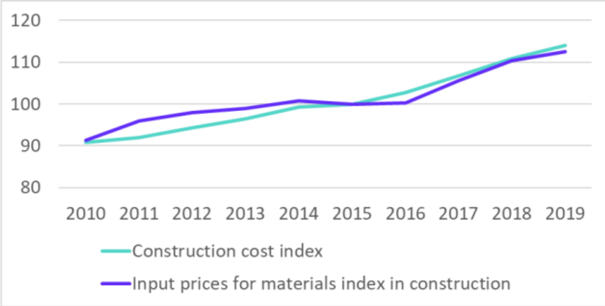
Turnover of the broad construction sector over 2010-2018 period **46.0%**

Similarly, the **gross operating surplus** for the broad construction sector has been increasing since 2010, reaching EUR 134.8 million in 2015 and then declining by a sharp 8.2% in 2018 to reach EUR 123.8 million, being 73.0% above the 2010 level (EUR 71.6 million). In terms of its sub-sectors, the largest increase was reported by the manufacturing activities (159.8%), followed by the architectural and engineering activities (76.7%) and the narrow construction (74.0%) over the 2010-2018 period. The real estate activities sub-sector witnessed the lowest growth rate of 59.5% over the same period.

The **gross operating rate** of the broad construction sector[16], which gives an indication of the sector's profitability, stood at 25.0% in 2018, 3.9 percentage points above the 2010 value (21.1%)[17]. In the case of the sub-sectors, the real estate activities had the highest gross operating rate (45.4%), followed by the architectural and engineering activities (26.7%), the narrow construction (20.5%) and the manufacturing sub-sector (19.8%) over the 2010-2018 period.

In parallel, **construction costs** for residential buildings have been experiencing an increasing trend, with the construction cost index rising by 14.5% over 2015-2019 period. This is partly driven by the 12.6% increase in input prices for materials (Figure 5). In fact, construction materials such as ready-mix concrete (21.9%), cement (24.5%), pre-cast concrete products (29.3), doors and windows (29.7%), particle board (41.9%) and insulating materials (45.9%) had the highest price rise during 2010-2019[18].

Figure 5: Construction cost index between 2010 and 2019 (2015=100)




*Source: Eurostat, 2021.*

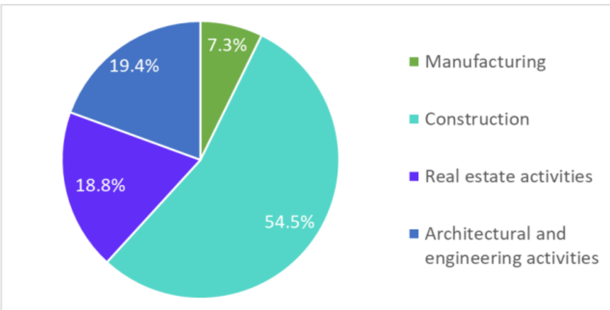
## Employment

**The number of persons employed in the broad construction sector stood at 2,808,485 persons in 2018[19], representing a 14.9% increase compared to 2010.**

The narrow construction sub-sector employed 54.5% (i.e. 1,530,890 persons) of the total workforce in the broad construction sector in 2019, representing a 10.8% growth since 2010 (Figure 6). According to the UK Office for National Statistics' report on "Migrant labour force within UK's construction industry", 47.0% of total construction workers in 2018 were engaged in the narrow construction sub-sector, in which 8.0% were non-UK nationals[20].

19.4% (i.e. 533,870 persons) of total broad construction labour force in 2019[21] was involved in the architectural and engineering activities sub-sector, 18.8% (i.e. 516,307 persons) was engaged in the real estate activities sub-sector and the remaining 7.3% (i.e. 199,827 persons) in the manufacturing sub-sector (Figure 6).

Figure 6: Percentage of people employed per construction sub-sectors in the UK in 2019



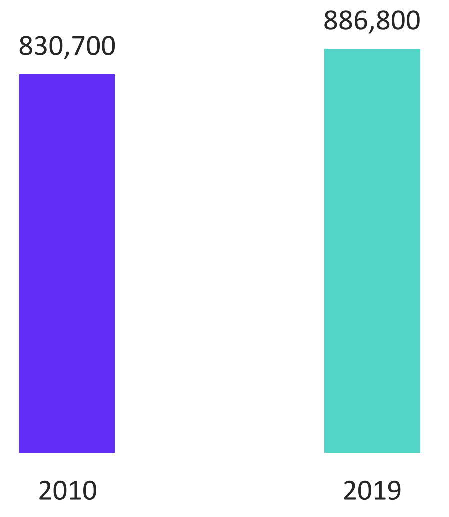

*Source: Eurostat, 2020.*

With regard to the **number of persons employed regionally** in the narrow construction sub-sector in 2020 South East and London regions had the highest number of persons employed in the narrow construction sub-sector in the UK. However, Southwest (+26.1%) and London (23.3%) recorded the strongest increase of employment in the narrow construction sub-sector over 2010-2020. This was followed by East of England (+21.3%) and Yorkshire and the Humber (+15.2%). In contrast, the sharpest decline was reported in the Northeast (-10.2%) over the same period. When it comes to employment in the real estate activities sub-sector, London recorded the highest number of persons employed (161,750) increasing by 48.1% over the 2010-2020 period. However, the highest increase in employment was recorded in Wales (+92.6%) followed by West Midlands (+66.7%) over the same period.

As for **employment by specific occupation**, the number of clerical support workers in the narrow construction sub-sector saw the largest decline, from 150,100 in 2010 to 113,600 in 2019 (-24.3%), followed by craft and related trades workers (-8.9%). Conversely, the number of service and sales workers increased significantly from 6,300 to 23,800 (+277.8%) over the same period, followed by technicians and associate professionals (+121.1%). In the real estate sub-sector, professionals experienced the highest increase, from 18,700 in 2010 to 49,800 in 2019 (+166.3%), followed by craft and related trades workers (+107.2%), which saw the second-largest occupation growth in this sub-sector. In the manufacturing sub-sector, plant and machine operators and assemblers showed the largest decline, from 589,700 in 2010 to 379,500 in 2019 (-35.6%). Conversely, service and sales workers experienced the highest increase, from 30,100 in 2010 to 83,600 in 2019 (177.7%). This was followed by professionals, rising by 106.4% over the same time period.

The number of **self-employed** workers in the narrow construction sub-sector increased from 830,700 in 2010 to 886,800 in 2019 (6.8%). This represents 19.8% of the self-employed workers in the general economy, well above the EU-27 average of 11.9%. Similarly, self-employed workers in the real estate activities sub-sector grew from 40,000 to 58,100 over the same period (+45.3%), representing only 1.3% of the self-employed workers in the general economy. This is slightly below the EU-27 average of 1.4% for 2019. Further, self-employed workers in the manufacturing sub-sector grew from 162,900 to 198,100 over the same period (+21.6%), representing only 4.4% of the self-employed workers in the general economy.

In parallel, **full-time employment** in the narrow construction sub-sector increased by 5.2% between 2010 and 2019, reaching 2,121,000 from 2,017,000. In the manufacturing sub-sector, it increased by 3.9% over the 2010-2019 period, reaching 2,699,600 in 2019 from 2,598,300 in 2010. In contrast, a significant increase of 37.5% was recorded in the real estate activities sub-sector during the above period, reaching 279,000 in 2019 from 202,900 in 2010. With regards to **part-time employment**, the real estate activities sub-sector registered substantial growth of 43.5% between 2010 and 2019, followed by an 18.3% rise in the narrow construction sub-sector. However, the manufacturing sub-sector[22] experienced growth of 8.9% over the same period.




Number of self-employed workers in the narrow construction sub-sector

# 2

# Macroeconomic indicators

## Economic development

**In 2020, the GDP of UK stood at GBP 1.9 trillion (EUR 2.2 trillion), representing an increase of 8.1% compared to the 2010 level of GBP 1.7 trillion (EUR 2.1 trillion). After rising by 1.7% in 2019, GDP growth decelerated to -9.7% in 2020 mainly because of the outbreak of the global COVID-19 pandemic.**

In 2020, the decline in the GDP was the highest in the decade. This was mainly due to the lockdown measures undertaken by the government to contain the spread of COVID-19. This led to the shutting down of industries, lower private consumption and weak investment. Potential GDP in 2020 was GBP 2.1 trillion (EUR 2.5 trillion), resulting in a negative **output gap** of 8.6%.

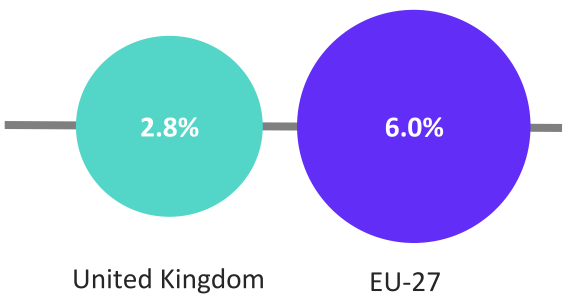
In parallel, the **inflation rate** has been picking up since 2016, going from 0.0% in 2015 to 2.7% in 2017 and decreasing to 1.8% in 2019[23]. However, following the onset of COVID-19 pandemic, the UK inflation rate started to rise again in 2020, reaching 5.4% in December 2021, its highest level since March 1992. This is primarily due to high energy prices and rising cost of living[24].

## Demography and employment

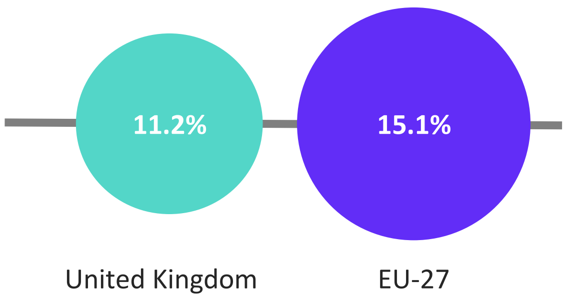
In terms of demographics, UK's **total population** reached 66.8 million in 2019[25], and is projected to increase to 69.2 million by mid-2030 and to 71.0 million by mid-2045. Net migration is projected to reach to 2.2 million people coming into the country over the 10-years between mid-2020 and mid-2030. Over the 25-year period between mid-2020 and mid-2045, net migration is projected to reach 5.3 million. UK's **working age population** is projected to increase by 1.9 million (4.5%) over the 10-years between mid-2020 and mid-2030 reaching 44.4 million. By mid-2045, the number of working age people is projected to remain around the mid-2030 levels. In mid-2020 there were 1.7 million people aged 85 years and over, making up 2.5% of the UK population. By mid-2045, this is projected to nearly double to 3.1 million, representing 4.3% of the total UK population[26]. This shift in population structure will drive the demand for hospitals, elderly care buildings and health infrastructures, which in turn will generate more opportunities for the UK construction sector.

The **unemployment rate** reached 2.8% in 2019[27], below the EU-27 average of 6.0% and the lowest since 2002. Similarly, youth unemployment (below the age of 25) stood at 11.2% in 2019, below the EU-27 average of 15.1% and the lowest since 2005. In 2020, the unemployment rate (aged 16 and above) reached 4.5%[28].

Unemployment rate in 2019



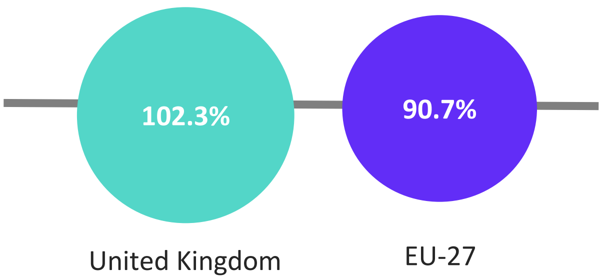

Youth unemployment rate in 2019




## Public finance

In 2020, general **government deficit** in the UK accounted for -12.9% of GDP, which was more than the EU-27 average of -6.9% of GDP and more than the 2010 level (-9.3%). General **government gross debt** accounted for 102.3% of GDP, well-above the EU-27 average of 90.7% of GDP.

General government gross debt in 2020 as a percentage of GDP




## Entrepreneurship and access to finance

**According to the World Bank Doing Business 2020 report, UK ranked 18th out of 190 countries in ease of starting a business in 2019. This is a slight improvement in comparison with previous year's ranking (19th)[29,30].**

As per the report, starting a business in UK requires four procedures, taking 4.5 days to complete[31]. In terms of entrepreneurship, 27.3% of the UK adult population perceive that there are good opportunities in starting a firm in the country, and 8.2% of the adult population, currently not involved in entrepreneurial activities, intended to start a business in the coming three years[32].

As per the 2019 Small Business Administration (SBA) Fact Sheet, UK's general score on 'Access to finance' is above the EU-28 average, being above average on five indicators and broadly in line with the rest of the indicators[33].

The country implemented several measures to support businesses, such as the provision of an additional GBP 12.0 million (EUR 13.3 million) in 2017/2018 to local growth hubs, to enable them to support small businesses and help them grow. Women in Action is also a measure that seeks to invest GBP 200,000 (EUR 221,052) to encourage more innovation by women in sectors such as manufacturing, IT, enabling technologies and health and life sciences[34]. The New Business Basics Fund, introduced in 2018, is expected to give a boost of GBP 100 billion (EUR 110.5 billion) to the UK economy[35]. Moreover, the establishment of the British Business Bank (BBB) is also an important step in this direction. The BBB is a fully government-owned bank working over 100 finance partners to improve lending conditions for smaller businesses[36].

**As per the World Bank Doing Business 2020 report, in terms of access to finance, UK ranked 37th out of 190 countries for the ease of getting credit[37].**

In 2019, the UK government announced a GBP 200.0 million (EUR 221.1 million) support for innovation for British businesses[38]. The government is also funding research and development through its Industrial Strategy Challenge Fund to support clean growth. It is also contributing GBP 505.0 million (EUR 576.0 million) over the 2015-2021 period through the Energy Innovation Programme to provide the private sector with ease of access to finance for developing low-carbon technologies[39].

# 3

# Key economic drivers of the construction sector

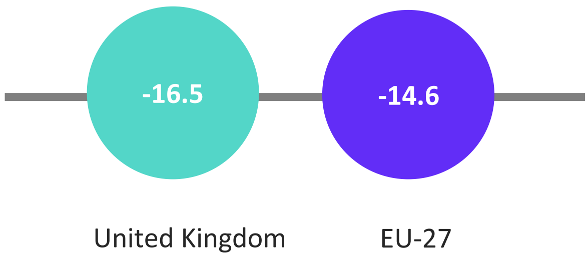
## Business confidence

The **consumer confidence indicator** has been on a downward trend since 2015, falling to -16.5 in 2020, lower than the EU-27 average of -14.6. The **industry confidence indicator** has been fluctuating sharply since 2010 and recorded the worst performance, remaining in negative territory in 2020 (-25.2) from -11.0 in 2019. This is significantly below the EU-27 average of -14.4 in 2020. Last, the **construction confidence indicator** also recorded a weak performance, ending at -8.4 in 2019[40] compared to -1.9 in 2018. This is in sharp contrast to the EU-27 average of 5.4 in 2019. This may be explained by the collapse of Carillon, a British multinational construction and facilities management services company, which generated a significant number of bankruptcies down the supply chain.

Reflecting these trends, the **investment ratio** increased slightly to 17.5% in 2020 compared to 17.3% in 2019 and on par with the 2018 level of 17.5%. This is still above the 2010 levels of 16.0%, but well below the EU-27 average of 21.8% in 2020.

However, **investment per worker** in the broad construction sector increased from EUR 66,908 in 2010 to EUR 75,460 in 2018[41,42]. In the narrow construction sub-sector, investment per worker increased from EUR 5,800 in 2010 to EUR 8,900 in 2018. In the real estate activities sub-sector, investment per worker increased comparatively less, from EUR 12,400 in 2010 to EUR 14,900 in 2018[43]. The architectural and engineering activities sub-sector experienced an increase of 220.7% reaching EUR 9,300 in 2018 from EUR 2,900 in 2010.

Consumer confidence indicator in 2020




## Domestic sales

Between 2010 and 2018, there has not been a significant shift in ranking of the **most domestically sold construction products** in the UK except for 'Windows, French windows, etc.' being replaced by 'Tiles, flagstones, bricks, etc.'. 'Other structures, etc.' experienced a 39.6% decline in its value over 2010-2018 while 'Doors, windows, etc.' and 'Ready-mixed concrete' saw an increase of 58.5% and 71.2% respectively in their domestic sale value over the same period. Table 1 presents the top five most domestically sold construction products, both in the UK and the EU-27, which made up 41.1% of all UK construction product sales in 2018[44].

Table 1: 5 most domestically sold construction products in the UK and EU in 2018

| | UK | | | EU-27 |
|---|---|---|---|---|
| | **Product** | **Value (EUR m)** | **Share in construction product domestic sales (%)** | **Product** |
| **1** | Other structures, etc. (group 251123) | 3,122.4 | 11.5 | Other structures (group 251123) |
| **2** | Doors, windows, | 2,463.1 | 9.0 | Doors, windows, etc. |

| | UK | | | EU-27 |
|---|---|---|---|---|
| | Product | Value (EUR m) | Share in construction product domestic sales (%) | Product |
| | etc. (group 251210) | | | (group 251210) |
| 3 | Ready-mix concrete (group 236310) | 2,180.0 | 8.0 | Ready-mixed concrete (group 236310) |
| 4 | Tiles, flagstones, bricks, etc. (group 236111) | 1,728.4 | 6.3 | Prefabricated buildings of metal (group 251110) |
| 5 | Builders' joinery and carpentry of wood (group 162319) | 1,715.6 | 6.3 | Prefabricated structural components for building or civil engineering, etc. (group 236112) |

*Source: PRODCOM, 2020*[45].

## Export of construction-related products and services

The ranking of the **most exported construction products** has experienced slight variations since 2010 involving ‘Bridges and bridge-sections of iron or steel’ in 2010 being replaced by ‘Windows, French windows, etc.’ in 2018. The value of exports of ‘Other structures and parts of structures’ decreased by 53.5% over 2010-2018, whereas ‘Doors, windows and their frames, etc.’ and ‘Prefabricated buildings of metal’ experienced 67.2% and 108.3% increases in export value respectively. The top five most exported construction products from the UK and the EU-27 are summarised in Table 2. Together, these made up 46.0% of all construction product exports in 2018[46].

Table 2: 5 most exported construction products in the UK and EU in 2018

| | UK | | | EU-27 |
|---|---|---|---|---|
| | Product | Value (EUR m) | Share in construction product export sales (%) | Product |
| 1 | Other structures, etc. (group 251123) | 206.6 | 19.5 | Ceramic tiles and flags (group 233110) |
| 2 | Prefabricated buildings of metal (group 251110) | 93.3 | 8.8 | Other structures, etc. (group 251123) |
| 3 | Doors, windows and their frames, etc. (group 251210) | 76.5 | 7.2 | Fibreboard of wood, etc. (group 162115) |
| 4 | Portland cement, aluminous cement, slag cement and similar hydraulic cements (group 235112) | 60.9 | 5.8 | Doors, windows, etc (group 251210) |
| 5 | Windows, French windows and their frames, doors etc. (group 162311) | 49.2 | 4.6 | Marble, travertine, alabaster, etc. (group 237011) |

*Source: PRODCOM, 2020*[47].

**In terms of cross-border provision of construction services[48], the UK exported EUR 1.1 billion to the EU-27 and 2.4 billion worldwide in 2018[49]. This represents an increase of 51.2% compared to EUR 1.6 billion exported to the world in 2010.**

In parallel, it imported EUR 1.4 billion from EU-27 and EUR 2.4 billion worldwide in construction services in 2018, a 48.5% rise since 2010. The UK therefore reported a **trade deficit** of EUR 22.6 million in 2018.

## Access to finance in the construction sector

According to the **2021 Survey on the Access to Finance of Enterprises (SAFE) report**, 37.9% of small and medium enterprises (SMEs) in UK reported bank loans as being relevant, below the EU-27 average (45.7%). 6.4% of the SMEs reported using bank loans recently (between April 2021 and September 2021), below the EU-27 average (14.2%). During the same period, 8.7% of SMEs in UK applied for a bank loan, well below the EU-27 average of 21.3%. 2.8% of SMEs in UK did not apply for bank loans fearing rejection, well below the EU-27 average (4.7%). 65.1% of SMEs did not apply for bank loans because of sufficient internal funds, higher than the EU-27 average (47.7%)[50]. Out of those who applied for a bank loan, 66.7% received everything they requested, which is below the EU-27 average of 71.3%.

The availability of bank loans during April to September 2021 for SMEs in UK also changed. 11.3% of SMEs opined that the availability of bank loans has improved for the period, below the EU-27 average (15.6%). 7.2% of SMEs mentioned that it has deteriorated, below the EU-27 average (10.1%). However, around 72.6% of SMEs believed that the condition of availability of bank loans remains unchanged, above the EU-27 average (64.0%)[51].

The requirement of bank loans between April and September 2021 increased for 14.0% of SMEs in UK, below the EU-27 average (18.1%). Over the same period, the requirement of bank loans decreased for 15.9% of SMEs, slightly above the EU-27 average (15.7%). 70.1% of SMEs also reported that their requirement for bank loans remained unchanged over the same period, above the EU-27 average (65.4%)[52].

**As per the EIB Investment Survey (EIBIS) for 2021, 22.0% of firms in the UK construction sector were dissatisfied with the cost, 22.0% with the amount of financing and 4.0% with the collateral requirements[53].**

As per the survey, 7.0% of all firms in the UK could be considered as financially constrained, well above the EU-28[54] average of 5.0%. The share was 11.0% for firms in the construction sector while it stood at 13.0% for service sector firms. The report further stated that the availability of finance is considered as a long-term barrier to investment by 31.0% of the firms in the construction sector[55].

The **net annual lending** to construction companies amounted to GBP 31.6 billion (EUR 34.9 billion) in 2019, 32.6% above the 2010 level. Nevertheless, it has been declining since 2013 levels (GBP 52.3 billion). The Funding for Lending Scheme aims to encourage banks and building societies to lend more to households and businesses. Smaller house-builders in particular are facing funding issues. The high cost of land and difficulty in obtaining planning permission increases the up-front capital requirements for building dwellings, as well as the uncertainty over whether completed units can be sold[56]. Recently, the UK government adopted various initiatives to improve access to finance:

- the British Business Bank (BBB) launched a new interactive online Finance Hub offering independent information on finance options for scale-up, high-growth and potential high-growth businesses. It also includes the BBB's new Finance Finder that allows smaller businesses to explore and identify likely practical financing options[57].
- new provisions to allow small businesses to claim legal assistance against unfair contracts that stop them from raising money from unpaid invoices. Under the new laws, most of the contractual restrictions entered after 31 December 2018 will have no effect and can be disregarded by small businesses and finance providers[58].
- a EUR 1.17 billion (GBP 1.0 billion) loan financing facility from The Housing Delivery Fund, to support SME housing developers and speed up the final delivery of new homes across England. Loans ranging from EUR 5.8 million (GBP 5.0 million) to EUR 117.0 million (GBP 100.0 million) are made available for developers demonstrating required experience and commitment as well as a good track record of delivering challenging projects on time[59].
- trade bodies have been permitted to highlight the best and worst payment practices followed by large companies with market dominance. Innovative technologies are being promoted to assist small firms in managing their payment processes. Further, the UK government has also announced a commitment to pay 90.0% of undisputed invoices from SMEs within five days[60].

Some of the older schemes relevant to the construction sector include:

- the **Supply Chain Finance** scheme offering to release cash to the supply chain in advance of contracted payment terms. Large companies can notify their supplier's bank when an invoice has been approved for payment. The bank is then able to offer an immediate advance to the supplier at lower interest rates, knowing the bill will be paid. Major UK construction companies adopted this scheme, reporting a substantial number of adherents among their suppliers[61].

- the **Project Bank Accounts (PBAs)**, set up by the Cabinet Office to facilitate payments to the higher-tier contractors. The GBP 2.0 billion (EUR 2.4 billion) spent via PBAs have reached tier 3 contractors within five business days. Successful examples of PBA implementation include Highways England, the government-owned company managing motorways and major roads, which can serve as a best practice[62]. A cash retention (generally 3% or 5% of the value of the work completed) is withheld by the client and is often not released at all or in a timely manner, which is a serious issue for many cash flow dependent SMEs.

Another successful funding initiative includes the **Home Building Fund**, a flexible funding source managed by the Homes and Communities Agency (HCA) and is open to small builders, community builders, custom builders and renovation specialists. Loans ranging from GBP 250,000 (EUR 276,315) to GBP 250.0 million (EUR 276.3 million) are available, with smaller loans considered for innovative housing solutions and serviced plots for custom builders. The fund provides loan funding to convey the development costs of building homes for sale or rent (development finance)[63].

In response to the funding difficulties of businesses during the COVID-19 pandemic, in 2020 the government launched four loan schemes to support businesses:

- **Bounce back loan scheme (BBLS)** provided financial support to businesses across the UK that were losing revenue, and seeing their cashflow disrupted, because of the COVID-19 outbreak. Businesses could benefit from up to GBP 50,000 (EUR 59,500) in finance. The scheme has supported over 1.5 million small businesses affected by the COVID-19 pandemic with nearly GBP 45.0 billion (EUR 53.6 million). The scheme was closed on 31st March 2021[64].
- **Coronavirus Business Interruption Loan Scheme (CBILS)** was designed to provide financial support to smaller businesses across the UK that were losing revenue, and seeing their cashflow disrupted, as a result of the COVID-19 outbreak. Through CBILS, businesses could access financial support of up to GBP 5.0 million (EUR 5.9 million) if they had been adversely affected by COVID-19. The scheme has provided finance to over 87,000 businesses. The scheme was closed on 31st March 2021[65].
- **Coronavirus Large Business Interruption Loan Scheme (CLBILS)** was introduced to support UK mid-cap and larger enterprises with turnover in excess of GBP 45.0 million (EUR 53.6 million) during the COVID-19 outbreak. It enables companies with turnover up to GBP 250.0 million (EUR 297.5 million) to access facilities up to GBP 25.0 million (EUR 29.8 million), and larger companies to access up to GBP 50.0 million (EUR 59.5 million). GBP 5.1 billion (EUR 6.1 billion) in lending to larger businesses has been provided. The scheme was closed on 31st March 2021[66].
- **COVID Corporate Financing Facility (CCFF)** was designed to support liquidity among larger firms, helping them to bridge COVID-19 disruption to their cash flows through the purchase of short-term debt in the form of commercial paper (CP). The CCFF lent over GBP 37.0 billion (EUR 44.0 billion) to 107 different companies between March 2020 and March 2021, with a peak issuance in the scheme of over GBP 20.0 billion (EUR 23.8 billion) in May 2020. The scheme also closed in March 2021[67].

**Data from the British Business Bank showed construction companies have taken the largest proportion (17%) of Bounce Back Loans compared with other sectors, and the second largest proportion (14%) of CBILS. Self-employed construction workers have also received GBP 7.8 billion (EUR 8.9 billion) in grants to cover lost income. They have been the biggest users of the Self-Employment Income Support Scheme with three times more claims coming from the construction sector[68].**

In April 2021, the **Recovery Loan Scheme (RLS)** was launched which provides financial support to businesses across the UK as they recover and grow following the COVID-19 pandemic. In the Autumn

Budget 2021, the government announced that the scheme would be extended by six months to 30th June 2022, with some changes applying from 1st January 2022. Firstly, the scheme will only be open to businesses with a turnover not exceeding GBP 45.0 million (EUR 53.6 million) per annum. Secondly, the maximum amount of finance available will be GBP 2.0 million (EUR 2.4 million) per user and the guarantee coverage will be reduced to 70.0%[69].

**According to Bank of England, loans to SMEs in the construction sector grew by 47.7% between December 2019 and December 2020. Additionally, SMEs in the construction sector were the third largest recipient of loans at GBP 21.0 billion (EUR 25.0 billion) at the time of the ongoing COVID-19 pandemic[70].**

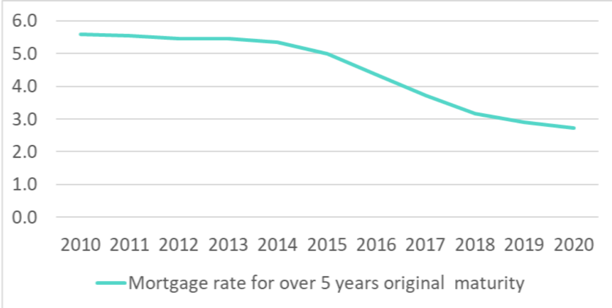
## Access to housing

**In 2018, 91.5% of the UK total population lived in cities and greater cities, adding to the existing pressure on the construction of residential housing in major cities like London.**

In parallel, the **number of households** increased by 8.1% between 2010 and 2019, reaching 29.5 million in 2019. Moreover, the **mean equivalised net income** saw a 28.9% increment over 2010-2018, amounting to GBP 22,686 in 2018 (EUR 25,642), well above the EU-27 average of EUR 19,067.

Mortgage lending to households also experienced growth over the 2010-2019 period, with total **outstanding residential loans** increasing by 22.6%, from EUR 1,393.0 billion in 2010 to EUR 1,708.1 billion in 2019[71]. This revival is also due to plummeting **mortgage interest rates** (Figure 8), which reached a bottom-low of 2.9% in 2019. It further declined to 2.7% in 2020. Nevertheless, the low interest rates and increasing lending may worsen the indebtedness situation of UK households. The average total debt per household including mortgage amounted to GBP 62,965 (EUR 74,928.4) as of October 2021. As per the Office for Budget Responsibility's October 2021 forecast, total household debt is expected to increase from GBP 2.0 trillion (EUR 2.4 trillion) in 2020 to GBP 2.4 trillion (EUR 2.9 trillion) in 2025. This would result in an average household debt of GBP 82,957 (EUR 98,718.8), a rise of 31.8% since October 2021[72].

Figure 7: Mortgage rates for loans for over 5 years original maturity (%) between 2010 and 2020




*Source: ECB MFI Interest Rate Statistics, 2021.*

At the same time, residential construction activities have been picking up. In fact, the building of about 129,700 permanent dwellings had started in 2020, an increase of 17.2% compared to the 2010 value of 110,660 and 15.2% decrease compared to 2019 value of 153,000[73]. Similarly, 147,880 dwellings were completed in 2020, representing a 38.6% increase and 16.9% decrease compared to completions in 2010 and in 2019 respectively[74]. This increase of residential construction is also linked to the implementation and further extension of the UK government's 'Help to Buy' scheme through to March 2023, which further boosts demand for new builds.

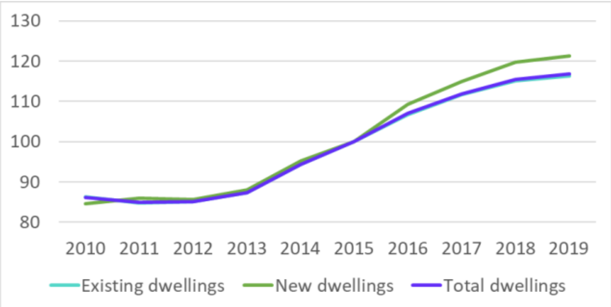
The UK faces a housing crisis despite fair social housing being defined as a priority by the government. As per Housing Charity Shelter, 1.2 million affordable homes will be required for younger families who cannot afford to buy or rent. In response, the government plans to build 250,000 homes by 2022, including homes for social rent[75].

According to a research by Heriot-Watt University, England has a backlog of 3.9 million housing units, meaning 340,000 new housing units need to be built each year until 2031 (including 90,000 for social rent), substantially higher than the government's current target of 300,000 units annually[76]. The shortage is particularly predominant in Greater London and the Southeast (Kent, Surrey and Sussex), partly due to complex and costly planning permissions. Contributing to this crisis are the rising prices, outpacing the increase in disposable income[77].

**In the first three quarters of 2021, the construction of 46,010 homes was started, a 7.0% increase on the last three quarters of 2020. During the same period, 49,470 homes were completed, representing a 4.0% increase on the previous quarter[78].**

The UK property market has experienced a steady rise since 2013, with the **house price index** for total dwellings in the country increasing by 16.7% between 2015 and 2019 alone. This was led by a 16.3% and 20.8% rise in the house price index of existing and new dwellings, respectively, over the same period (Figure 8).

Figure 8: House price index in the UK between 2010 and 2019 (2015=100)




*Source: Eurostat, 2020.*

House prices increased by 8.5% in 2020 compared to 2019, the highest annual growth since October 2014. Some of the leading performers include Wales (10.7%) followed by England (8.5%) and Scotland (8.4%)[79].

**During the year to November 2021, house prices increased by 10.0%, up from 9.8% in October 2021. Average house prices increased over the year in Wales (12.1%) followed by Scotland (11.4%) and Northern Ireland (10.7%)[80].**

House price index for total dwellings between 2015 and 2019 ↑ **16.7%**

Since 2010, UK's **home ownership rate** has declined, standing at 65.2% in 2018 compared to 70.0% in 2010. This rate increases to 69.1% for the population whose income is **above 60% of the median equivalised income** but drops to 47.6% for those below this threshold in 2018[81]. Conversely, the share of tenants has been increasing, from 30.0% in 2010 to 34.8% in 2018 (from 47.6% to 52.4% for the population below 60% of median equivalised income), as ownership becomes increasingly unattainable. Housing affordability issues are also reflected by the **housing cost overburden rate**[82], which stood at 15.1% in 2018[83], above the EU-27 average of 9.6%[84]. Several actions are being adopted by the government to address the housing shortage and the issue of affordability (see Section 6 National and regional regulatory framework).

Nevertheless, the **overcrowding rate**[85] in 2018[86] stood at 4.8%, significantly below the EU-27 average of 17.1%[87]. Similarly, the **severe housing deprivation rate**[88] declined from 2.8% in 2010 to 1.9% in 2018[89], much below the EU-27 average of 4.0%[90].

## Infrastructure

**According to the 2019 Global Competitiveness Report, UK ranks 11th out of 141 in terms of its infrastructure. The country holds the 2nd position in terms of electricity access. It also ranks 6th and 9th in terms of airport connectivity and linear shipping connectivity respectively[91].**

Meanwhile, it ranks 20th with regard to road connectivity, 21st in terms of efficiency of seaport services and 36th in terms of both quality of road infrastructure as well as efficiency of air transport services.

Currently, UK's infrastructure networks are under pressure with its rail, road and aviation networks reaching their capacity limit. Historically, the UK has often struggled to deliver timely and cost-effective infrastructure due to short-termism, fragmented decision-making as well as complex and restrictive spatial planning systems. The country has already started taking steps to cover the infrastructure deficit. In July 2018, the National Infrastructure Commission (NIC) published its long-term infrastructure needs assessment for the period 2018-2050. A full government response under 'National Infrastructure Strategy' is under consideration[92].

In 2018, an ambitious pipeline of infrastructural projects amounting to GBP 600 billion (EUR 684 billion) was announced by the government, which relied both on public and private funds (see section on TO 1 – Investment conditions and volumes). Post-Brexit, access to European Investment Bank (EIB) funding will cease. It is estimated that this will have a large impact on the country's future construction pipeline as the EIB held an important role in funding UK projects in the past, particularly in infrastructure and funding projects based around less established technologies[93].

In May 2020, the UK Transport Secretary announced the investment of GBP 1.7 billion to improve journeys for cyclists, pedestrians and drivers across England through repairs to local roads. Additionally, GBP 175.0 million would be directed towards fast tracked construction works which would ensure road and rail networks get vital repairs while fewer passengers were using transport systems. These investments will support the country's economic recovery and continue to level-up infrastructure[94].

**In August 2021, the Infrastructure and Projects Authority (IPA) published the National Infrastructure and Construction Pipeline 2021. The government sets out how GBP 650.0 billion (EUR 773.5 billion) of private and public investment will be implemented in infrastructure projects across the country over the next decade - creating new opportunities for thousands of apprentices, technicians, graduates and skilled workers. Of the projected GBP 650.0 billion (EUR 773.5 billion) of public and private investment, GBP 200.0 billion (EUR 238.0 billion) will be invested by 2024-2025. For the first time, the pipeline also forecasts future workforce demand, with the investment expected to generate around 425,000 jobs annually over the next four years[95].**

In June 2021, the UK Infrastructure Bank was launched. The new, government-owned policy bank focuses on increasing infrastructure investments across the UK. The bank will provide financing and advisory support to local authority and private sector infrastructure projects across the UK to help meet government objectives on climate change and regional economic growth. It will be able to deploy GBP 12.0 billion (EUR 14.3 billion) of equity and debt capital and be able to issue up to GBP 10.0 billion (EUR 11.9 billion) of guarantees[96].

# 4

# Key issues and barriers in the construction sector

## Company failure

**Company births** in the narrow construction sub-sector increased by 84.1%, from 27,345 in 2010 to 50,335 in 2018[97], whereas the number of **company deaths** decreased by 4.1%, from 39,095 in 2010 to 37,490 in 2018. Similarly, the real estate activities sub-sector experienced a 88.4% increase in company births (from 8,180 in 2010 to 15,410 in 2018) and a 15.0% increment in deaths (from 7,145 in 2010 to 8,220 in 2018). Company births in the architectural and engineering activities sub-sector also experienced a 70.3% growth, from 6,315 to 10,755 over the 2010-2018 period, closely followed by company deaths which increased by 65.9%, from 6,475 in 2010 to 10,740 in 2018.

Company births in the narrow construction sub-sector between 2010 and 2018 ↑ **84.1%**

Company deaths in the real estate activities sub-sector between 2010 and 2018 ↑ **15.0%**

In 2020, the narrow construction sub-sector reported a 36.5% decline in its registered company **insolvencies,** from 3,428 in 2019 to 2,176 in 2020. In fact, as of Q3 2021, only 1,809 registered companies reported insolvency in the UK narrow construction sub-sector. Similarly, the number of companies registering corporate insolvencies in the real estate activities sub-sector decreased by 28.5%, from 515 in 2019 to 368 in 2020. Further, as of Q3 2021, only 280 registered companies reported insolvency in the UK real estate activities sub-sector[98].

The UK broad construction sector is highly competitive with liquidity still a challenge as banks try to reduce their exposure to construction and related sectors. Legacy contracts continue to be the primary cause of most business failures due to low to almost negligible profit margins[99].

According to the National Federation of Builders (NFB), **bankruptcy** in the construction sector is relatively high because, to secure contracts in the years of economic downturn, the UK companies were bidding at much lower prices for their work. Following the COVID-19 crisis, however, these companies could no longer cope with the rising costs of labour and materials. This is exacerbated by the late payments and retentions issues (as in the example of the Carillion collapse).

## Trade credit

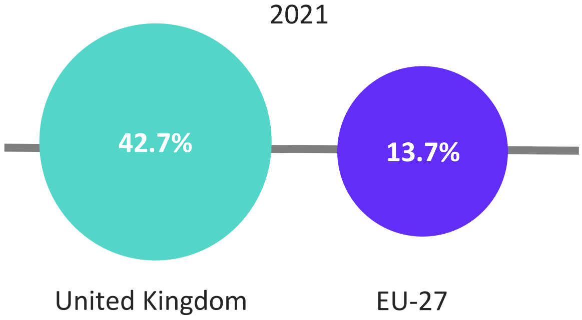
**According to the Survey on the Access to Finance of Enterprises (SAFE) 2021 report, trade credit constituted a relevant source of financing for 57.2% of SMEs in UK, well above the EU-27 average of 27.8% in 2021[100].**

Furthermore, as per the report, 42.7% of the SMEs in UK reported of using trade credit between April 2021 and September 2021, well above the EU-27 average of 13.7%. During the same period, 40.6% of SMEs in UK applied for trade credit, higher than the EU-27 average of 29.6%. 1.1% of SMEs in UK did not apply due to possibility of rejection and 35.9% of SMEs did not apply because of sufficient internal funds, lower than the EU-27 average of 37.5%[101].

Amongst the firms which applied for trade credit in UK, 67.3% of SMEs received everything they applied for, below the EU-27 average of 71.6%. 21.4% of SMEs in UK received above 75.0% of what they applied for in trade credit, higher than the EU-27 average of 9.6%. 3.9% of SMEs in UK received below 75.0% of what they applied for, lower than the EU-27 average of 8.7%. Trade credit applications for 2.8% of the SMEs were rejected[102].

Regarding the availability of trade credit during April 2021 and September 2021, 13.2% of SMEs reported that the conditions have improved, lower than the EU-27 average of 14.7%. However, 5.7% of SMEs in UK also reported that the availability of trade credit had deteriorated, lower than the EU-27 average of 8.2%. For 77.8% of SMEs, the availability of trade credit remained unchanged during the same period, well above the EU-27 average of 69.7%[103].

Share of companies using the trade credit in 2021




**According to the Atradius Payment Practice Barometer 2021 survey report, businesses across the UK transacted 53.0% of all B2B sales on credit[104].**

The reasons for offering credit were stimulation of sales growth, most often by encouraging repeat business with existing customers. Whereas requests for trade credit were refused due to higher risk of payment default. 70.0% of the businesses surveyed stated that they retained credit risk in-house. Credit management techniques include avoidance of credit risk concentrations and the adjustment of payment terms[105].

As per the survey report, businesses in the construction sector reported increasing use of a variety of credit management solutions. 57.0% of respondents reported adjusting payment terms, shortening terms for customers while attempting to increase terms negotiated with suppliers compared to the 48.0% reported last year. 54.0% opted for factoring, an increase on the 39.0% that used factoring in 2020. However, 49.0% opted to retain credit risk in-house and set aside bad debt reserves; same as reported in 2020[106].

Additionally, 40.0% of the construction businesses cited the increased costs associated with debt collection and credit management as the reason for taking out a credit insurance policy. As a result, 40.0% insured their trade receivables this year, up from 35.0% in 2020[107].

In the coming year, with regard to credit management plans, 60.0% of businesses in the construction sector will either retain their use of factoring or will avoid credit risk concentrations. Among the businesses planning to offer B2B customer credit next year, 46.0% of businesses would do so to stimulate customer demand, and 26.0% in order to give customers more time to pay[108].

## Late payment

**According to the D&B Payment Study 2021, 54.2% of companies in the broad construction sector make payment within the due date, while 3.1% of companies in the whole sector pay after 90 days past the due date[109].**

As per the report, 42.9% of UK companies paid their suppliers on time in 2020, lower than 43.8% in 2019. The report further states that the share of 'bad payers' at the end of 2020 accounted for 4.1% of total companies, taking more than 90 days to repay, while in 2019 it stood at 3.7%. With a share of 61.7% of punctual payers, agriculture and forestry was the best performing sector. With regard to company size, small companies accounted for 2.2% while medium sized companies accounted for 2.3% of companies making payments over 90 days in 2020[110].

**According to the European Payments Report 2021, 50.0% of businesses in UK have agreed to accept longer payment terms in order to avoid damaging client relationships[111].**

As per the report, 46.0% UK firms consider the widening gap between the payment terms and duration of pay is a real risk to the sustainable growth of the business. On average, business-to-business (B2B) customers in UK are allowed 40 days to pay dues, lower than the EU-28[112] average of 41 days. However, in practice UK B2B customers took an average of 52 days to pay dues in 2021, on par with the EU-28[113] average of 52 days[114].

36.0% of UK companies consider that late payments lead to loss of income and prohibit growth potential, with 41.0% of companies believing that the financial difficulties of debtors are the main cause of the problem[115].

Further, with the ongoing COVID-19 pandemic, the situation has become more difficult. According to the report, 42.0% of respondents expect debtors to have liquidity challenges due to the impact of COVID-19 that will likely affect late payments. This is lower than the EU-28[116] average of 48.0%[117].

Additionally, 43.0% of respondents in UK ranked "Risk of a pan-European recession" as one of the main challenges in terms of their customers paying on time and in full over the next 12 months[118]. This is slightly above the EU-28[119] average of 40.0%. At the same time, 62.0% of respondents are more concerned than ever before about debtors' ability to pay on time, on par with the EU-28 average of 62.0%. Lastly, 62.0% of respondents believe the risk of late/non-payments will increase during the next 12 months, below the EU-28 average[120] of 66.0%[121].

**According to the Atradius Payments Practices Barometer 2021, 44.0% of the total value of UK business invoices were overdue in 2021[122].**

Late payments in the UK construction sector recorded an improvement in 2021. 37.0% of the businesses in construction sector took longer than last year to convert invoices to cash. This is an improvement on the 55.0% reported in 2020. 49.0% of the firms' invoice-to-cash turnaround remained the same and 14.0% reported an improvement, cashing in invoices more quickly. Similarly, due to a decrease in the frequency of late payment, the total value of overdue invoices reduced year-on-year. In 2021, 39.0% of the total value of B2B sales is overdue compared to 44.0% in 2020.

Further, 39.0% of the UK construction businesses delayed paying suppliers in order to protect their own cash flow (slightly less than the 41.0% in 2020). Also, 39.0% of the respondents increased the amount of time and resources spent on collecting overdue invoices.

**According to the SAFE 2021 report, 12.3% of SMEs in UK reported facing late payment issues on a regular basis, above the EU-27 average (11.8%)[123].**

As per the report, 21.3% of SMEs reported that their payments to suppliers have been affected as a result of late payments by customers. For 10.6% of SMEs, late payment affected production or operations, and for 15.0% it impacted investments or new hiring. 17.3% of SMEs also reported that their loan repayments have been delayed, or they have had to seek additional financing, as a result of late payments[124].

## Time and cost of obtaining building permits and licences

**As per the World Bank's Doing Business Report 2020, the UK ranked 23rd (out of 190 countries) in terms of 'dealing with construction permits', a decline from 17th position in 2019[125].**

Generally, nine procedures and 86 days are required to complete the administrative formalities to build a warehouse[126], significantly below the OECD high-income average (12.7 procedures and 152.3 days respectively). Furthermore, the cost of completing all the formalities to build a warehouse represents 1.1% of the value of the warehouse, well below the OECD high-income average of 1.5%. In the UK, licensing requirements to work on construction projects vary locally. A specialised and licensed construction professional, the Approved Inspector (AI), is required to oversee construction projects. The hiring cost of an AI amounts in average to GBP 2,964 (EUR 3,540) (Table 3).

Table 3: Construction procedures timing and costs in the UK

| Procedure | Time to Complete | Associated Costs |
|---|---|---|
| **Obtain planning permission** | 56 days | GBP 8,012 (EUR 9,570) |
| **Hire an Approved Inspector** | 1 day | GBP 2,964 (EUR 3,540) |
| **Approved Inspector files the initial notice to the Local Authority** | 5 days | no charge |
| **Apply for water and sewage connection** | 1 day | GBP 485 (EUR 579) |
| **Receive inspection from the water and sewage provider** | 1 day | no charge |

| | | |
|---|---|---|
| **Submit application to local Fire and Rescue Authority and obtain approval** | 21 days | no charge |
| **Obtain water and sewerage connection** | 20 days | GBP 5,321 (EUR 6,355) |
| **Request and receive energy performance certificate from Accredited Energy Assessor** | 1 day | GBP 78 (EUR 93) |
| **File completion certificate with the Local Building Control Department** | 1 day | no charge |

*Source: Doing Business overview for the UK, World Bank, 2020.*

## Skills shortage

**The number of job vacancies in the narrow construction sub-sector reached 19,000 in 2020, representing a 81.0% increase compared to 10,500 in 2010.**

**Job vacancies** in the real estate sub-sector grew by 38.7%, from 6,250 in 2010 to 8,667 in 2020, although still lower than its peak value of 12,000 in 2015.

Nevertheless, the **number of tertiary students** graduating in engineering, manufacturing and construction, and specifically in architecture and building, almost remained in line over the 2010-2019 period, from 29,650 to 29,684. Moreover, **adult participation in education and training** in the narrow construction sub-sector went down from 19.1% in 2010 to 17.1% in 2019, well below the peak of 20.6% in 2008. In the case of real estate activities, adult participation in education and training fluctuated, initially growing from 22.5% in 2008 to 28.4% in 2010, but subsequently declining to 15.5% in 2019.

The UK construction sector suffers from skilled labour shortage which is hindering its overall growth. As per the Royal Institute of Chartered Surveyors (RICS), the shortfall in skilled construction workers is currently at the highest point since 2007. RICS estimated that at least 200,000 new workers need to be recruited by 2020 to even be on track to build 300,000 new homes per year by mid-2020s, as pledged by the UK government in its 2017 budget[127].

As per the 2011 UK census, one out of every five construction employees were over 55 years of age. This implies that by early 2020s, almost 20.0% of the construction workforce will have already reached or be close to retirement age, creating a serious labour shortage situation for the sector[128].

According to estimates, almost 157,000 jobs will need to be filled by 2021[129]. As per the Construction Industry Training Board (CITB), 400,000 skilled workers will reach retirement age in the next ten years[130]. Particular shortages have been observed for professions such as scaffolders, logistics personnel and plant operatives[131]. These trends also imply an annual need of approximately 4,860 non-construction professionals (e.g. IT, technical and office-based staff), 3,420 other construction process managers, 2,380 wood trade professionals, 1,900 plumbing and HVAC trades, 1,420 surveyors and 1,400 senior executives/process managers[132]).

Nonetheless, the sector continues to face several issues including relatively ineffective education and training systems for basic and technical skills, slow career progression, low employee productivity and a negative perception of the industry among youngsters often considering it as old-fashioned and unappealing.

The UK's exit from the EU Single Market is likely to further worsen the current skills shortage for the construction sector, particularly if no follow-up agreements on free movement of people is enacted with the EU[133]. According to the National Federation of Builders (NFB), overall there is an annual need of 33,700 skilled workers between 2019 and 2023 to bridge skills shortage gap.

Several initiatives have been taken by the UK to tackle these issues (see Section 6 National and regional regulatory framework). However, some of the existing training initiatives do not place sufficient importance on civil engineering skills and are too focused at the local level. Additionally, the construction training mostly focuses on a specific trade skill rather than developing long-term careers, including development and upskilling. There is a growing importance of digital skills among construction workers. CITB aims to develop digital competencies for various roles by way of both structured training and continuous learning.

# Sector and sub-sector specific issues

## Material efficiency and waste management

**In 2018[134], the UK generated 137.8 million tonnes of construction and demolition waste (CDW)[135].**

In particular, non-hazardous CDW amounted to 136.9 million tonnes in 2018, 15.8% above the 118.2 million tonnes reported in 2010[136]. The total waste generated from households was 26.4 million tonnes in 2018 for UK. This shows a decrease of 1.8% from 26.9 million tonnes in 2017. The recycling rate of waste from households in 2018 was 45.0% for the UK. England is responsible for most of the waste from households, generating 22.0 million tonnes (83% of the UK's total) in 2018. Wales contributed the highest in the recycling rate with 54.1%. Waste generated by households has decreased for the last two years in UK as a whole[137].

The 'Construction Commitments: Halving Waste to Landfill' is a voluntary agreement undertaken by construction companies. It recommends the adoption of guidelines by all UK construction clients and contractors such as data should be collected for all projects with a value of GBP 300,000 (EUR 358,320) or more, as this is the threshold for the legal requirement for a construction site waste management plan in England[138]. In addition, the UK have used incentives like landfill taxes and levies on virgin aggregate to decrease the amount of CDW sent to landfill[139].

## Climate and energy

**Emissions of greenhouse gases** (carbon monoxide and dioxide, methane and nitrous oxides) from the narrow construction and the real estate activities sub-sectors in the UK amounted to a total of 12.9 million tonnes and 1.0 million tonnes in 2019[140], respectively. Emissions in the narrow construction sub-sector increased by 5.8% over the 2010-2019 period. Similarly, the real estate activities sub-sector experienced an increase of 4.0% in emissions in 2019 compared to the 2010 level.

Since 1990, there continues to be a gradual reduction in greenhouse gas emissions. Lately, this decrease can largely be attributed to a change in the fuel mix for electricity generation, with less use of coal and gas and increased usage of renewables[141]. The current gap in as-built energy and carbon performance of buildings, i.e. the difference between the designed performance and the one physically achieved by the completed building, undermines the UK's capacity to meet the objectives of the national carbon reduction plan.

**In 2019, the UK Government self-imposed a legally binding target to reduce its net greenhouse gas emissions to zero by 2050. Furthermore, in April 2021, the UK committed to a medium-term target to reduce emissions by 78.0% in 2035 compared to its 1990 levels[142].**

# 5

# Innovation in the construction sector

## Innovation performance

**As per the European Innovation Scoreboard 2021, the UK is regarded as a Strong Innovator, same as the previous year[143].**

The top three indicators of the UK innovation scoreboard included foreign doctorate students, doctorate graduates and innovative SMEs collaborating with others[144].

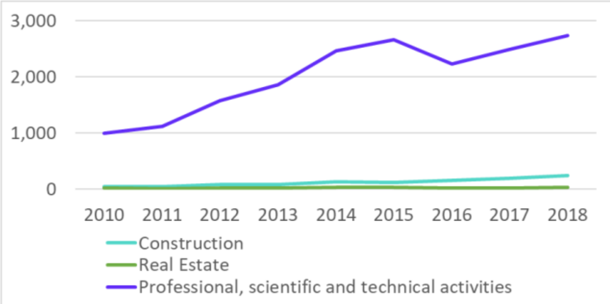
As per the scoreboard, the UK's innovation performance slightly deteriorated primarily due to a decline in the functioning of several indicators using innovation survey data, PCT patent applications, trademark and design applications as well as environment-related technologies. Nonetheless, the country achieved above average scores on the climate change related indicators[145].

In parallel, the greatest increase in BERD was recorded by the narrow construction sub-sector, which experienced a 444.8% increase between 2010 and 2018[146], from EUR 44.3 million to EUR 241.3 million. Similarly, BERD in the professional, scientific and technical activities increased by 176.7%, from EUR 990.6 million in 2010 to EUR 2.7 billion in 2018. Likewise, BERD in the real estate activities also increased by 154.0%, from EUR 11.7 million in 2010 to EUR 29.6 million in 2018, the lowest across all sub-sectors.

BERD in the narrow construction sub-sector between 2010 and 2018 ↑ **444.8%**

Moreover, the annual average number of **construction-related patent applications** has been fluctuating over the 2010-2020 period. In fact, over the 2010-2015 period, an average of 310 patents were filed in the European Patent Office (EPO) and United States Patent and Trademark Office (USPTO), with the year 2015 reporting the highest number of applications (325), highlighting the focus of the UK construction sector on research and development. However, since 2016 the annual average number of construction-related patent applications has been decreasing to 308 in 2020.

Figure 9: Business enterprise R&D expenditure (BERD) per construction sub-sector in the UK between 2010 and 2018[147] (EUR m)




*Source: Eurostat, 2021.*

In parallel, the total **R&D personnel** (full-time equivalents – FTE[148]) in the broad construction sector also experienced a growing trend. In line with the positive evolution of the BERD, the narrow construction sub-sector reported the highest FTE, which grew by 614.7%, from 416 in 2010 to 2,973 in 2018[149]. Likewise, the real estate activities sub-sector saw a 234.2% increment in FTE, from 196 in 2010 to 655 in 2018. The total FTE in the professional, scientific and technical activities sub-sector also soared by 166.3% over the same period, from 9,260 in 2010 to 24,655 in 2018[150].

Number of FTE in the narrow construction sub-sector between 2010 and 2018 ↑ **614.7%**

In line with the above, the UK is undertaking significant research activity in the construction sector. In 2019, the UK Research and Innovation (UKRI) announced four new research projects which will speed up assembly, save money, and improve the quality of UK building projects. It also hannounced GBP 13.3 million (EUR 15.6 million), to finance 24 collaborative research and development projects in the construction sector[151].

The **Construction Innovation Hub** (CIH) consists of a consortium including the Manufacturing Technology Centre (MTC), the Buildings Research Establishment (BRE) and the Centre for Digital Built Britain (CDBB) at the University of Cambridge. It is funded by UKRI through the Industrial Strategy Challenge Fund[152]. The hub supports collaboration across sectors and with businesses of all sizes. It supports governmental organisations, universities, technology partners as well as research and technology organisations (RTOs), to develop, commercialise and promote digital and manufacturing technologies for the construction sector[153].

In this regard, the UK government also announced its plans to accelerate public R&D funding, with more focus on high-risk, high-payoff research in emerging fields, a fast-track immigration scheme and minimizing bureaucracy in research funding. However, performing on these proposals and increasing R&D investment intensity to 2.4% of GDP by 2027, will be challenging[154].

In terms of R&D investment in the UK, it currently remains concentrated in a limited number of companies and territories. The Southeast, the East of England and London regions have taken on the majority of total UK research and innovation activity[155].

In view of the ongoing COVID-19 pandemic, many construction companies in the UK are being encouraged to apply for Credit for Increasing Research Activities (R&D tax credit) than ever before to realise significant savings in the innovation process. This may help them improve their liquidity through immediate cash savings. The R&D tax credit is an incentive created to support firms to invest in developing new or improved processes, techniques and products[156].

## Eco-innovation and digitalisation

**As per the European Commission Digital Economy and Society Index (DESI) 2020, the UK is ranked 8th out of EU-28 countries. With a 60.4 score, the UK stands above the EU-28 average score of 52.6[157].**

The UK performed well in terms of ‘Use of internet services’ and ‘Integration of digital technology’, holding the 5th (score 73.3) and 8th (score 54.2) positions respectively. Nonetheless, it scored 70.8 in ‘Digital public services’, slightly below the EU-28 average of 72.0[158].

According to the **European Investment Bank (EIB) Investment Survey 2020**[159], the most frequent long-term impacts of COVID 19 on the UK construction firms were permanent reduction in employment (50.0%), followed by increased use of digital technologies (48.0%), changes in supply chain (46.0%) and in their services and products portfolio (39.0%). Nonetheless, about 70.0% of the UK construction sector firms are expected to have implemented digital technologies within their business, either fully or partially by end-2020. As per the report, the top digital technologies implemented by businesses in the UK, either partially or fully, in the broad construction sector included internet of things (32.0%), drones (31.0%), augmented or virtual reality (24.0%) and 3-D printing (10.0%)[160].

In parallel, the Royal Institute of British Architects (RIBA), Chartered Institute of Building (CIOB) and Royal Institution of Chartered Surveyors (RICS) launched a free-to-download digital tool in October 2018 – ‘the Quality Tracker’, to improve the quality of outcomes in the construction sector. The Quality Tracker provides a constant reminder of quality targets throughout the construction project process. The Tracker sets up a formal ‘chain of custody for quality’ aligned to the RIBA Plan of Work. It improves collaboration, increases transparency, and averts disputes even when project teams grow and change. The tracker, in the long run, will boost the broad construction sector’s reputation by ensuring better quality buildings, improved human health, safety and well-being[161].

Correspondingly, the UK government has defined a **Building Information Modelling (BIM) strategy** to develop digital techniques in construction and improve its transformative potential, particularly related to recycling infrastructure and CDW valorisation[162]. The UK BIM strategy, mentioned in the “Digital Built Britain– Level 3 2016-2020” is focused at fostering the use of BIM in public construction, by requiring companies working on public sector projects to achieve BIM Level 3 in 2020.

The **National Productivity Investment Fund** foresees investments of GBP 4.7 billion (EUR 5.6 billion) to enhance UK's position as a world leader in science and innovation across numerous areas, including robotics, artificial intelligence and industrial biotechnology[163]. The UK government has already extended the NPIF until 2023-2024, raising funds to a total of GBP 37.0 billion (EUR 44.3 billion) to support investment in areas that are essential to boost productivity, such as transport, digital communication, research & development and housing[164].

In July 2018, the government launched its **Construction Sector Deal**, which outlined the government's intended route for improving productivity in the construction sector[165]. It aimed to raise total research and development (R&D) investment to 2.4% of GDP by 2027 and invest GBP 725.0 million (EUR 867.9 million) in new Industrial Strategy Challenge Fund programmes to capture the value of innovation. In the Autumn Budget 2018, the government increased the rate of R&D tax credit to 12.0% with effect from January 2018.

Additionally, the sector is characterised by specialists in narrow fields, with limited business relationships with clients and fellow professionals in other related areas. This limited collaboration also stems from the nature of construction project management and procurement, based on breaking down projects into smaller packages and components to ensure low bidding prices and control suppliers, which is not conducive to innovation. This also negatively affects knowledge transfer.

In November 2018, the UK government announced a GBP 72.0 million (EUR 86.0 million) award from UK Research and Innovation (UKRI) to the Construction Innovation Hub (CIH) for a four year work programme aimed at transforming the UK construction sector as part of the UK Industrial Strategy. Under this transformative programme, the CIH has been tasked with developing advanced, digitally enabled, manufacturing processes and products that can be used in new schools, hospitals and homes. In 2020, the CIH launched its Hub's Construction Quality Planning (CQP) process as an integral part for driving its flagship Platform Design Programme that seeks to enable new buildings to be designed and configured using a pre-defined 'kit of parts'. The CQP process is mostly applicable on products being manufactured and delivered at scale by using manufacturing-led construction techniques including offsite, Modern Methods of Construction (MMC), platform as well as Design for Manufacture and Assembly (DfMA)[166,167].

**As mentioned in its "Roadmap to Recovery" initiative, the UK government is committed to bringing emerging innovations from the Transforming Construction Challenge and Construction Innovation Hub to market. For instance, the concrete curing predictor has already been adopted on numerous projects and has delivered benefits worth more than GBP 136.0 million (EUR 162.4 million) so far[168].**

# 6

# National and regional regulatory framework

## Policy schemes

The comprehensive policy strategy for the construction sector, the **Government Construction Strategy 2016-2020**, was introduced by the Infrastructure and Projects Authority in March 2016. The strategy outlined the government's plan to increase productivity in government construction, ultimately achieving efficiency savings worth GBP 1.7 billion (EUR 2.0 billion) and provide support to 20,000 apprenticeships[169]. It covered a variety of areas in the construction sector, from skills to environmental protection. Its main objectives are:

i) the improvement of the central government's capability as the largest single construction client,
ii) integrating and increasing the use of digital construction processes (e.g. BIM),
iii) fostering smarter procurement; promoting fair payment,
iv) and reducing carbon emissions from construction, operation and maintenance of public sector buildings and infrastructure[170].

The government has proposed to create a UK Shared Prosperity Fund (UKSPF) to tackle inequalities between communities by raising productivity, with a greater focus on those regions, whose economies are furthest behind the rest of the country[171]. The UKSPF is considered as a replacement for the EU structural funding, which the UK received currently approximately EUR 2.4 billion every year. After Brexit, this fund would be used to boost businesses, employment and agriculture[172].

The UK government declared that 400,000 affordable housing units would be delivered by 2020-21, including 8,000 accessible homes for the disabled and the elderly[173]. So far, 222,000 new homes have been delivered in 2017 and 2018. This has brought the total count of affordable homes delivered since 2010 to 1.3 million[174].

In 2018, the government added GBP 500.0 million (EUR 566.0 million) to the **Housing Infrastructure Fund,** which is now worth GBP 5.5 billion (EUR 6.6 billion), aiming to support the construction of 100,000 homes by 2021. The government also committed GBP 1.4 billion (EUR 1.7 billion) to help local authorities and housing associations build 40,000 affordable homes for purchase or rent[175]. Moreover, given the particularly acute shortage in Greater London, the government allocated GBP 3.2 billion (EUR 3.8 billion) to the Greater London Authority for the construction of over 90,000 dwellings by end-2021[176]. In addition to the Housing Infrastructure Fund, there is an additional support in the form of bank guarantees. The British Business Bank aims to provide guarantees supporting up to GBP 1.0 billion (EUR 1.1 billion) of lending to SME house builders through its new scheme[177].

Furthermore, in its Autumn Budget 2018, the government abolished the Housing Revenue Account borrowing caps. This will allow local authorities to borrow freely to build more homes in their area, in line with the Prudential 15 Code. This has enabled councils to deliver a new generation of council housing – up to an estimated 10,000 homes a year[178].

The **Help to Buy: Isa (Individual Savings Account)** scheme**,** launched at the end of 2015 and subsequently extended till March 2023, is an affordable home-ownership initiative for first-time buyers and it offers a tax-free savings account and government bonus. The ISA can be opened till November 2019 and contributions to the account can be made until November 2029. The bonuses can be claimed till December 2030. Through the **Help to Buy: Equity Loan**, the government lends up to 20.0% of the cost of the newly built property to be purchased (the maximum purchase price being set at GBP 600,000), requiring the beneficiary to provide a 5.0% cash deposit and a 75.0% mortgage to make up the rest.

Finally, the **Help to Buy: Shared Ownership** scheme allows buyers to purchase a 25.0-75.0% share of a newly built home or an existing one and pay rent on the remaining share, provided their annual salary does not exceed GBP 80,000 (GBP 90,000 in London)[179]. 135,000 new shared ownership homes will be built up until 2021. Following this, the UK government decided to extend the Help to Buy Equity Loan by two years to 2023, available for first-time buyers only and with caps on the maximum house price that differ by region[180].

**In its "Roadmap to Recovery" initiative launched in October 2021, the UK government has extended the physical completion date for purchases under its Help to Buy Scheme to March 2021. Working hours on sites have been extended, wherever possible. The government has also announced the acceleration of the existing ACM (Aluminium Composite Material) Cladding Remediation Programme and has allocated GBP 1.0 billion (EUR 1.1 billion) to the non-ACM Building Safety Fund[181].**

In 2018, the government also announced a major **overhaul to the National Planning Policy Framework** to meet housing demand. The approach is focused on providing a comprehensive approach for planners, developers and councils to build more homes, more quickly and in the diverse areas with the greatest housing need[182].

In May 2018, the UK government launched the Buildings Mission under the Clean Growth Grand Challenge with the aim to reduce the energy consumption of new buildings by at least 50.0% by 2030. It also aimed to reduce the cost of retrofitting efficiency measures in existing buildings and ensure buildings are heated by clean energy sources. It is expected that over GBP 400.0 million (EUR 477.8 million) will be invested in new construction products, technologies and techniques over the lifetime of this project[183].

In order to increase the supply of housing stock in the country, the UK government started implementing initiatives outlined in the February 2017 Housing White Paper along with necessary adjustments and reforms. Cumulatively, these steps will provide more than GBP 44.0 billion (EUR 52.6 billion) in financial support till 2022-2023 and further streamline planning rules. The government has already committed more than GBP 29.0 billion (EUR 34.6 billion) of funding under its Help to Buy Equity Loan scheme from April 2013 to March 2023 with the aim to support up to 470,000 households into home ownerships[184].

In its March 2020 budget, the UK government announced a number of initiatives and funding programmes to help the construction sector and provide affordable housing options to its citizens in the midst of the COVID-19 pandemic. These include[185]:

- extension of the Affordable Homes Programme to March 2022 including a new, multi-year settlement of GBP 12.0 billion (EUR 14.3 billion). This is expected to bring in an additional GBP 38.0 billion (EUR 45.4 billion) in public and private investment,
- allocation of more than GBP 1.0 billion (EUR 1.1 billion) from the Housing Infrastructure Fund to build about 70,000 new homes in high-demand areas across the UK,
- allocation of GBP 650.0 million (EUR 776.4 million) to help rough sleepers avail permanent accommodation,
- reforming the New Homes Bonus (NHB) to incentivise greater delivery and higher access to funding,
- additional investment of GBP 1.1 billion (EUR 1.3 billion) in local infrastructure to fund key schemes including supplying 70,000 new homes,
- establishment of a new GBP 10.0 billion (EUR 11.9 billion) Single Housing Infrastructure Fund,
- cutting the cost of new homes through the new First Homes scheme. It is estimated that this will lower the cost by an average

of GBP 70,000 for eligible first-time buyers.

By March 2020, almost GBP 4.0 billion (EUR 4.4 billion) had been allocated by the UK government, through the Housing Infrastructure Fund (HIF), to support the construction of up to 340,000 new homes[186]. Additionally, the Scottish government has announced an investment of GBP 3.3 billion (EUR 3.9 billion) in affordable housing to deliver its targeted 50,000 affordable homes inclusive of 35,000 homes for social rent by end-2021. With regard to Wales, a second phase of the Help to Buy – Wales scheme is underway and is aimed at supporting the construction of over 6,000 additional new homes. It is expected to attract an investment of GBP 290.0 million (EUR 346.4 million) until 2021[187]. Further, the UK government has also announced a GBP 3.2 million (EUR 3.8 million) in emergency funding for local authorities to support rough sleepers and other vulnerable homeless people during the COVID-19 pandemic[188].

**As per its Autumn Budget 2021, the UK government has announced the introduction of a Residential Property Developer Tax (RDPT) from April 2022 onwards. Through this measure, the government aims to raise at least GBP 2.0 billion (EUR 2.4 billion) towards the cost of cladding remediation[189].**

The new tax will be applicable on companies having profits in excess of a group-wide annual profits allowance of GBP 25.0 million from UK residential property development activities. The applicable rate will be 4.0% on RDPT activity profits in excess of the GBP 25.0 million allowance. However, this excludes profits from build-to-rent activities. This tax initiative was originally announced as temporary, but the lack of a "sunset clause" makes it uncertain as to how long the tax will apply[190].

Likewise, in October 2021, the UK government announced its "Heat and Buildings Strategy" focused on incentivising households to adapt their operations to minimise greenhouse gas emissions across the life cycle of residential buildings. The Strategy also builds on the broad investment priorities of achieving a net-zero greenhouse gas emissions by 2050 as outlined in the "Ten Point Plan" announced in November 2020. As per the Strategy, the UK aims to convert all private-rented dwellings to at least Energy Performance Certificate (EPC) band C by 2028 as well as all housing stock to least EPC band C by 2035. To achieve this target, the UK government has proposed introducing a voluntary disclosure of the energy efficiency performance of homes in mortgage lenders' portfolios[191] (for more details, refer to Chapter 7 TO 3).

## Building regulations

**As per the National Federation of Builders (NFB), most of the revision of building regulations had been completed in 2010 and thus there have been no changes since then.**

Due to its administrative organisation, there are three different building regulatory regimes in the UK: England and Wales, Scotland and Northern Ireland. In England and Wales, the departments for communities and local government are responsible for building regulations, while planning and building control are the responsibility of local authorities. In terms of building enforcement, the regime in England and Wales has four main stages of approval. Approvals are carried out either by local authority inspectors or by approved inspectors.

The Building Regulations include detailed provisions on aspects such as control of building works; notices, plans and certificates; energy efficiency requirements; and water efficiency, among others[192]. Moreover, the Building Regulations are supported by a series of **Approved Documents**, which cover technical topics such as fire safety; site preparation and resistance to contaminates and moisture; ventilation; sanitation, hot water safety and water efficiency; and protection from falling, collision and impact, among others[193]. However, in the wake of the Grenfell Tower fire accident in 2017, the independent report revealed that the whole system of Building Regulation in the UK is "not fit for purpose", contains confusing rules and a lack of enforcement, which means construction companies are able to abuse the system[194]. Consequently, the independent **Review of Building Regulations and Fire Safety** examined the building and fire safety regulatory system with the key focus on residential buildings. The recommendations of the review set out a new regulatory framework to create a more simple and effective mechanism for driving building safety, to give more robust oversight of duty holders with incentives for the right behaviours, and effective sanctions for poor performance and to reassert the role of residents[195].

The **Construction Design and Management Regulations 2015** helps to improve health and safety in the construction sector. The CDM Regulations require sensible planning of the work so that the risks involved in construction are managed from end to end. The regulation details the cooperation and coordination of work with others, effective communication of information to those who need to know and have the right information about the risks and how they are being managed. It requires employers to consult and engage with their workers about the risks they face and how they are being managed[196].

On 7 February 2020, the Ministry of Housing, Communities and Local Government (MHCLG) consultation on its proposals for a new Future Homes Standard: changes to Part L and Part F of the Building Regulations for new dwellings closed. The standard's objectives include improving energy efficiency in dwellings in England by 2025 by requiring new-build homes to be future-proofed with low carbon heating and high levels of energy. In this regard, the MHCLG has also published a 'National Design Guide' which outlines its expectation from new developments[197].

Some of the initiatives announced in March 2020 Budget relating to housing regulations include[198]:

- reviewing the formula for calculating Local Housing Need (LHN) to encourage greater building within and near to urban areas,
- introduction of new permitted development rights for building upwards on existing buildings by summer 2020 and to deliver new and bigger homes,
- requirements for all local planning authorities to have up-to-date local plans by December 2023,
- introducing a new Future Homes Standard (FHS) from 2025, requiring up to 80% lower carbon emissions for all new homes.

## Insurance and liability-related regulations

In England and Wales, all contractors are required to take out **Employer's Liability Insurance (EL)**, covering loss, damage, injury or disease caused to an employee of the company. The policy must cover the employer for at least GBP 5.0 million (EUR 6.0 million) and come from an authorised insurer. Failure to do so is a criminal offence and an employer can be fined up to GBP 2,500 (EUR 2,986) per day in the case of not properly insuring employees or fined up to GBP 1,000 (EUR 1,194) if they fail to display the EL certificate or refuse to make it available to inspectors when asked[199]. Contractors must also take out public liability insurance if external parties (e.g. general public or customers) visit the construction site, so as to be covered in the case of injury to person or damage to property. Professional indemnity insurance (PI) covering negligence is also often taken out by contractors performing design works, although it is not compulsory[200].

Similarly, all professional consultants who design and/or give professional advice are often required to have PI insurance as stipulated in building contracts. Additional insurances, such as contractor's all risk cover (CAR) and product liability insurance that covers risks caused by products like bricks, are also common among contractors[201]. The time limits regarding legal action in relation to construction defects are mainly defined by the Limitation Act 1980. Limitation periods can amount to six or 12 years[202].

Moreover, **contractors' all-risk insurance** (sometimes referred to as "contract works insurance") is a policy that covers all risks usually associated with a construction project, i.e. the cost of unforeseen loss or damage to building works. Such insurance is issued under the joint names of a contractor and a principal client and protects against machinery movement, public liability, business interruption and equipment erection to mention a few[203]. Similarly, a **collateral warranty** is a legally binding agreement which is ancillary to a separate contractual agreement between two parties and which forces an extended duty of care and a broader liability on those parties. Such a warranty effectively accommodates a duty of care to be extended by a contracting party to a third party that is not party to the original contract[204].

In order to improve the distribution of risks along the construction supply chain and therefore protect smaller contractors, the **Integrated Project Insurance – IPI** has also been introduced, bringing about collective responsibility of all the actors involved in the construction process[205]. Thus, firms participating in a construction project sign up to a new contract, under which they are jointly liable.

Terrorism insurance remains a 'stand-alone' insurance obtained in addition to a conventional buildings or commercial combined policy. It covers material damage caused by an act of terrorism and is particularly relevant for building projects located in high-risk areas such as the City of London[206].

**In its "Roadmap to Recovery" document, the Construction Leadership Council (CLC) has urged the public and private sectors to consider adopting a new 'Conflict Avoidance Pledge', launched by the Royal Institution of Chartered Surveyors (RICS) in April 2020. The CLC called upon the participants to avoid disputes and seek adjudication through the most cost-effective process[207].**

# 7

# Current status and national strategies to meet Construction 2020 objectives

## TO 1 – Investment conditions and volumes

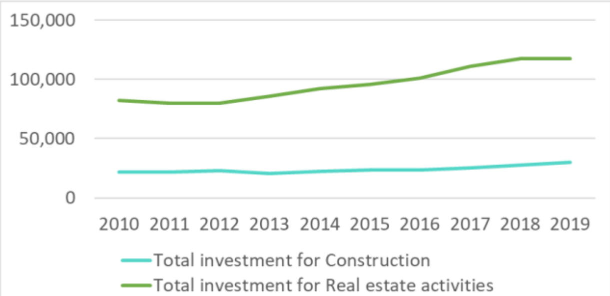
Total **investment by the broad construction sector**[208] has generally been fluctuating over the past years (Figure 10). Investment by the real estate activities sub-sector increased by 42.4% between 2010 and 2019[209], amounting to EUR 117.6 billion in 2019. Investment by the narrow construction sub-sector[210] has been fluctuating over the 2010-2019 period, totalling EUR 30.0 billion in 2019, an increase of 39.6% compared to 2010.

In terms of **investment in intellectual property**, investment by the real estate activities sub-sector increased by 145.4%, from EUR 277.4 million in 2010 to EUR 680.8 million in 2019[211]. Likewise, investment by the narrow construction sub-sector for this category increased by 106.5%, reaching EUR 1.1 billion in 2019[212] compared to EUR 529.2 million in 2010.

In parallel, **investment in machinery,** by the narrow construction sub-sector increased by 314.0%, from EUR 353.2 million in 2010 to EUR 1.5 billion in 2019[213]. In contrast, investment by the real estate activities sub-sector for this category decreased by 34.7%, reaching EUR 252.7 million in 2019 as compared to EUR 387.0 million in 2010.

Investment in machinery by the narrow construction sub-sector between 2010 and 2019 ↑ **314.0%**

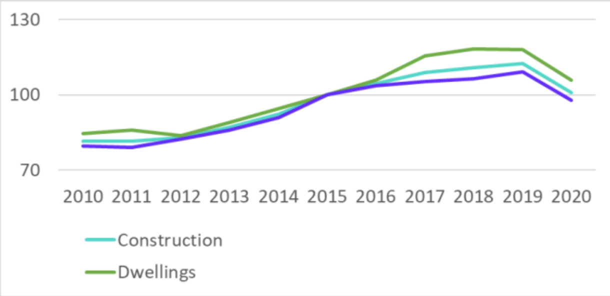
Figure 10: Investments by the UK broad construction industry between 2010 and 2019 (EUR million)




*Source: Eurostat, 2021.*

Total **investment in the broad construction sector**[214] has been experiencing a recovering trend since 2010, reaching a growth rate of 0.8% over the 2010-2020 period (Figure 11). Investment in dwellings by the whole economy increased by 5.9% between 2010 and 2020. In contrast, investment in non-residential construction and civil engineering decreased by 2.2% in 2020 compared to the 2010 level. In absolute terms, investment in dwellings and in non-residential and civil engineering by the whole economy in 2019 amounted to EUR 99.8 billion and EUR 164.0 billion, respectively[215].

Figure 11: Investment index in the UK construction sector between 2010 and 2020 (2010=100)




*Source: AMECO, 2020.*

**The total inland infrastructure[216] investment, as a share of GDP, has increased from 0.7% in 2010 to 0.9% in 2019[217].**

Investment in rail infrastructure increased by 108.2% between 2010 and 2019[218], from EUR 6.4 billion to EUR 13.3 billion. Likewise, investment in rail maintenance increased by 232.7% over the 2010-2019 period. Similarly, the country saw a 48.7% growth in its road infrastructure investment over the 2010-2019 period, from EUR 6.5 billion to EUR 9.6 billion[219]. In contrast, investment in road maintenance decreased considerably by 41.0%, from EUR 3.9 in 2010 billion to EUR 2.3 billion in 2019.

In parallel, total **household renovation spending** stood at EUR 3.4 billion in 2019[220] in absolute terms, and at 0.2% of total household disposable income. Since 2010, renovation spending as a share of household disposable income has remained constant.

The government in its autumn 2018 budget announced extension of the **National Productivity Investment Fund (NPIF)** until 2024 and expanded it to a total of GBP 37.0 billion (EUR 44.2 billion). This fund includes infrastructure investments of over GBP 5.9 billion (EUR 7.0 billion) to improve transport networks and address congestion, GBP 740.0 million (EUR 883.9 million) to support the roll-out of full-fibre connections and future 5G communications, and GBP 5.5 billion (EUR 6.6 billion) to support the construction of new homes[221]. The **Housing Infrastructure Fund (HIF)**, which is part of the NPIF has a budget of GBP 5.5 billion (EUR 6.6 billion), is to fund vital physical infrastructure projects, including the building of roads, bridges, energy networks and other utilities, new schools, healthcare centres and digital infrastructure to accommodate growing communities and alleviate pressure on public services[222].

In 2018, the **National Infrastructure and Construction Pipeline (NICP)**[223] commenced GBP 600.0 billion (EUR 716.6 billion) of public and private investment projects planned across the UK over the next decade. The government also announced its plan to not enter into any new Private Finance Initiative (PFI) contracts for the delivery or maintenance of infrastructure and public services on the grounds that the PFI model is inflexible and too complex[224]. Around GBP 225.0 billion (EUR 269.3 billion) of currently planned investment in the pipeline will be delivered after 2020-2021. It comprises major ongoing investment projects that will be delivered over a number of years, such as Thames Tideway Tunnel, Hinkley Point C and the A14 Cambridge to Huntingdon improvement scheme, as well as investment programmes in electricity generation and rail infrastructure.

Furthermore, 13 projects in the housing and renovation sector (GBP 14.5 billion, i.e. EUR 17.3 billion) and 21 in science and research (GBP 4.9 billion, i.e. EUR 5.9 billion) were also planned by the government. Within the transport sector, GBP 50.3 billion (EUR 60.1 billion) will be specifically invested in the development of the High-Speed Rail, GBP 38.8 billion (EUR 46.3 billion) and other rail projects and GBP 8.2 billion (EUR 9.8 billion) in roads[225]. In the region of 40.0% of the NICP projects will be delivered thanks to government investment, with the rest relying on private investment[226]. Moreover, under its “Roadmap to Recovery” initiative launched in October 2020, the UK government has also announced an accelerated pipeline of 340 projects amounting to GBP 37.0 billion (EUR 44.2 billion) from the National Infrastructure and Construction Pipeline, including investment in transport infrastructure and local growth projects[227].

With regard to transport, the performance of UK’s rail system improved in 2019 after some issues in 2018 due to train operating companies experiencing extensive delays and cancellations. The new ‘Crossrail’ underground link connecting east and west London with its surrounding area, is not expected to become operational before end-2021. Further, after a series of cost increases and contracting problems, the UK government finally gave the go-ahead to the construction of the new

'High Speed 2' rail service in February 2020. However, it is also expected that the cost of the whole project would exceed its current estimate of GBP 88.0 billion (EUR 105.3 billion)[228].

**In November 2021, the UK government announced a GBP 96.0 billion (EUR 114.7 billion) Integrated Rail Plan (IRP) outlining major projects including High Speed 2 (HS2) Phase 2b, Northern Powerhouse Rail and Midlands Rail Hub as well as their delivery schedule across the North and Midlands regions[229,230].**

As per the IRP, the UK government plans to[231,232]:

- build three new high-speed lines including HS2 from Crewe to Manchester; HS2 from the West Midlands to East Midlands Parkway; as well as a new high-speed line between Warrington, Manchester, and Yorkshire, as part of Northern Powerhouse Rail
- electrify and / or upgrade three existing main lines including the TransPennine Main Line between Manchester, Leeds, and York; the Midland Main Line between London St Pancras, the East Midlands, and Sheffield; as well as upgrade the line speeds on the East Coast Main Line.

The UK government also intends to progress options to complete the Midlands Rail Hub and spend GBP 100.0 million (EUR 119.4 million) in taking HS2 trains to Leeds, including assessing the viability of Leeds station together with initiating work on the West Yorkshire mass transit system. Under the IRP, the government plans to deliver significant improvements for the Midlands and South Yorkshire by 2030, and then for Leeds and the Northeast in the 2030s. This is a positive improvement compared to the previous plan under which HS2 dedicated tracks were not likely to reach Leeds until 2041[233,234].

**In its Autumn Budget 2021, the UK government allocated GBP 1.7 billion (EUR 2.0 billion) from the "Levelling Up Fund" into towns and cities across England. The government plans to invest GBP 2.6 billion (EUR 3.1 billion) in road maintenance between 2020 and 2025. The government also intends to increase investment to support 'London-style' transport networks across the country[235].**

Conversely, to facilitate infrastructure financing and delivery, the **UK Guarantees Scheme**, which issues Treasury-backed infrastructure bonds, was extended to at least 2026, to boost investor confidence[236]. The government is also consulting with the construction sector to envisage the option of construction-only guarantees[237]. As part of infrastructure investment, the national government launched a new programme called "**Maritime 2050**" with the aim to invest in ports in order to maintain the country's continued prominence in the global shipping trade[238].

The UK government has put on hold its investment in building new nuclear capacity. Given that almost 50.0% of the UK's current nuclear generating capacity is expected to shut down by 2025, the government has continued with construction on the 3.2-gigawatt electrical (GWe) Hinkley Point project. With respect to the 3.2 GWe Sizewell C project or the 1.0 GWe Bradwell project, the final investment decision is yet to be taken by the government. The UK is committed to delivering up to 40GW of offshore wind capacity by 2030. After the third round of Contracts for Difference auctions in September 2019, the offshore deployment costs for 12 projects have further reduced[239].

In parallel, the UK has also been a notable beneficiary from the European Fund for Strategic Investments (EFSI). As of December 2020, the financing under EFSI amounted to EUR 2.0 billion and is set to trigger additional investments of EUR 20.0 billion. Under the Infrastructure and Innovation Window, 22 projects have already approved, amounting to EUR 1.3 billion and are set to trigger EUR 16.2 billion in total investments. Under the SMEs Window, 18 agreements have been approved, involving a total financing of EUR 674.0 million, and are set to trigger investments of up to EUR 3.9 billion[240].

**With its withdrawal from EU, the UK will not receive any benefit from any new programme under EFSI and other EU led initiatives including the Recovery and Resilience Facility[241].**

## TO 2 – Skills

There has been an uptake in the adoption of **Vocational Education and Training** (VET) in the UK. In 2017 almost 1.3 million new students formally enrolled in the VET programmes, representing an increase of 8.0% compared to 2016. The enrolment rate in upper secondary VET stood at 46.6%, slightly below the EU-28 average of 47.8%. The employment rates of recent VET graduates also increased to 84.2% in 2017, marginally better than 82.0% in 2016 and well above the EU-28 average of 79.5% in 2018[242].

Since 2018, there has been a rise in the investment in the **further education sector**. A funding scheme, the Strategic College Improvement Fund, was also launched in 2018. With an allocation of GBP 15.0 million (EUR 17.9 million), the fund was launched for a period of two years and aimed at financing partnerships between colleges to share best practices and raise working standards[243].

The government is taking actions to increase the transparency and tackle the complexity of technical and professional routes, streamlining the VET system and qualifications, and creating 15 routes across technical education. To fund this, the **Apprenticeship Levy** was introduced in 2017, which replaced all taxpayer funding of apprenticeships for companies of all sizes[244]. It is expected to boost productivity by investing in human capital, develop vocational skills and increase the quantity and quality of apprenticeships[245]. In Scotland, a national apprenticeship network was launched in 2018, targeting former and current apprentices to share their experiences with the objective to inspire others to enrol in apprenticeships. In Wales, a new campaign 'The answer is apprenticeship' was also launched in summer 2018, aimed at youth (including NEETs) and their parents to publicise the benefits of apprenticeships for gaining skills and qualifications necessary to start a career[246].

The skills gap and labour shortage in the UK construction sector constitutes a serious threat to its growth prospects. This is recognised in the **Government Construction Strategy 2016-2020**, aimed at strengthening the skills base in the sector, particularly with regard to digital skills, and support 20,000 apprenticeships until 2020[247]. Similarly, the **Construction 2025 Industrial Strategy** aims to improve the attractiveness of the industry as a whole, by engaging with young people and increasing occupational safety, health and diversity[248]. Several initiatives have been introduced to this end.

The **Construction Industry Training Board (CITB)** supports development of a skilled construction workforce. It provides a comprehensive range of services to companies and their employees. It also plans to extend the Skills and Training Fund to help SMEs with up to 250 employees and continue to invest in small and micro employers by growing the fund to GBP 8.0 million (EUR 9.6 million) reaching 1,900 firms[249]. CITB**'s Grants Scheme** provides funding for CITB-registered employers to train, upskill and qualify their staff. Through its National Construction College, it offers training courses on health and safety, supervision, plant, machinery and other crafts, as well as apprenticeships, awards and accreditation. The CITB also leads the **National Skills Academy for Construction**, a project-based and demand-led training concept, where the client and contractor determine the required skills based on a practical live project[250]. Another CITB-funded project includes the **GO Construct** website, an industry-wide initiative that aims to attract, inform and retain a talented workforce for the construction and built environment sector, by providing information on the opportunities available in the industry[251]. The CITB utilizes GBP 20.8 million (EUR 24.8 million), received under National Retraining Scheme, to train 13,000 workers to make them employable in the construction sector[252].

In order to increase the attractiveness of the construction sector, the UK government launched a new construction skills fund in 2018 with a budget allocation of GBP 22.0 million (EUR 26.3 million). The UK Department for Digital, Culture, Media and Sport also announced a digital skills partnership in 2018, supporting implementation of the UK digital strategy across the country[253].

Additionally, in 2018, the UK government created a new National Retraining Scheme under its Industrial Strategy focused at supporting people in re-skilling including a beginning GBP 64.0 million (EUR 76.4 million) investment for digital and construction training. The government also planned to raise its investment in total research and development (R&D) to 2.4% of GDP by 2027[254].

**As a part of "Roadmap to Recovery" initiative, the Construction Leadership Council (CLC) launched its Talent Retention Scheme (CLC TRS) to act as a portal dedicated to the construction workforce, thereby enabling them to showcase their experience, expertise and skills to companies recruiting staff. The scheme, being non-profit, was initially supported by member organisations, professional institutions, unions, etc. However, following the support from the UK government, the TRS was provided free until April 2021[255].**

Likewise, the CITB (Construction Industry Training Board) also plans to move workers off the Job Retention Scheme and restart the apprentices training programmes. Moreover, online learning tools are already available to support apprentices in continuing their learning programme until workplace training restarts[256].

In parallel, under its Autumn Budget 2021, the UK government has set a research and development spending target of GBP 22.0 billion (EUR 26.3 billion), to be achieved by 2026-2027 – a two-year delay as compared to the initial plan. The country will also increase its spending on skills and training by 42.0%, reaching GBP 3.6 billion (EUR 4.3 billion) in 2022[257].

Other initiatives include **SOAR Build,** a joint venture partnership between the public and private sectors specialising in community renewal. This initiative is aimed at supporting the construction sector though local employment while raising the youth's aspirations to engage in community affairs[258].

In parallel, the **Chartered Institute of Building (CIOB)** attracts younger generation of construction professionals. Its **Craft Your Future** initiative comprises a construction game targeting 12-14 year-olds based on the popular Minecraft Education Platform. The game aims to introduce to its young players the possibilities of a career in construction and impart to them the methods and skills required to become a construction manager, confronting them with issues and challenges commonly faced by the industry[259].

## TO 3 – Resource efficiency / Sustainable construction

**As per the estimates by the Office for Budget Responsibility, it would cost about GBP 250.0 billion (EUR 298.6 billion) in making emissions from the UK's 29.0 million homes net-zero by 2050. However, this figure keeps on increasing as the country continues to construct homes that will require retrofitting when new building regulations become effective from 2026 as part of the "Future Homes Standard"[260].**

To offset additional costs, the UK government is looking for opportunities to deliver homes on vacant, brownfield land and other lands closer to existing houses, thereby permitting synergies with local amenity and infrastructure. Brownfield land remediation entails lower additional costs and the success of the Brownfield Land Release Fund highlights that such initiatives do help in unblocking housing supply of the country[261].

Additionally, as per the "Roadmap to Recovery" initiative, the Green Homes Grant will invest grants worth GBP 2.0 billion (EUR 2.4 billion) to support residential buildings in improving their energy efficiency. The Grant will also finance retrofit projects amounting to GBP 1.0 billion (EUR 1.2 billion) so as to improve the energy efficiency of public sector buildings such as schools and hospitals[262].

In October 2021, the UK government unveiled its "Heat and Buildings Strategy" aimed at incentivizing households and industry players to adapt their operations to minimise greenhouse gas emissions across the life cycle of residential buildings. The plan builds on the broad investment priorities outlined in the "Ten Point Plan" announced in November 2020, wherein the UK highlighted its target of reducing greenhouse gas emissions to net-zero by 2050[263].

Under the Strategy, the UK government has committed GBP 3.9 billion (EUR 4.7 billion) for large scale public building renovations. However, out of this, almost GBP 3.4 billion (EUR 4.1 billion) consists of existing funding from the Public Sector Decarbonisation Scheme, Home Upgrade Grant Scheme, Social Housing Decarbonisation Fund, and Heat Network Transformation Programme. As such, only GBP 450.0 million (EUR 537.5 million) under the Boiler Upgrade Scheme has been allocated as new funding. Moreover, this amount will be used to replace existing gas boiler systems with low-emission systems involving heat pumps[264].

**As per the Boiler Upgrade Scheme, a household can opt for either a GBP 5,000 (EUR 5,972) grant to install an air source heat pump or a GBP 6,000 (EUR 7,166) for a ground-source heat pump. Commencing from April 2022 onwards, the UK government aims to install about 90,000 heat pumps between 2022 and 2025[265].**

Moreover, by 2028, the UK government intends to install at least 600,000 heat pumps annually. The Strategy has no plans for an outright ban on gas boiler installation. Instead, the government has set an ambitious objective that all new heating systems installed in homes would use low-emission technologies by 2035. Furthermore, with the introduction of "Future Homes Standard" from 2025, building regulations and standards will become more stringent for new buildings, requiring them to install low emission heating systems[266].

**As mentioned in its "Heat and Building Strategy", the UK aims to convert all private-rented dwellings to at least Energy Performance Certificate (EPC) band C by 2028 as well as all housing stock to least EPC band C by 2035. Achieving this target will be a big challenge for the UK given that almost 59.7% of dwellings in England in 2019 were below EPC band C as per the Ministry of Housing, Communities & Local Government. To achieve this target, the UK Government has proposed introducing a voluntary disclosure of the energy efficiency performance of homes in mortgage lenders' portfolios. This can also involve declaring voluntary targets for lenders to achieve EPC rating of at least band C in their portfolios by 2030[267].**

In parallel, the UK government has already published a" Future Homes Standard" requiring new homes to have reduced energy consumption and to be fitted with clean heating technologies (e.g. air source heat pumps) rather than fossil fuel heating systems from 2025. The standard is aimed at reducing carbon emissions by up to 80.0% from new homes[268].

Nonetheless, reducing the energy requirement for home heating is quite difficult. The UK is currently facing an ageing housing stock with almost 21.0% of the total stock being over hundred years old while only 17.0% being built after 1990. With most of the housing stock expected to last till 2050 already been built, retrofitting them with cleaner fuel technologies constitute a great challenge for the country[269].

To promote energy efficiency in UK homes, the **Energy Company Obligation (ECO)** programme was launched in January 2013. It requires energy suppliers to deliver carbon and notional bill savings by promoting and installing energy efficiency measures in residential properties. The current fuel poverty-focused scheme, ECO3, was started in December 2018 and is expected to run until March 2022[270, 271]. The target for ECO3 is set in notional bill savings only. The objective is to reduce carbon emissions and improve the ability of low income and vulnerable consumers to heat their homes to comfortable levels. ECO creates a legal obligation on energy suppliers to improve the energy efficiency of households by setting three specific targets[272]:

- the **Carbon Emissions Reduction Obligation (CERO)** focuses on homes requiring more complex interventions, such as solid wall insulation, cavity wall insulation and connections to district heating,
- the **Carbon Saving Community Obligation (CSCO)** focuses on the provision of insulation measures and connections to district heating systems to low-income households including in rural areas,
- the **Home Heating Cost Reduction Obligation (HHCRO)**, also known as Affordable Warmth, provides measures to support low income and vulnerable households to heat their homes. These include installation of a new energy-efficient boiler, loft insulation and cavity wall insulation.

**Under the Autumn Budget 2021, the UK government has allocated GBP 6.1 billion (EUR 7.3 billion) for investment in its Transport Decarbonisation Plan. The country has also allocated GBP 3.9 billion (EUR 4.7 billion) for investment in the decarbonisation of buildings across the UK, with a plan to further invest GBP 1.8 billion (EUR 2.1 billion) into supporting low-income households to make the net-zero transition[273].**

The UK government has announced a GBP 1.8 billion (EUR 2.1 billion) brownfield fund to boost brownfield construction across the country and deliver additional housing stocks. The government has also announced a GBP 11.5 billion (EUR 13.7 billion) investment in the "Affordable Homes Programme" to build up to 180,000 new affordable homes over the 2021-2026 period[274].

In parallel., **BREEAM**, a voluntary certification scheme for environmental assessment and rating system for buildings, is a successful instance of a UK initiative that contributes to the improvement and development of sustainable and energy efficient construction. Schemes, such as BREEAM New Construction, can influence decisions made at the design and procurement stage, ultimately making an impact on the comfort and health and safety of building occupants[275]. BREEAM is developed and managed by the Building Research Establishment (BRE), jointly owned by industry bodies and is being successfully adopted worldwide since its launch in 1990[276].

Lastly, "**A Green Future: Our 25 Year Environment Plan**" announced in 2018, gives the first overarching policy overview of the coherent environmental vision that has been set up by the national government. It includes an action plan on housing and green infrastructure. An important part of the Plan is its promise to put the natural environment 'at the heart' of housing and infrastructure development proposals. Environment Plan alongside the "**Clean Growth Strategy"** and "**Industrial Strategy**" will put pressure on developers, house builders and multi-tenure landlords to upgrade properties to deal with future climate requirements and in this way achieve the new sustainability vision[277].

# TO 4 – Single Market

**Overall, the UK performed adequately with respect to the metrics of the 2020 EU Single Market Scoreboard[278], especially in terms of Transposition of law, EU Pilot and Your Europe[279].**

The UK's conduct improved in various areas including transposition of law, EU pilot response time and Your Europe – EU's single digital gateway aimed at providing access to information, procedures, assistance and problem-solving services. In case of transposition, performance improved across all metrices as compared to last report. With regard to EU Pilot, the UK's average response time complied with the set 70-day time[280]. With regard to internal market information system, the UK complied relatively well with only five indicators recording a performance decline compared to the last report[281].

As per the scoreboard, in terms of infringements, UK's performance was well below the EU-28 average, particularly with pending cases and average case duration being worse than the last report. With regard to public procurement, the UK's performance in 2019 was satisfactory. In terms of trade of goods and services, the UK reported the lowest trade integration in the single market in goods and the third lowest trade integration for services[282].

With the UK leaving the EU Single Market, it is expected that skill shortage will worsen for the construction sector. The restrictions regarding the free movement of labourers from the EU may lead to a further decline in the number of skilled labourers in construction and architectural activities. This would, in turn, result in higher wage cost, thereby raising the overall construction project costs. This is a significant issue for the sector, since about 13.0% of the total construction workforce is foreign-born, mainly coming from Eastern Europe. This issue is particularly felt in London that has 56.3% of the total non-UK construction workforce, followed by Southeast region (22.7%), East of England (17.8%) and Southwest (10.5%). Yorkshire and Humber have the lowest proportion of total non-UK construction workforce at 1.8%[283]. In addition, official surveys tend to underestimate migrant labour on-site, as migrants often prefer not to be in official surveys, for legitimate as well as illegitimate reasons. Anecdotally, house builders state that around 60.0 to 70.0% of employment on-site in construction in London is from abroad[284]. Moreover, projects may be delayed and overrun due to the lack of skilled labour on site, particularly large-scale infrastructure projects[285].

The UK's access to the **EU Digital Single Market (DSM)** has been affected by post-Brexit and there is still a lack of clarity about how specific issues will be impinged according to the European Scrutiny Committee[286]. Moreover, although EU legislation may no longer apply in the UK following the exit, UK construction companies would still be required to comply with key EU construction law, such as the **Construction Products Regulation 2011** governing the marketing of construction products in the EU, in order for them to be able to export to the EU[287].

**In line with the "Roadmap to Recovery" initiative launched in October 2020, public sector firms have started providing supplier relief to contractors who are restarting and increasing site activity, such as consistent approach to delays as set out in PPN 02/20. Further, two sets of contractual best practice guidance have already been issued by CLC (Construction Leadership Council) dealing with resolving contractual issues before they escalate[288].**

Under the "Roadmap to Recovery" initiative, both the construction sector and the UK government are collaborating to develop a 'Construction Playbook'. This involves developing a more consistent approach towards the procurement and management components of government construction projects along with cultivating a more sustainable relationship between Government and the sector[289].

Regarding the implementation of **Eurocodes**, all EN Eurocode parts have been published as National Standards, with National Annexes being published on all Parts except EN 1993-1-6, EN 1993-1-7, EN 1993-3-2, EN 1993-4-1, EN 1993-4-2, EN 1993-4-3, and EN 1998-3. Although they are not compulsory and no regulatory framework enforces their use in public procurement, Eurocodes are the only means of structural design in the UK. No other national standards are used in parallel with them[290].

## TO 5 – International competitiveness

**As per World Bank Doing Business 2020 report, United Kingdom was ranked 33rd out of 190 economies in the ease of trading across border, achieving score of 93.8[291].**

As per the report, in case of exports from UK, it takes only four hours to be documentary compliant while 24 hours to be border compliant. In terms of costs, it costs US 25 (EUR 22) and US 280 (EUR 245) to be documentary and border compliant, respectively[292].

In terms of the **internationalisation of UK construction SMEs**, the export value of all construction-related projects in the UK stood at EUR 1.1 billion in 2019, representing a slight increase of 1.4% as compared to the 2010 level. The UK's share of exports of all construction-related products in 2019 stood at 5.3% of the total production value. This is well below the EU-27 average of 11.3% for the same period.

Exports value of all construction-related products between 2010 and 2019 ↑ **1.4%**

In the context of **inward FATS (Foreign affiliates statistics)[293],** value added at factor cost in the narrow construction sub-sector increased by 40.9% between 2010 and 2017[294]. Similarly, turnover in the narrow construction sub-sector grew by 27.0% during the 2010-2017 period respectively. In similar lines, turnover in the narrow construction sub-sector, in terms of **outward FATS**[295] grew by 27.9% between 2010 and 2017.

Some uncertainties exist about UK's future trading agreements with the EU Single Market. These need to be addressed on a priority basis to enable SMEs to plan and mitigate their exposures and business risks[296].

The **Construction 2025 Industrial Strategy** aims to foster the internationalisation of the UK construction sector through the cooperation between industry and the government. In particular, it seeks to achieve a 50.0% reduction in the trade gap between total exports and total imports for construction products and materials[297]. As part of the Industrial Strategy, funding amounting to GBP 12.5 million (EUR 14.7 million) was made available between 2018 and 2020 for innovative projects aiming to transform the UK construction sector, called **Innovate UK**. The priority was given to projects demonstrating cross-sector collaboration and scalable solutions[298].

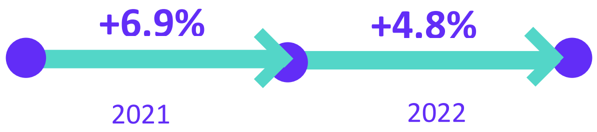
# 8

# Outlook

After registering an annual decline of 9.7% in 2020 due to the COVID-19 pandemic, the UK economy is expected to revive and register growth driven by significant investments in public infrastructure.

As a result, the UK GDP is projected to grow by 6.9% in 2021 and then by 4.8% in 2022, reaching GBP 2.0 trillion (EUR 2.4 trillion) and GBP 2.1 trillion (EUR 2.5 trillion) in 2021 and 2022 respectively.

Expected GDP growth in 2021 and 2022




UK's exit from the EU, along with the ongoing COVID-19 pandemic situation, has adversely impacted the construction sector, resulted in reduced construction activities, increased prices for building materials and lack of availability of skilled labour. Housing prices and rents continue to remain high, especially in areas of high demand. However, the UK government seeks to raise annual housing supply to 300,000 units by the mid-2020s to address this pressing issue[299].

With regards to the **housing market** and **residential sector**, under its "Roadmap to Recovery" initiative, the UK's Green Homes Grant will invest grants worth GBP 2.0 billion (EUR 2.4 billion) to support residential buildings in improving their energy efficiency. The Grant will also finance retrofit projects amounting to GBP 1.0 billion (EUR 1.2 billion) so as to improve the energy efficiency of public sector buildings. Additionally, as per its "Heat and Buildings Strategy" announced in October 2021, the UK aims to convert all private-rented dwellings to at least Energy Performance Certificate (EPC) band C by 2028 as well as all housing stock to least EPC band C by 2035.

The UK government is also looking for opportunities to deliver homes on vacant, brownfield land and other lands closer to existing houses, thereby permitting synergies with local amenity and infrastructure. Under its Autumn Budget 2021, the UK government has also allocated GBP 3.9 billion (EUR 4.7 billion) for investment in the decarbonisation of buildings across the UK, with a plan to further invest GBP 1.8 billion (EUR 2.1 billion) into supporting low-income households to make the net-zero transition

With regards to its **non-residential construction, civil engineering and infrastructure sector**, under its "Roadmap to Recovery" initiative launched in October 2020, the UK government has announced an accelerated pipeline of 340 projects amounting to GBP 37.0 billion (EUR 44.2 billion) from the National Infrastructure and Construction Pipeline, including investment in transport infrastructure and local growth projects. The UK government also plans to invest GBP 2.6 billion (EUR 3.1 billion) under road maintenance between 2020 and 2025. Moreover, in November 2021, the UK government announced a GBP 96.0 billion (EUR 114.7 billion) Integrated Rail Plan (IRP) outlining major projects including High Speed 2 (HS2) Phase 2b, Northern Powerhouse Rail and Midlands Rail Hub across the North and Midlands regions. Under the IRP, the government plans to delivery significant improvements for the Midlands and South Yorkshire by 2030, in addition for Leeds and the Northeast in the 2030s. This is a positive improvement as compared to the previous plan under which HS2 dedicated tracks were not likely to reach Leeds until 2041.

**Overall, the UK construction sector is expected to recover from 2021 onwards, driven by large scale investments in energy efficiency, residential, public infrastructure and circular economy projects. Output in civil engineering will be the leading investment driver for the economy.**

# References

1 Data available till 2018.

2 How will the Autumn Budget impact the construction industry?, October 2021, https://www.pbctoday.co.uk/news/planning-construction-news/construction-autumn-budget-2021/101101/

3 Please note that this 2018 data is a nowcast - please refer to the methodology notes for further details.

4 Data available till 2018.

5 Please note that the share of each sub-sector in the value added of the broad construction sector should not be compared to the shares of the Gross Value Added in the GDP, since the GDP also includes taxes and excludes subsidies.

6 Please note that this 2018 data is a nowcast - please refer to the methodology notes for further details.

7 Data available till 2018.

8 Please note that the share of each sub-sector in the value added of the broad construction sector should not be compared to the shares of the Gross Value Added in the GDP, since the GDP also includes taxes and excludes subsidies.

9 Please note that data is not available for the manufacturing and architectural and engineering activities.

10 A regional breakdown is no longer available for the UK in Eurostat [nama_10r_3gva]. Alternative data has been identified through the UK ONS for the Regional gross value added (balanced) by industry: all ITL regions.
See https://www.ons.gov.uk/economy/grossvalueaddedgva/datasets/nominalandrealregionalgrossvalueaddedbalancedbyindustry. Values are displayed in EUR million, converted from GBP using the exchange rate on the date downloaded, 02/11/2021.
See https://www.ecb.europa.eu/stats/policy_and_exchange_rates/euro_reference_exchange_rates/html/eurofxref-graph-gbp.en.html

11 Apparent labour productivity refers to the gross value added per person employed.

12 No data available for subsequent years for the productivity in the broad construction sector.

13 European Commission, Country Report United Kingdom 2020.
https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52020SC0527&from=EN

14 Sharecast news: UK construction downturn eases slightly but COVID-19 still weighs heavily. https://www.sharecast.com/news/news-and-announcements--/uk-construction-downturn-eases-slightly-but-covid-19-still-weighs-heavily--7530930.html
https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52020SC0527&from=EN

15 Infrastructure intelligence news: COVID-19 sees 35% drop in UK construction productivity. http://www.infrastructure-intelligence.com/article/jun-2020/covid-19-sees-35-drop-uk-construction-productivity-according-new-research
https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52020SC0527&from=EN

16 The gross operating rate is the ratio of Gross Operating Surplus to Turnover and is an indicator of profitability.

17 No data available for subsequent years.

18 Department for Business, energy & Industrial Strategy, Monthly Statistics of Building Materials and Components, May 2020.
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/888938/20-cs6_-_Construction_Building_Materials_-_Bulletin_May_2020.pdf

19 Data available until 2018.

20 Office for National Statistics, Migrant labour force within the UK's construction industry: August 2018,
https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/internationalmigration/articles/migrantlabourforcewithintheconstructionindustry/august2018

21 Data unavailable for 2020

22 Data unavailable for other sub-sectors.

23 Data unavailable for 2020.

24 UK inflation rises to highest level in almost 30 years at 5.4%, January 2022, https://www.theguardian.com/business/2022/jan/19/uk-inflation-hits-near-three-decade-high-rising-to-54#:~:text=Bailey%20said%20energy%20prices%20had,of%20November's%205.1%25%20inflation%20rate

25 Data unavailable for 2020.

26 Office of National Statistics, National population projections: 2020-based interim
https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationprojections/bulletins/nationalpopulationprojections/2020basedinterim/previous/v1#births-deaths-and-migration

27 Data unavailable for 2020.

28 Office for National Statistics, Unemployment rate (aged 16 and over, seasonally adjusted)
https://www.ons.gov.uk/employmentandlabourmarket/peoplenotinwork/unemployment/timeseries/mgsx/lms

29 World Bank Group, Doing Business 2020, Economy Profile for United Kingdom
https://www.doingbusiness.org/content/dam/doingBusiness/country/u/united-kingdom/GBR.pdf

30 As the publication of the WB Doing Business report 2021 was not available at the time of the writing, this report relies on the data provided by the 2020 edition

31 World Bank Group, Doing Business 2020, Economy Profile for United Kingdom
https://www.doingbusiness.org/content/dam/doingBusiness/country/u/united-kingdom/GBR.pdf

32 Global Entrepreneurship Monitor, Entrepreneurial Behaviour and Attitudes, 2020, https://www.gemconsortium.org/data/key-aps#\

33 European Commission, 2019 SBA Fact Sheet UK.
https://ec.europa.eu/growth/smes/business-friendly-environment/performance-review_en

34 Ibidem.

35 Gov.uk, Government launches new fund to support small business growth, June 2018, https://www.gov.uk/government/news/government-launches-new-fund-to-support-small-business-growth

36 European Commission, 2019 SBA Fact Sheet UK. https://ec.europa.eu/growth/smes/business-friendly-environment/performance-review_en

37 World Bank Group, Doing Business 2020, Economy Profile for United Kingdom https://www.doingbusiness.org/content/dam/doingBusiness/country/u/united-kingdom/GBR.pdf

38 Gov.UK, Extra £200 million backing for British business, April 2019, https://www.gov.uk/government/news/extra-200-million-backing-for-british-business

39 European Commission, Country Report United Kingdom 2020. https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52020SC0527&from=EN

40 No data available for subsequent years.

41 No data available for subsequent years.

42 Data for manufacturing subsector is not available.

43 No data available for subsequent years.

44 No data available for subsequent years.

45 Ibidem.

46 No data available for subsequent years.

47 Ibidem.

48 According to Eurostat, construction services comprises Construction Abroad (code 250) and Construction in the Compiling Economy (code 251). They do not include architectural services, or engineering services.

49 No data available for subsequent years.

50 European Commission, Data and surveys- SAFE, Results 2021, Results by country https://ec.europa.eu/growth/access-finance-smes/data-and-surveys-safe_en

51 Ibidem.

52 Ibidem.

53 EIBIS 2021 - UK overview 2021. https://www.eib.org/attachments/publications/eibis_2021_uk_en.pdf

54 As the EU-27 average data was not available, the EU-28 average was used for comparative purposes.

55 EIBIS 2021 - UK overview 2021. https://www.eib.org/attachments/publications/eibis_2021_uk_en.pdf

56 European Commission, Country Report United Kingdom 2017. February 2017. https://ec.europa.eu/info/sites/info/files/2017-european-semester-country-report-united-kingdom-en.pdf

57 European Commission, 2019 SBA Fact Sheet UK. https://ec.europa.eu/growth/smes/business-friendly-environment/performance-review_en

58 Ibidem.

59 Ibidem.

60 Ibidem.

61 See more information at https://www.forbes.com/sites/francescoppola/2018/01/30/how-carillion-used-a-u-k-government-scheme-to-rip-off-its-suppliers/#2567eedd52dc

62 Infrastructure and Projects Authority, Government Construction Strategy 2016-2020. March 2016. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/510354/Government_Construction_Strategy_2016-20.pdf

63 Gov.UK, UK House Price Index annual review 2018, February 2019, https://www.gov.uk/government/news/uk-house-price-index-uk-hpi-annual-review-2018

64 British Business Bank, Bounce Back Loan Scheme (BBLS) https://www.british-business-bank.co.uk/ourpartners/coronavirus-business-interruption-loan-schemes/bounce-back-loans/

65 British Business Bank, Coronavirus Business Interruption Loan Scheme (CLBILS) https://www.british-business-bank.co.uk/ourpartners/coronavirus-business-interruption-loan-scheme-cbils-2/

66 British Business Bank, Coronavirus Large Business Interruption Loan Scheme (CLBILS) https://www.british-business-bank.co.uk/ourpartners/coronavirus-business-interruption-loan-schemes/clbils/

67 Bank of England, Covid Corporate Financing Facility https://www.bankofengland.co.uk/markets/covid-corporate-financing-facility#:~:text=On%2017%20March%202020%2C%20HM,measures%20designed%20to%20support%20companies.&text=The%20facility%20was%20designed%20to,of%20commercial%20paper%20(CP).

68 Construction News, Construction industry COVID support claims hit GBP 22.0 billion, February 2021 https://www.constructionnews.co.uk/financial/construction-industry-covid-support-claims-hit-22bn-17-02-2021/

69 British Business Bank, Recovery Loan Scheme https://www.british-business-bank.co.uk/ourpartners/recovery-loan-scheme/

70 S&P Global Market Intelligence, SME lending soars, says BoE, even as UK doubles down with new borrowing scheme, March 2021 https://www.spglobal.com/marketintelligence/en/news-insights/latest-news-headlines/sme-lending-soars-says-boe-even-as-uk-doubles-down-with-new-borrowing-scheme-63081354

71 No data available for subsequent years.

72 The Money Charity, The Money Statistics December 2021. https://themoneycharity.org.uk/money-statistics/

73 Department for Communities and Local Government, House building: new build dwellings statistics. Table 244. https://www.gov.uk/government/statistical-data-sets/live-tables-on-house-building

74 Ibidem.

75 BBC, England needs millions of homes to solve housing crisis, January 2019. https://www.bbc.com/news/uk-england-46788530

76 Independent.co.uk, UK facing its biggest housing shortfall on record with backlog of 4m homes, research shows, May 2018, https://www.independent.co.uk/news/uk/home-news/housing-homeless-crisis-homes-a8356646.html

77 BBC, England 'needs millions of homes to solve housing crisis', January 2019. https://www.bbc.com/news/uk-england-46788530

78 GOV.UK, Home building stats show continued increase in starts and completions despite pandemic, July 2021 https://www.gov.uk/government/news/home-building-stats-show-continued-increase-in-starts-and-completions-despite-pandemic

79 Office for National Statistics, UK House price Index: December 2020 https://www.ons.gov.uk/economy/inflationandpriceindices/bulletins/housepriceindex/december2020#:~:text=The%20average%20UK%20house%20price,same%20period%20a%20year%20ago.

80 Office for National Statistics, UK House price Index: November 2021 https://www.ons.gov.uk/economy/inflationandpriceindices/bulletins/housepriceindex/november

81 No data available for subsequent years.

82 The housing cost overburden rate is the percentage of the population living in households where the total housing costs represent more than 40 % of disposable income.

83 Data unavailable for subsequent years.

84 Eurostat, Housing cost overburden rate by age, sex and poverty status - SILC survey. https://ec.europa.eu/eurostat/databrowser/view/tessi160/default/table?lang=en

85 The overcrowding rate is defined as the percentage of the population living in an overcrowded household.

86 Data unavailable for subsequent years.

87 Eurostat, Overcrowding rate. https://ec.europa.eu/eurostat/databrowser/view/tessi170/default/table?lang=en

88 Eurostat, Severe housing deprivation rate is defined as the percentage of population living in the dwelling which is considered as overcrowded, while also exhibiting at least one of the housing deprivation measures. Housing deprivation is a measure of poor amenities and is calculated by referring to those households with a leaking roof, no bath/shower and no indoor toilet, or a dwelling considered too dark.

89 Data unavailable for subsequent years.

90 Eurostat, Severe housing deprivation rate by age, sex and poverty status - EU-SILC survey. http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=ilc_mdho06a&lang=en

91 World Economic Forum, Global Competitiveness Report 2019. http://www3.weforum.org/docs/WEF_TheGlobalCompetitivenessReport2019.pdf

92 See more information at : https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=SWD:2020:527:FIN&rid=4

93 European Commission, Country Report United Kingdom 2020. https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52020SC0527&from=EN

94 Gov.uk, multi billion-pound road and rail investment to put nation on path to recovery, May 2020 https://www.gov.uk/government/news/multi-billion-pound-road-and-railway-investment-to-put-nation-on-path-to-recovery

95 Infrastructure and Projects Authority, Analysis of the National Infrastructure and Construction Pipeline 2021, August 2021 https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1016759/Analysis_of_the_National_Infrastructure_and_Construction_Pipeline_2021.pdf

96 GOV.UK, Build Back Better: out plan for growth, March 2021 https://www.gov.uk/government/publications/build-back-better-our-plan-for-growth/build-back-better-our-plan-for-growth-html#infrastructure

97 Data unavailable for subsequent years.

98 Company Insolvency Statistics, Industry Tables, Q3 2021, https://www.gov.uk/government/statistics/company-insolvency-statistics-july-to-september-2021

99 Atradius Market Monitor Construction UK 2020. https://group.atradius.com/publications/market-monitor-construction-uk-2020.html

100 European Commission, Data and surveys – SAFE, Results by country, 2021. https://ec.europa.eu/growth/access-finance-smes/data-and-surveys-safe_en

101 Ibidem.

102 Ibidem.

103 Ibidem.

104 Atradius Payments Practices Barometer, United Kingdom: growth outlook despite increasing risks, November 2021 https://group.atradius.com/publications/payment-practices-barometer/united-kingdom-2021-growth-outlook-despite-increasing-risks.html

105 Ibidem.

106 Ibidem.

107 Ibidem.

108 Ibidem.

109 FEBIS, CRIBIS D&B Payment Study 2021. https://www.febis.org/2021/06/17/payment-study-2021/

110 Ibidem.

111 Intrum, European Payment Report 2021. https://www.intrum.com/publications/european-payment-report/european-payment-report-2021/

112 As the EU-27 average data was not available, the EU-28 average was used for comparative purposes.

113 Ibidem.

114 Intrum, European Payment Report 2021. https://www.intrum.com/publications/european-payment-report/european-payment-report-2021/

115 Ibidem.

116 As the EU-27 average data was not available, the EU-28 average was used for comparative purposes.

117 Intrum, European Payment Report 2021. https://www.intrum.com/publications/european-payment-report/european-payment-report-2021/

118 Intrum: European Payment Report 2021, https://www.intrum.com/publications/european-payment-report/european-payment-report-2021/

119 As the EU-27 average data was not available, the EU-28 average was used for comparative purposes.

120 Ibidem.

121 Intrum: European Payment Report 2021, https://www.intrum.com/publications/european-payment-report/european-payment-report-2021/

122 Atradius Payments Practices Barometer, United Kingdom: growth outlook despite increasing risks, November 2021 https://group.atradius.com/publications/payment-practices-barometer/united-kingdom-2021-growth-outlook-despite-increasing-risks.html

123 European Commission, Survey on the access to finance for SMEs, Results by country 2021. https://ec.europa.eu/growth/access-finance-smes/data-and-surveys-safe_en

124 Ibidem.

125 World Bank Group, Doing Business 2020, United Kingdom. https://www.doingbusiness.org/content/dam/doingBusiness/country/u/united-kingdom/GBR.pdf

126 The warehouse in this example is defined as a structure for general storage activities, with two stories, above ground and with total constructed area of approx. 1,300 square meters. The ground, on which the warehouse is built is owned by the company that will use it and valued at 50 times income per capita. There are architectural and technical plans prepared for the warehouse, which are also taken into account and counted as procedures if their preparation requires obtaining further documentation or getting prior approvals from eternal agencies. Finally, in this example the warehouse takes 30 weeks to construct, excl. all delays due to administrative and regulatory requirements.

127 Construction Europe - Tackling the UK construction skills shortage. January 2020. https://www.khl.com/construction-europe/tackling-the-uk-construction-skills-shortage/142170.article

128 Ibidem.

129 Construction Global, Skills shortage in the UK constructions industry. March 2018. https://www.constructionglobal.com/mission-critical/skills-shortage-uk-construction-industry

130 Faithful & Gould, Skills Shortage in Construction. April 2016. https://www.fgould.com/uk-europe/articles/skills-shortage-construction/

131 CITB, Construction Skills Network Forecasts 2016-2020. http://www.citb.co.uk/documents/research/csn%202016-2020/csn_national_2016.pdf

132 CITB, http://www.citb.co.uk/research/construction-skills-network/uk/

133 Atradius Market Monitor Construction UK 2020. https://group.atradius.com/publications/market-monitor-construction-uk-2020.html

134 No data available for sequent years.

135 Eurostat: Generation of waste by waste category, hazardousness and NACE Rev. 2 activity, January 2022, https://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=env_wasgen&lang=en

136 Eurostat: Generation of waste by waste category, hazardousness and NACE Rev. 2 activity, January 2022, https://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=env_wasgen&lang=en

137 UK_Statistics_on_Waste_statistical_notice_March_2020_accessible, https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/874265/UK_Statistics_on_Waste_statistical_notice_March_2020_accessible_FINAL_rev_v0.5.pdf

138 Guidelines for measuring and reporting construction, demolition and excavation waste. Waste & Resources Action Programme August (WRAP), August 2010.

139 Zero Waste Design Guidelines, C&D Activities and Waste Stream, http://www.zerowastedesign.org/02-building-design/e-construction-and-demolition-waste-context/

140 No data available for sequent years.

141 UK_Energy_in_Brief_2019, https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/857027/UK_Energy_in_Brief_2019.pdf

142 Fitch Solutions: United Kingdom Infrastructure Report, Q1 2022, https://store.fitchsolutions.com/all-products/united-kingdom-infrastructure-report

143 European Commission, European Innovation Scoreboard 2021, https://ec.europa.eu/docsroom/documents/45941

144 European Commission, European Innovation Scoreboard 2021, https://ec.europa.eu/docsroom/documents/45941

145 European Commission, European Innovation Scoreboard 2021, https://ec.europa.eu/docsroom/documents/45941

146 No data available for sequent years.

147 No data available for sequent years.

148 A full-time equivalent (FTE) is a unit to measure employed persons in a way that makes them comparable, although they may work a different number of hours per week. The unit is obtained by comparing an employee's average number of hours worked to the average number of hours of a full-time worker. A full-time person is therefore counted as one FTE, while a part-time worker gets a score in proportion to the hours worked.

149 No data available for subsequent years.

150 No data available for subsequent years.

151 £18m funding to transform construction industry through digital technology, January 2019. https://www.ukri.org/news/construction-industry-to-be-transformed-through-digital-technology-thanks-to-18-million-ukri-funding/

152 Construction Innovation Hub, https://constructioninnovationhub.org.uk/about/the-vision/

153 Ibidem.

154 Ibidem.

155 European Commission, Country Report United Kingdom 2020. https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52020SC0527&from=EN

156 Construction sector one of lowest in UK to reap R&D benefits, May 2020. https://www.pbctoday.co.uk/news/planning-construction-news/construction-companies-rd/76082/

157 Digital Economy and Society Index 2020 UK. https://ec.europa.eu/newsroom/dae/document.cfm?doc_id=66933

158 Ibidem.

159 The EIB Investment Survey for United Kingdom is available till 2020.

160 EIB Investment Survey, United Kingdom 2020, https://www.eib.org/attachments/efs/eibis_2020_united_kingdom_en.pdf

161 CIOB, RIBA, CIOB and RICS launch Quality Tracker tool. https://www.ciob.org/media-centre/news/riba-ciob-and-rics-launch-quality-tracker-tool

162 Geospatial world, BIM adoption and implementation around the world: Initiatives by major nations, 2017. https://www.geospatialworld.net/blogs/bim-adoption-around-the-world/

163 HM Treasury, Autumn Statement 2016. November 2016. https://www.gov.uk/government/publications/autumn-statement-2016-documents/autumn-statement-2016

164 Europe 2020: UK National Reform Programme 2020. April 2019. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/796965/UK_NRP_2019_web.pdf

165 See more information at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/731871/construction-sector-deal-print-single.pdf

166 The Construction Innovation Hub, https://www.cdbb.cam.ac.uk/what-we-do/construction-innovation-hub

167 Construction sector recovery needs a transformed delivery approach to assure safety and quality, May 2020, https://www.cdbb.cam.ac.uk/news/press-release-construction-sector-recovery-needs-transformed-delivery-approach-assure-safety

168 Roadmap to Recovery: An Industry Recovery Plan for the UK Construction Sector, https://www.constructionleadershipcouncil.co.uk/wp-content/uploads/2020/10/R2R-Status-Report-v5.0-FINAL.pdf

169 Infrastructure and Projects Authority, Government Construction Strategy: 2016-2020. March 2016. https://www.gov.uk/government/publications/government-construction-strategy-2016-2020

170 Infrastructure and Projects Authority, Government Construction Strategy: 2016-2020. March 2016. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/510354/Government_Construction_Strategy_2016-20.pdf

171 The UK Shared Prosperity Fund, May 2019. https://researchbriefings.parliament.uk/ResearchBriefing/Summary/CBP-8527#fullreport

172 The UK Shared Prosperity Fund, May 2019. https://researchbriefings.parliament.uk/ResearchBriefing/Summary/CBP-8527#fullreport

173 European Commission, UK National Reform Programme 2016. March 2016. http://ec.europa.eu/europe2020/pdf/csr2016/nrp2016_uk_en.pdf

174 HM Treasury, Europe 2020: UK National Reform Programme 2019, April 2019. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/796965/UK_NRP_2019_web.pdf

175 Financial Times, UK's housing shortage targeted with £3.7bn for new homes. November 2016. https://www.ft.com/content/089f8448-b192-11e6-a37c-f4a01f1b0fa1

176 The Guardian, Housing gets £4bn boost to increase number of new homes. November 2016. https://www.theguardian.com/society/2016/nov/24/housing-gets-4bn-boost-to-increase-number-of-new-homes

177 European Commission, Country Report 2019. February 2019. https://ec.europa.eu/info/sites/info/files/file_import/2019-european-semester-country-report-united-kingdom_en.pdf

178 HM Treasury, Europe 2020: UK National Reform Programme 2019, April 2019. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/796965/UK_NRP_2019_web.pdf

179 Help To Buy, Shared Ownership. https://www.helptobuy.gov.uk/shared-ownership/

180 See more information at https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/752202/Budget_2018_red_web.pdf

181 Roadmap to Recovery: An Industry Recovery Plan for the UK Construction Sector, https://www.constructionleadershipcouncil.co.uk/wp-content/uploads/2020/10/R2R-Status-Report-v5.0-FINAL.pdf

182 Gov.uk, Prime Minister launches new planning rules to get England delivering homes for everyone, March 2018, https://www.gov.uk/government/news/prime-minister-launches-new-planning-rules-to-get-england-delivering-homes-for-everyone

183 Europe 2020: National Reform Programme 2020, April 2020. https://ec.europa.eu/info/sites/info/files/2020-european-semester-national-reform-programme-uk_en.pdf

184 Europe 2020: National Reform Programme 2020, April 2020. https://ec.europa.eu/info/sites/info/files/2020-european-semester-national-reform-programme-uk_en.pdf

185 Planning for the Future, March 2020, https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/872091/Planning_for_the_Future.pdf

186 Ibidem.

187 Europe 2020: National Reform Programme 2020, April 2020. https://ec.europa.eu/info/sites/info/files/2020-european-semester-national-reform-programme-uk_en.pdf
188 Coronavirus: A ban on evictions and help for rough sleepers, July 14, 2020. https://commonslibrary.parliament.uk/research-briefings/cbp-8867/
189 Autumn Budget 2021: Real Estate & Construction Sector, https://mooreks.co.uk/insights/autumn-budget-2021-real-estate-construction-sector/
190 Autumn Budget 2021: Real Estate & Construction Sector, https://mooreks.co.uk/insights/autumn-budget-2021-real-estate-construction-sector/
191 Fitch Solutions: United Kingdom Infrastructure Report, Q1 2022, https://store.fitchsolutions.com/all-products/united-kingdom-infrastructure-report
192 The Building Regulations 2010, http://www.legislation.gov.uk/uksi/2010/2214/pdfs/uksi_20102214_en.pdf
193 Planning Portal, Approved Documents. https://www.planningportal.co.uk/info/200135/approved_documents
194 Independent, Grenfell Tower fire report finds UK building regulations 'not fit for purpose', December 2017, http://www.independent.co.uk/news/uk/home-news/grenfell-tower-report-uk-building-regulations-fire-safety-sprinklers-escape-deaths-a8116431.html
195 Health and Safety Executive, The Construction (Design and Management) Regulations 2015. http://www.hse.gov.uk/construction/cdm/2015/index.htm
196 DLA Piper, Health and safety. http://www.dlapiperrealworld.com/law/index.html?t=construction&s=legal-framework&q=health-and-safety&c=GB-ENG-WLS
197 European Commission, Country Report United Kingdom 2020. https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52020SC0527&from=EN
198 Planning for the Future, March 2020, https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/872091/Planning_for_the_Future.pdf
199 Gov.UK. https://www.gov.uk/employers-liability-insurance
200 DLA Piper, Insurances. http://www.dlapiperrealworld.com/law/index.html?t=construction&s=forms-of-contract-procurement-methods&q=insurances&c=GB-ENG-WLS
201 DLA Piper, Insurances. http://www.dlapiperrealworld.com/law/index.html?t=construction&s=forms-of-contract-procurement-methods&q=insurances&c=GB-ENG-WLS
202 DLA Piper, Limitation period. http://www.dlapiperrealworld.com/law/index.html?t=construction&s=liability&q=limitation-period&c=GB-ENG-WLS
203 Designing Buildings Ltd, Contractors' all-risk insurance, February 2018, https://www.designingbuildings.co.uk/wiki/Contractors%27_all-risk_insurance
204 Designing Buildings Ltd, Insurance for building design and construction, February 2018, https://www.designingbuildings.co.uk/wiki/Insurance_for_building_design_and_construction
205 The Integrated Project Insurance (IPI) Model - Project Procurement and Delivery Guidance. Cabinet Office, July 2014. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/326716/20140702_IPI_Guidance_3_July_2014.pdf
206 Designing Buildings, Insurance for building design and construction, July 2018. https://www.designingbuildings.co.uk/wiki/Insurance_for_building_design_and_construction#Public_liability_insurance
207 COVID-19 recovery plan for the UK construction sector, June 2020, https://www.fieldfisher.com/en/insights/covid-19-recovery-plan-for-the-uk-construction-sec
208 This includes total investment by the construction and real estate sub-sectors, defined as gross fixed capital formation, i.e. acquisitions minus disposal, of total fixed assets (e.g. machinery and equipment, vehicles, dwellings and other buildings).
209 No data available for subsequent years.
210 Investment by the narrow construction sub-sector includes investment in machinery and intellectual property.
211 No data available for subsequent years.
212 Data unavailable for subsequent years.
213 Data unavailable for subsequent years.
214 This includes total investment (i.e. gross fixed capital formation) in dwellings and non-residential construction and civil engineering by investors in the general economy (e.g. industry, financial and non-financial services, households, agricultural sector, etc.).
215 The indicator gross fixed capital formation in non-residential and civil engineering refers to the Eurostat indicator «Other buildings and structures»
216 According to the OECD, inland infrastructure includes road, rail, inland waterways, maritime ports and airports and takes account of all sources of financing. For more information, please visit the following link: https://ec.europa.eu/eurostat/statistics-explained/index.php/Inland_transport_infrastructure_at_regional_level
217 No data available for subsequent years.
218 No data available for subsequent years.
219 OECD data, Infrastructure investment. https://data.oecd.org/transport/infrastructure-investment.htm#indicator-chart
220 No data available for subsequent years.
221 HM Treasury, Europe 2020: UK National Reform Programme 2019, April 2019. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/796965/UK_NRP_2019_web.pdf
222 Gov.uk, Europe 2020: UK National Reform Programme 2019, April 2019, https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/796965/UK_NRP_2019_web.pdf
223 Infrastructure and Projects Authority, UK infrastructure investment to reach record high. December 2016.

https://www.gov.uk/government/news/uk-infrastructure-investment-to-reach-record-high

224 UK Government, Europe 2020: UK National Reform Programme 2019, April 2019, https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/796965/UK_NRP_2019_web.pdf

225 National Infrastructure and Construction Pipeline 2018. November 2018. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/759026/National_Infrastructure_and_Construction_Pipeline_Autumn_2018.xlsx

226 Infrastructure and Projects Authority, National Infrastructure Delivery Plan Funding and Finance Supplement. December 2016. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/574282/National_Infrastructure_Delivery_Plan_Funding_and_Finance_Supplement.pdf

227 Roadmap to Recovery: An Industry Recovery Plan for the UK Construction Sector, https://www.constructionleadershipcouncil.co.uk/wp-content/uploads/2020/10/R2R-Status-Report-v5.0-FINAL.pdf

228 European Commission, Country Report United Kingdom 2020. https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52020SC0527&from=EN

229 Integrated Rail Plan for the North and Midlands, November 2021, https://www.gov.uk/government/publications/integrated-rail-plan-for-the-north-and-the-midlands

230 Integrated Rail Plan: biggest ever public investment in Britain's rail network will deliver faster, more frequent and more reliable journeys across North and Midlands, November 2021, https://dft-newsroom.prgloo.com/news/integrated-rail-plan-biggest-ever-public-investment-in-britains-rail-network-will-deliver-faster-more-frequent-and-more-reliable-journeys-across-north-and-midlands

231 Integrated Rail Plan for the North and Midlands, November 2021, https://www.gov.uk/government/publications/integrated-rail-plan-for-the-north-and-the-midlands

232 Integrated Rail Plan: biggest ever public investment in Britain's rail network will deliver faster, more frequent and more reliable journeys across North and Midlands, November 2021, https://dft-newsroom.prgloo.com/news/integrated-rail-plan-biggest-ever-public-investment-in-britains-rail-network-will-deliver-faster-more-frequent-and-more-reliable-journeys-across-north-and-midlands

233 Integrated Rail Plan for the North and Midlands, November 2021, https://www.gov.uk/government/publications/integrated-rail-plan-for-the-north-and-the-midlands

234 Integrated Rail Plan: biggest ever public investment in Britain's rail network will deliver faster, more frequent and more reliable journeys across North and Midlands, November 2021, https://dft-newsroom.prgloo.com/news/integrated-rail-plan-biggest-ever-public-investment-in-britains-rail-network-will-deliver-faster-more-frequent-and-more-reliable-journeys-across-north-and-midlands

235 How will the Autumn Budget impact the construction industry?, October 2021, https://www.pbctoday.co.uk/news/planning-construction-news/construction-autumn-budget-2021/101101/

236 Gov.UK. https://www.gov.uk/guidance/uk-guarantees-scheme#project-update

237 Ibidem.

238 Webuildvalue, UK: investing in ports to relaunch development, May 2018. https://www.webuildvalue.com/en/infrastructures/uk-investing-in-ports-to-relaunch-development.html

239 European Commission, Country Report United Kingdom 2020. https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52020SC0527&from=EN

240 Investment Plan- UK. https://ec.europa.eu/commission/strategy/priorities-2019-2024/jobs-growth-and-investment/investment-plan-europe/investment-plan-results/investment-plan-uk_en

241 Investment Plan Results. https://ec.europa.eu/commission/strategy/priorities-2019-2024/jobs-growth-and-investment/investment-plan-europe/investment-plan-results_en

242 European Commission, Education and Training Monitor 2019, United Kingdom. https://ec.europa.eu/education/sites/education/files/document-library-docs/et-monitor-report-2019-united-kingdom_en.pdf

243 European Commission, Education and Training Monitor 2019, United Kingdom. https://ec.europa.eu/education/sites/education/files/document-library-docs/et-monitor-report-2019-united-kingdom_en.pdf

244 CITB, Apprenticeship levy and construction businesses. http://www.citb.co.uk/levy-grant/apprenticeships-levy/#1

245 Global construction, Skills shortage in the UK construction industry, March 2018. https://www.constructionglobal.com/mission-critical/skills-shortage-uk-construction-industry

246 European Commission, Education and Training Monitor 2019, United Kingdom. https://ec.europa.eu/education/sites/education/files/document-library-docs/et-monitor-report-2019-united-kingdom_en.pdf

247 Infrastructure and Projects Authority, Government Construction Strategy: 2016-2020. March 2016. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/510354/Government_Construction_Strategy_2016-20.pdf

248 UK Government, Construction 2025 Industrial Strategy. http://www.construction-for-youth.eu/en/initiatives/uk---the-industrial-strategy-for-construction.aspx

249 CITB, Business plan 2019 – 2020. https://www.citb.co.uk/documents/businessplan/citb-business-plan-2019-uk.pdf

250 National Skills Academy for Construction, http://www.cskills.org/nsacademy/

251 Go Construct, https://www.goconstruct.org/

252 Gov.UK, Department for Business, Energy and Industrial Strategy, July 2019. https://www.gov.uk/government/publications/construction-sector-deal/construction-sector-deal-one-year-on

253 European Commission, Education and Training Monitor 2019, United Kingdom. https://ec.europa.eu/education/sites/education/files/document-library-docs/et-monitor-report-2019-united-kingdom_en.pdf

254 Industrial Strategy: Construction Sector Deal, 2018, https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/731871/construction-sector-deal-print-single.pdf

255 Roadmap to Recovery: An Industry Recovery Plan for the UK Construction Sector, https://www.constructionleadershipcouncil.co.uk/wp-content/uploads/2020/10/R2R-Status-Report-v5.0-FINAL.pdf

256 Roadmap to Recovery: An Industry Recovery Plan for the UK Construction Sector, https://www.constructionleadershipcouncil.co.uk/wp-content/uploads/2020/10/R2R-Status-Report-v5.0-FINAL.pdf

257 How will the Autumn Budget impact the construction industry?, October 2021, https://www.pbctoday.co.uk/news/planning-construction-news/construction-autumn-budget-2021/101101/

258 FIEC, Soar Build, http://www.construction-for-youth.eu/en/initiatives/uk---soar-build.aspx.

259 Chartered Institute of Building, About Craft your Future. http://ciobmc.org/about.html

260 How will the Autumn Budget impact the construction industry?, https://www.pbctoday.co.uk/news/planning-construction-news/construction-autumn-budget-2021/101101/

261 How will the Autumn Budget impact the construction industry?, https://www.pbctoday.co.uk/news/planning-construction-news/construction-autumn-budget-2021/101101/

262 Roadmap to Recovery: An Industry Recovery Plan for the UK Construction Sector , https://www.constructionleadershipcouncil.co.uk/wp-content/uploads/2020/10/R2R-Status-Report-v5.0-FINAL.pdf

263 Fitch Solutions: United Kingdom Infrastructure Report, Q1 2022, https://store.fitchsolutions.com/all-products/united-kingdom-infrastructure-report

264 Fitch Solutions: United Kingdom Infrastructure Report, Q1 2022, https://store.fitchsolutions.com/all-products/united-kingdom-infrastructure-report

265 Fitch Solutions: United Kingdom Infrastructure Report, Q1 2022, https://store.fitchsolutions.com/all-products/united-kingdom-infrastructure-report

266 Fitch Solutions: United Kingdom Infrastructure Report, Q1 2022, https://store.fitchsolutions.com/all-products/united-kingdom-infrastructure-report

267 Fitch Solutions: United Kingdom Infrastructure Report, Q1 2022, https://store.fitchsolutions.com/all-products/united-kingdom-infrastructure-report

268 Ibidem.

269 Ibidem.

270 Regulatory Policy Committee, The Electricity and Gas Order 2018 Department for Business, Energy and Industrial Strategy. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/767584/RPC-4226_2_-BEIS-The_Electricity_and_Gas__Energy_Company_Obligation__Order_2018_-_IA_f__-_opinion.pdf

271 Energy Company Obligation, ECO3: 2018-2022. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/696448/ECO3_consultation.pdf

272 Energy UK, Energy Companies Obligation. http://www.energy-uk.org.uk/policy/energy-efficiency/energy-companies-obligation.html

273 How will the Autumn Budget impact the construction industry?, October 2021, https://www.pbctoday.co.uk/news/planning-construction-news/construction-autumn-budget-2021/101101/

274 How will the Autumn Budget impact the construction industry?, October 2021, https://www.pbctoday.co.uk/news/planning-construction-news/construction-autumn-budget-2021/101101/

275 BREEAM, Health and wellbeing in BREEAM. http://www.breeam.com/filelibrary/Briefing%20Papers/99427-BREEAM-Health---Wellbeing-Briefing.pdf

276 BREEAM, What is BREEAM?. http://www.breeam.com/

277 Sustainable homes, The 25 Year Environment Plan: What does it mean for housing?, January 2018, https://www.sustainablehomes.co.uk/the-25-year-environment-plan-what-does-it-mean-for-housing/

278 EU 2020 Single Market Scoreboard. https://ec.europa.eu/internal_market/scoreboard/performance_by_member_state/uk/index_en.htm

279 Effective from 31st January 2020, the United Kingdom withdrew from the EU. The 2020 Single Market Scoreboard refers to time periods prior to UK's withdrawal and hence it is listed as a Member State. https://ec.europa.eu/internal_market/scoreboard/performance_by_member_state/uk/index_en.htm

280 EU 2020 Single Market Scoreboard. https://ec.europa.eu/internal_market/scoreboard/performance_by_member_state/uk/index_en.htm

281 EU 2020 Single Market Scoreboard. https://ec.europa.eu/internal_market/scoreboard/performance_by_member_state/uk/index_en.htm

282 EU 2020 Single Market Scoreboard. https://ec.europa.eu/internal_market/scoreboard/performance_by_member_state/uk/index_en.htm

283 Greater London Authority, Housing in London 2019. October 2019. https://data.london.gov.uk/dataset/housing-london

284 House of Commons, Brexit: implications for the housing market and construction industry. October 2016. http://researchbriefings.parliament.uk/ResearchBriefing/Summary/CBP-7666#fullreport

285 Eversheds, Brexit and the implications for UK construction. May 2016. http://www.eversheds.com/global/en/what/articles/index.page?ArticleID=en/Construction_And_Engineering/Brexit_and_the_implications_for_UK_construction

286 UK Parliament, Clarity needed on UK access to Digital Single Market post-Brexit, March 2017, https://www.parliament.uk/business/committees/committees-a-z/commons-select/european-scrutiny-committee/news-parliament-20151/digital-market-access-report-published-16-17/

287 Ibidem.

288 Roadmap to Recovery: An Industry Recovery Plan for the UK Construction Sector, https://www.constructionleadershipcouncil.co.uk/wp-content/uploads/2020/10/R2R-Status-Report-v5.0-FINAL.pdf

289 Roadmap to Recovery: An Industry Recovery Plan for the UK Construction Sector, https://www.constructionleadershipcouncil.co.uk/wp-content/uploads/2020/10/R2R-Status-Report-v5.0-FINAL.pdf

290 JRC Report EUR 27511 EN, State of implementation of the Eurocodes in the European Union. 2015. http://eurocodes.jrc.ec.europa.eu/showpublication.php?id=537

291 World Bank Doing Business Report 2020 – United Kingdom, https://www.doingbusiness.org/content/dam/doingBusiness/country/u/united-kingdom/GBR.pdf

292 Ibidem.

293 Inward FATS describe the overall activity of foreign affiliates resident in the compiling economy. A foreign affiliate within the terms of inward FATS is an enterprise resident in the compiling country over which an institutional unit not resident in the compiling country has control.

294 Data unavailable for subsequent years.

295 Outward FATS describe the activity of foreign affiliates abroad controlled by the compiling country. Foreign affiliate within the terms of outward FATS is an enterprise not resident in the compiling country over which an institutional unit resident in the compiling country has control.

296 European Commission, 2019 SBA Fact Sheet UK. https://ec.europa.eu/growth/smes/business-friendly-environment/performance-review_en

297 UK Government, Construction 2025 Industrial Strategy. July 2013. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/210099/bis-13-955-construction-2025-industrial-strategy.pdf

298 Gov.uk, Increase productivity, performance and quality in UK construction, https://apply-for-innovation-funding.service.gov.uk/competition/203/overview

299 European Commission, Country Report United Kingdom 2019. February 2019. https://ec.europa.eu/info/sites/info/files/file_import/2019-european-semester-country-report-united-kingdom_en.pdf