European Commission

European Construction Sector Observatory

Country profile United Kingdom

June 2018

In a nutshell

The number of enterprises in the UK **broad construction sector** amounted to 449,775 in 2016, a 7.3% increment over 2010-2016, mainly driven by the 32.1% increase in the number of architectural and engineering companies. Despite dropping in 2012, **production** in construction has been increasing ever since, being 11.3% above the 2010 level in 2016. Namely, production in construction of buildings and production in civil engineering experienced an increasing trend over 2010-2016. The number of workers in the broad construction sector experienced a slight decline over 2010-2016 (-4.8%), whereas profitability recovered from the effects of the crisis, with the turnover and gross operating surplus growing by 44.6% (EUR 489,704) and by 88.4% (EUR 134.8 billion) over 2010-2016, respectively.

Number of enterprises in the Uk broad construction sector evolution 2010-1016 ↑ **7.3%**

The **UK housing market** experienced a boom and bust cycle, with the house price index in the country increasing by 24.3% between 2010 and 2016 with the greatest rise was recorded in East Anglia (+5.0), outnumbering the pre-crisis level. Consequently, the UK is facing a housing shortage and affordability issues with the need for additional housing has been estimated at 232,000 to 300,000 new units per year. To tackle these challenges, the government plans to deliver 400,000 affordable housing units by 2020-21, 100,000 of which financed through a new GBP 2.3 billion (EUR 2.7 billion) Housing Infrastructure Fund.

House price index evolution 2010-2016 ↑ **24.3%**

The government's objectives and priorities for future **infrastructure investment** are defined in the National Infrastructure Delivery Plan 2016-2021: 721 planned public and private infrastructural projects are detailed in the new National Infrastructure and Construction Pipeline, with a total value of over GBP 500 million (EUR 586). The new GBP 23 billion (EUR 26.8 billion) National Productivity Investment Fund will also finance investments in infrastructure, housing and research and development (R&D) over 2017-2022.

The UK is a leader in sustainable construction and **energy efficiency**, with particular focus being placed on the renovation of residential buildings. Total **household renovation spending** stood at EUR 1.6 billion in 2016 in absolute terms, and at 0.2% of total household disposable income. Renovation spending is currently supported by available initiatives such as the Energy Company Obligation (ECO) scheme, which has recently extended up to mid-2018 and aims to promote solid wall insulation, cavity wall insulation and replacement of heating systems for vulnerable households, by placing obligations on energy suppliers.

Nevertheless, the UK construction sector faces challenges related to an important **shortage of skilled labour**, potentially aggravated by the reduced flow of EU migrant workers post-Brexit, which could lead to the loss of 215,000 workers. This would negatively affect the ability to deliver the planned housing units and ambitious infrastructural projects, and entail increases in construction costs when leaving the EU Single Market. Growth projections for the sector are low, forecast at 1.7% for 2018, 2.2% for 2019 and 2.5% for 2020, with residential buildings and infrastructure projects being core drivers of the sector's growth.

The UK is a leader in sustainable construction and energy efficiency, with particular focus being placed on the renovation of residential buildings.

1

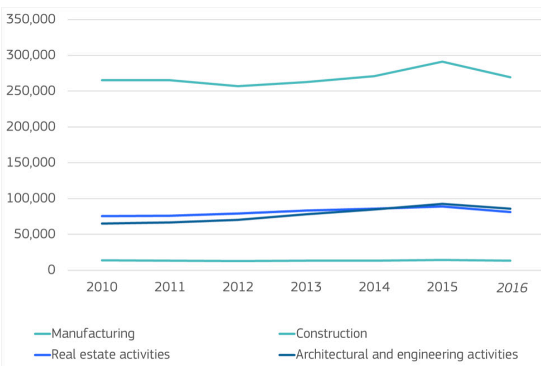
Key Figures

The **number of enterprises** in the broad construction sector in the United Kingdom totalled 449,775 in 2016[1] (Figure 1). The narrow construction sector accounted for 59.9% of the total, followed by architectural and engineering activities (19.1%), real estate activities (18.1%) and manufacturing (2.9%). The **number of enterprises** in the broad construction sector increased by 7.3% over 2010-2016, mainly driven by the 32.1% increase in the number of architectural and engineering companies. Despite dropping in 2012, production in construction has been increasing ever since, being 11.3% above the 2010 level in 2016. Namely, **production** in construction of buildings increased by 10.9% between 2010 and 2016, while production in civil engineering increased by 14.0% over the same period (Figure 2).

The **total added value**[2] of the broad construction sector amounted to EUR 216.5 billion in 2016[3], with the construction sub-sector contributing to 53.2% of the total (EUR 115.2 billion), followed by real estate, architectural and engineering activities and manufacturing (Figure 3).

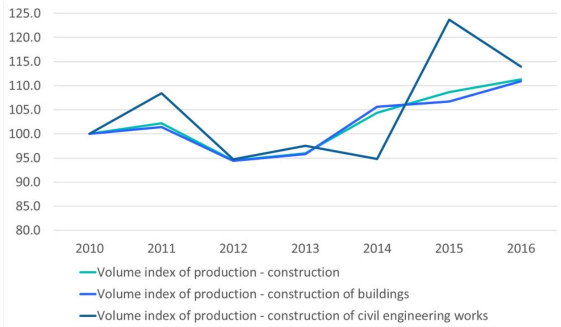
The share of **gross value added** of the broad construction sector in the GDP reached 18.9% in 2015, in line with the EU-28 average of 16.9%, with real estate activities having the largest contribution (Figure 4).

Figure 1: Number of enterprises in the construction sector in the United Kingdom, 2010-2016



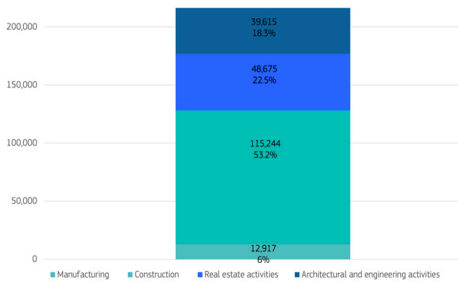
Source: Eurostat, 2017.

Figure 2: Volume index of production in construction sector in the United Kingdom, 2010-2016 (2010=100)



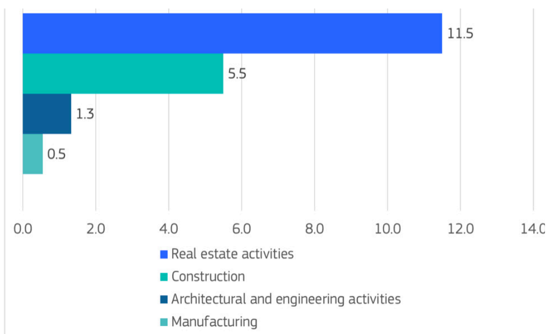
Source: Eurostat, 2017.

Figure 3: Value added in the construction sector in the United Kingdom in 2016 (EUR m)



Source: Eurostat, 2017.

Figure 4: Gross value added as a share of GDP in the construction sector in the United Kingdom, 2015 (%)



Source: Eurostat, 2017.

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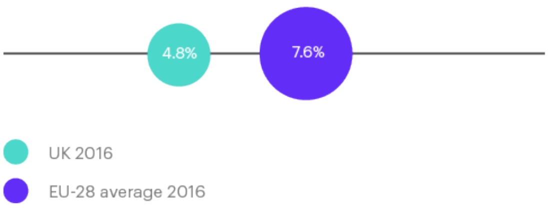
Macroeconomic Indicators

The UK economy has been recovering since 2010, with its GDP amounting to GBP 1,767.3 billion (EUR 2,000 billion) in 2016, supported by increasing domestic demand and employment, coupled with subdued price and wage pressures.

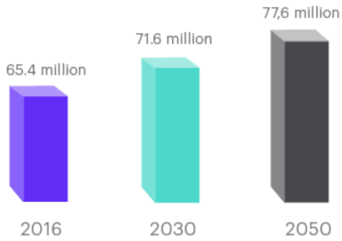
The UK economy has been recovering since 2010, with its **GDP** amounting to GBP 1,767.3 billion (EUR 2,000 billion) in 2016, supported by increasing domestic demand and employment, coupled with subdued price and wage pressures. This is 12.4% higher than the 2010 level. However, growth is projected to be lower in 2017 (+1.5%) and 2018 (+1.2%), due to limited business investment and a slower increase in private consumption, as well as the uncertainty around the future relationship with the EU[4]. In 2016, the potential GDP was GBP 1,758.9 billion (EUR 1,996.8 billion). The resulting slightly positive output gap (+0.5%, compared to the EU-28 average of -0.75%), suggests some overutilization of resources in the national economy. The **inflation rate** has been declining since 2012, dropping to 0% in 2015 but picking up in 2016 to 0.7%. Nevertheless, it is expected to reach 2.5% in 2017 and 2.6% in 2018, due to the depreciation of the Pound[5]. The labour market has been performing well, with **employment rates** growing and unemployment falling. The unemployment rate reached 4.8% in 2016, below the EU-28 average of 7.6% and the lowest over the past 10 years. Similarly, youth unemployment (below the age of 25) was at 13.0% in 2016, below the EU-28 average of 18.7% and the lowest since before the crisis[6].

GDP evolution 2010-2016 ↑ **12.4%**

Unemployment rate



In terms of demographics, the UK's **total population** reached 65.4 million people in 2016, and is projected to increase to 71.6 million by 2030 (+9.5%) and to 77.6 million by 2050 (+18.6%). In parallel, net migration has been positive since 2000, with 248,384 people entering the country in 2016. The UK's **working age population**, which made up 64.3% of the total in 2016, will have shrunk to 59.7% by 2050, while people aged 65 or older will make up 23.9% of the total. Because of the ageing population, healthcare expenditure is expected to increase by 1.3 percentage points of GDP between 2013 and 2060[7].



UK's total population

In 2016, **general government expenditure** in the UK accounted for 42.1% of GDP, a continuous decline since 2010 (48.0%). The same year, **general government deficit** stood at -3.0% of GDP, the lowest since the 2009 peak of -9.5%. **General government gross debt** accounted for 89.3% of GDP, on the increase since 2010 (76%). The relatively high deficit is mainly linked to lower growth in revenues and higher government consumption[8]. The high government debt, coupled with the forecast increase in healthcare expenditure related to the ageing population, constitutes a risk for the country's fiscal sustainability[9].

According to the 2017-2018 Global Competitiveness Report, the UK ranks 13th out of 137 economies in terms of **financial market development,** with financing through the local equity market being the best performing indicator (3rd), followed by venture capital availability (12th) and affordability of financial services (12th). Conversely, ease of access to loans scores comparably worst (37th). Access to finance is considered the seventh most problematic factor for doing business[10]. In 2017, 67% of SMEs declared having applied for a loan and received the full requested amount, lower than the EU-28 average of 73%, while 8% of SMEs saw their application rejected, compared to 5% in the EU[11].

> The UK performs in line with the EU in terms of entrepreneurship, with above average scores for early stage entrepreneurial activity, particularly for women, as well as the high status and media attention given to successful entrepreneurs.

However, its performance with respect to entrepreneurship education both at school and at post-secondary level is below the EU average[12]. The country implemented several measures to support businesses, such as the provision of an additional GBP 12 million (EUR 14 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 257,000) to encourage more innovation by women in sectors such as manufacturing, IT, enabling technologies and health and life sciences[13]. Finally, the UK ranks 14th out of 190 economies in terms of **starting a business**, requiring four procedures to register a firm and taking 4.5 days to complete[14].

3

Key economic drivers of the construction sector

Productivity

Overall, **labour productivity** in the UK broad construction sector increased from EUR 59,428 in 2010 to EUR 93,074 in 2015[15](+56.6%), being well above the EU-28 average of EUR 50,220 (Figure 5). Real estate activities reported the highest productivity, which grew from EUR 67,900 in 2010 to EUR 100,700 in 2016[16] (+48.3%). This was followed by architectural and engineering activities, which increased their productivity from EUR 65,800 to EUR 94,700 over the same period (+43.9%). Productivity in manufacturing was the lowest among all sub-sectors, although it went up from EUR 41,600 in 2010 to EUR 77,500 in 2016 (+86.4%), the highest increment. Productivity in construction experienced a 60.3% growth, reaching EUR 91,500.

Labour productivity in the broad construction sector

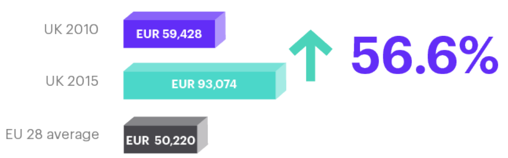
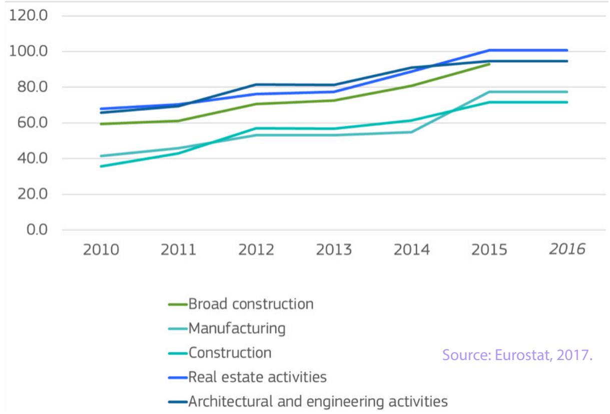


Figure 5: Labour productivity in the construction sector in the UK over 2010-2016 (EUR k)

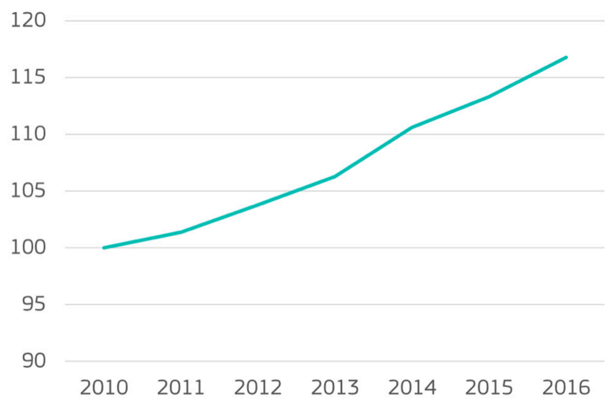


Source: Eurostat, 2017.

Profitability

The **turnover** of the broad construction sector reached EUR 489,704 in 2016[17], a 44.6% increase since 2010 (EUR 338,674). Similarly, the gross operating surplus has been increasing since 2010, reaching EUR 134.8 billion in 2015, being 88.4% above the 2010 level (EUR 71.6 billion). The gross operating rate of the broad construction sector[18], which gives an indication of the sector's profitability, was 25.9% in 2015, 4.8 percentage points above the 2010 value (21.1%). In parallel, construction costs for residential buildings have been experiencing an increasing trend, with the construction cost index rising by 16.8% over 2010-2016, supported by the 9.5% increase in input prices for materials (Figure 9). This is being exacerbated by the fall of the Sterling since the Brexit vote. According to the Federation of Master Builders, 70% of construction SMEs are already reporting increases in material costs, especially for materials such as slate and timber[19].

Figure 6: Construction cost index for residential buildings in the United Kingdom over 2010-2016 (2010=100)



Source: Eurostat, 2017.

Turnover of the broad construction sector

Employment

In 2016[20], the broad construction sector **employed** 2,327,452 people, a 4.8% decline compared to 2010 (2,444,728). Narrow construction employed 54.1% of the total workforce in the broad construction sector in 2016 (1,258,882 people), although this number has declined by 8.9% since 2010 (Figure 10). As for **employment by specific occupation**, the number of clerical support workers in the construction sub-sector saw the largest decline, from 150,000 in 2010 to 113,000 in 2016 (-25.0%), followed by plant and machine operators and assemblers (-29.8%, from 82,000 to 66,000). Conversely, the number of technicians and associate professionals increased from 96,000 to 196,000 over the same period. In the real estate sub-sector, craft and related trades workers experienced the highest increase, from 8,000 in 2010 to 15,000 in 2016 (+79.5%). Managers, who increased from 85,000 to 117,000 over 2010-2016 (+38.0%), were the single largest occupation in the sub-sector.

Number of people employed in the broad construction sector evolution

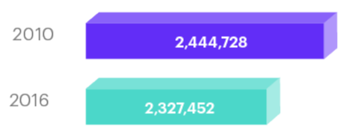
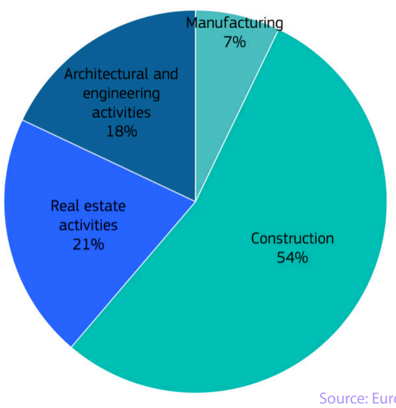
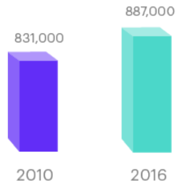


Figure 7: Percentage of people employed by construction sub-sectors in the UK in 2016



Source: Eurostat, 2017.

The number of **self-employed** workers in the construction sub-sector increased from 831,000 in 2010 to 887,000 in 2016 (+6.7%). This represents 20.6% of the self-employed in the general economy, well above the EU-28 average of 12.9%. Similarly, self-employed workers in real estate activities grew from 40,000 to 51,500 over the same period (+28.8%). Finally, SMEs employ 88.3% of the total workforce in the broad construction sector, slightly above the EU-28 average of 85.8%, highlighting their importance in construction employment.

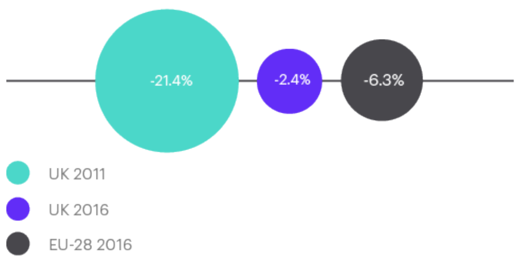


Number of self-employed workers in the construction sub-sector

Business confidence

The **consumer confidence** indicator has been negative up until 2013, and even prior to the economic crisis, bottoming out in 2011 at -21.4. It entered positive territory in 2014 and 2015, but then further dropped to -2.4 in 2016, although it is still better than the EU-28 average of -6.3. **Industry confidence** improved from -4.5 in 2010 to 7.2 in 2014, but then declined again to -1.8 in 2016, though better than the EU-28 average of -2.5. The **construction confidence** indicator recorded the worst performance, dropping to a bottom low of -53.7 in 2009 and remaining in deep negative territory since then. Nevertheless, it has been improving continuously, reaching -4.9 in 2016, compared to the EU-28 average of -13.9. In parallel, the investment ratio increased from 15.6% in 2010 to 16.6% in 2016, though being below the EU-28 average of 19.8%. Similarly, investment per worker increased from 83,349 in 2010 to EUR 92,033 in 2015.

Consumer confidence



According to a recent survey, the number of construction firms expecting an increase in business activity over the next 12 months reached its lowest since 2012. Indeed, the British construction sector has struggled due to a decline in commercial office building during the past year. Moreover, a number of existing large infrastructure projects have ended, while there is a shortfall of new contracts to replace them, being the main cause of worry for the industry[21].

Domestic sales

Between 2010 and 2016, the ranking of the **most domestically sold construction products** has remained constant in the UK. 'Other structures, etc.' experienced a 51.8% decline in its value over 2010-2016, while "Ready-mixed concrete" saw a 62.6% increase in its domestic sale value, growing from EUR 1.3 billion in 2010 to EUR 2.1 billion in 2016. Table 3 presents the top 5 most domestically sold construction products, both in the UK and the EU-28, which made up 45.2% of all UK construction product sales in 2016.

Table 1: 5 most domestically sold construction products in the UK and EU in 2016

United Kingdom			EU-28
Product	Value (EUR m)	Share in construction product domestic sales (%)	Product
Other structures, etc. (group 251123)	2,493.7	11.0	Other structures (group 251123)
Doors, windows, etc. (group 251210)	2,260.2	10.0	Doors, windows, etc. (group 251210)
Ready-mixed concrete (group 236310)	2,070.2	9.2	Ready-mixed concrete (group 236310)
Tiles, flagstones, bricks, etc. (group 236111)	1,722.8	7.6	Prefabricated buildings of metal (group 251110)
Builders' joinery and carpentry of wood (group 162319)	1,670.0	7.4	Prefabricated structural components for building or civil engineering, etc.(group 236112)

Source: PRODCOM, 2017.

Export of construction-related products and services

The ranking of the **most exported construction products** has experienced some variation since 2010, with 'Particle boards and similar boards' and 'Portland cement' being replaced by 'Articles of cement, concrete, etc.' and 'Prefabricated buildings of metal'. The value of exports of 'Other structures and parts of structures' decreased by 62.8% over 2010-2016, whereas 'Articles of cement, concrete, etc.' experienced a 98.0% increase in export value. The top 5 most exported construction products from the UK and the EU-28 are summarised in Table 4. Together, these made up 50.0% of all construction product exports in 2016.

Table 4: 5 most exported construction products in the UK and in the EU in 2016

United Kingdom			EU-28
Product	Value (EUR m)	Share in construction product domestic sales (%)	Product
Other structures, etc. (group 251123)	165.0	19.3	Ceramic tiles and flags (group 233110)
Prefabricated buildings of metal (group 251110)	75.6	8.8	Other structures (group 251123)
Doors, windows and their frames, etc. (group 251210)	66.8	7.8	Fibreboard of wood or other ligneous materials (group 162114)
Bridges and bridge-sections of iron or steel (group 251121)	65.4	7.6	Marble, travertine, etc. (group 237011)
Articles of cement, concrete, etc. (group 236919)	55.9	6.5	Doors, windows, etc. (group 251210)

Source: PRODCOM, 2017.

In terms of cross-border provision of construction services, the UK exported EUR 653.4 million to the EU-28 in 2016[22], a 27.4% decline compared to 2014 (EUR 899.4 million).

In parallel, it imported EUR 799.2 million in construction services in 2016, a 63.6% drop since 2014 (EUR 2.2 billion). The UK therefore reported a **trade gap** of EUR 145.8 million in 2016.

Access to finance in the construction sector

The economic crisis deeply affected the lending practices of UK banks, leading them to reduce their willingness to take risks in lending operations. This has had particular repercussions on SMEs, since bank lending is their largest source of financing. According to the Manufacturers' Organisation (EEF), the financing landscape has improved only marginally since the crisis, with credit conditions for smaller SMEs remaining constrained. Namely, the construction sector is still experiencing difficulties in accessing funding, regardless of the size of the companies, since banks still perceive the risk associated with the sector to be too high[23].

The National Federation of Builders (NFB) confirmed that access to finance in the construction sector has improved since 2010, but is still insufficient. The net lending to construction companies amounted to GBP 33.0 billion (EUR 38.8 billion) in 2016, 38.4% above the 2010 level, but have been on the decline since 2013 (GBP 52.3 billion).

Smaller house-builders in particular are facing funding issues. The Federation of Master Builders reports that 54% of small and medium-sized developers declared access to finance as a major barrier to building more homes in 2017, compared to 50% in 2016[24]. Moreover, builders with a construction capacity of fewer than 500 units a year currently account for only 26% of all newly built homes, compared to 75% in the late 1980s. The high cost of land and difficulty in obtaining planning permission increases the up-front capital needed to build dwellings, as well as the uncertainty over whether completed units can be sold[25].

> Bank loans are the most common source of financing (followed by personal funds, used by 27% of construction companies[26]), with more than 80% of UK house builders' debt being held by only five high-street banks.

Bank loans are the most common source of financing (followed by personal funds, used by 27% of construction companies[27]), with more than 80% of UK house builders' debt being held by only five high-street banks. The NFB therefore advocates the importance of diversifying their debts and promoting alternative financing means by raising awareness of alternative products among SMEs[28]. These include crowdfunding, Business Angels and Venture Capital, which currently play a marginal role in the financing of construction.

Initiatives launched in order to improve access to finance in construction include:

• The **Supply Chain Finance**: the scheme offers 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 such as Carillion, Balfour Beatty, Willmott Dixon and Kier have adopted this scheme, reporting a substantial number of adherents among their suppliers.

• The **Project Bank Accounts (PBAs)**: set up by the Cabinet Office to facilitate payments to the end-tier contractors. The GBP 2 billion (EUR 2.35 billion) spent via PBAs have reached tier 3 contractors within five business days. Government departments have committed to use PBAs on their projects unless there are compelling reasons not to do so, although PBA use is not widespread across all government construction projects. Successful examples of PBA implementation include Highways England, the government-owned company managing motorways and major roads, which can serve as a best practice[29]. Use of PBAs also does not deal with issues around retentions by the main contractor. A cash retention is the deduction of a portion of an agreed value of a contract withheld by the main contractor to cover defects in an agreed maintenance period of one or two years. Retentions are often not released at all or in a timely manner, which is a serious issue for many SMEs that are cash flow dependent.

• The **Home Building Fund**: a flexible source of funding managed by the Homes and Communities Agency (HCA), which acts on behalf of government, and is open to small builders, community builders, custom builders and regeneration specialists. Loans of £250,000 (EUR 283,265) to £250 million (EUR 283 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). Infrastructure finance – loan funding for site preparation and the infrastructure required to enable housing to progress and to prepare land for development[30].

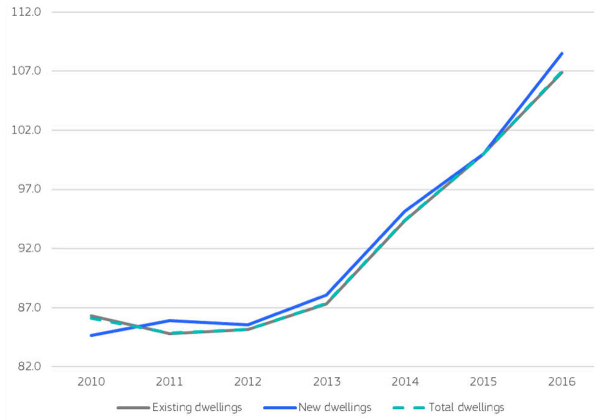
Access to housing

> In 2016, 87.9% of the UK population lived in cities and greater cities, adding to the existing pressure on the construction of residential housing in cities like London.

In 2016, 87.9% of the UK population lived in cities and greater cities, adding to the existing pressure on the construction of residential housing in cities like London. In parallel, the number of **households** increased by 5.2% between 2010 and 2016, reaching 28.7 million in 2016. Moreover, the **mean equivalised net income** saw a 14.2% increment over 2010-2015, amounting to GBP 20,101 in 2015 (EUR 23,336.8), being well above the EU-28 average of EUR 18,463.

The UK property market experienced a boom and bust cycle, with the **house price index** in the country increasing by 24.3% between 2010 and 2016 alone (Figure 11). The greatest rise was recorded in East Anglia, with house prices increasing by 5.0%, followed by South West (4.4%), North West (4.1%), East Midlands (4.1%) and Northern Ireland (3.8%)[31]. In the aftermath of economic crisis, the house price index has been steadily increasing and went up by 24.3% over 2010-2016, outnumbering the pre-crisis level.

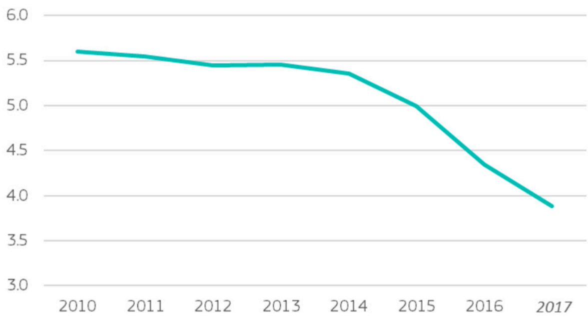
Figure 8: House price index in the UK between 2010-2016 (2010=100)



Source: Eurostat, 2017.

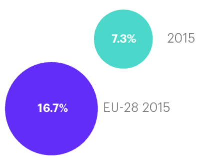
Similarly, mortgage lending to households experienced a continuous growth after the crisis, with total **outstanding residential loans** peaking at EUR 1,741 billion in 2015[32]. This revival is also owed to plummeting **mortgage interest rates** (Figure 12), which reached a bottom low of 3.9% in 2017[33]. Nevertheless, the low interest rates and increasing lending may worsen the indebtedness situation of UK households. These owed GBP 1.6 trillion at the end of 2017, with the average total debt per household amounting to GBP 57,578, about EUR 65,000 (i.e. 113.8% of average earnings)[34].

Figure 9: Mortgage rates for loans for over 5 years original maturity (2010-2017) (%)



Source: ECB MFI Interest Rate Statistics, 2017.

Overcrowding rate



At the same time, residential construction activities have been picking up. In fact, 196,790 dwellings were started in the financial year 2016-2017, 39.5% higher than the bottom low of 119,150 in 2008-2009 but well below the 234,280 peak recorded in 2005-2006[35]. Similarly, 178,360 dwellings were completed in 2016-2017, 5.5% above the 2015-2016 level, but 17.4% below the 215,860 completions reported in 2007-2008[36].

Because of the previously mentioned structural and short term pressures, the UK is facing a housing shortage, where supply is lagging behind demand. Notably, the need for additional housing has been estimated at 232,000 to 300,000 new units per year[37]. The shortage is particularly predominant in Greater London and the South East (Kent, Surrey and Sussex). This shortage is contributing to pushing prices up which, combined with the relatively slower increase in disposable incomes, is creating an issue of housing affordability. Consequently, housing affordability remains a challenge with the increase high cost, which is linked to inadequate supply. 12.5% of the UK population spend over 40 % of their income on housing, which is above the EU average and has been growing. The proportion is higher for city residents (14.7%) and young people (22.1%)[38].

The UK has the fourth lowest **home ownership rate** in the EU, only above Denmark, Austria and Germany[39], standing at 63.5%, the lowest over the past 10 years (70% in 2005). This rate increases to 67.6% for the population whose income is above 60% of the median equivalised income, but drops to 43.3% for those below this threshold[40]. Conversely, the share of tenants has been increasing, from 30.0% in 2010 to 36.5% in 2015 (from 47.6% to 56.7% for the population below 60% of median equivalised income), as ownership becomes increasingly unattainable. In addition, housing affordability issues are also reflected by the **housing cost overburden rate**[41], which was at 12.5% in 2015, above the EU-28 average of 11.3%[42]. Several actions are being adopted by the government to address the housing shortage and the issue of affordability (see Policy schemes).

Nevertheless, housing quality in the UK is good, with the **overcrowding rate**[43] in 2015 being at 7.3%, below the EU-28 average of 16.7%[44]. Similarly, the **severe housing deprivation rate**[45] reached 2.2% in 2015, below the EU-28 average of 4.9%[46].

Infrastructure

> The UK ranks 11th out of 137 in terms of its infrastructure, according to the 2017-2018 Global Competitiveness Report[47].

However, it scores 16th with regard to quality of port infrastructure, 19th to quality of railroad infrastructure and 27th to overall quality of infrastructure, mainly because of the lower scores for quality of railroad infrastructure and quality of roads. An ambitious pipeline of infrastructural projects has recently been announced by the government, relying both on public and private funds (see TO 1 - Investment conditions and volumes). The declining in infrastructure investment is one of the most concerning aspects noted by Noble Francis, the economics director at the Construction Products Association[48].

4

Key issues and barriers in the construction sector

Company failure

The business demography in the broad construction sector has generally seen an increase in the number of company births and a decrease in the number of deaths across all sub-sectors between 2010 and 2014[49], despite some fluctuations. Namely, **company births** in the construction sub-sector increased by 49.9%, from 27,345 in 2010 to 40,990 in 2014, whereas the number of **company deaths** decreased by 18.9%, from 39,095 to 31,715. Similarly, the architectural and engineering activities sub-sector experienced a 121.9% increase in company births (from 6,315 in 2010 to 14,010 in 2014) and a 17.1% increment in deaths (from 6,475 to 7,580). Company births in real estate activities also experienced a 31.4% growth, from 8,180 to 10,745 over 2010-2014, whereas company deaths decreased by 3.3%, from 7,145 to 6,910.

In 2017, the construction sector reported the second highest number of 2,616 new companies **insolvencies** (after the administrative and support services sector), the highest of all sectors in the UK economy. Carillion, which was the UK's second biggest construction firm and a major service provider for the government, went into liquidation with GBP 900 million debt pile and GBP 600 million pension deficit. As for the real estate sector, it recorded around 375 insolvencies in 2017, which remained unchanged[50].

According to the NFB, **bankruptcy** in the construction sector is mostly due to the fact that, to secure contracts in the years of economic downturn, UK companies were bidding at much lower prices for their work. Following the crisis however, these companies could no longer cope with the rising costs of labour and materials. This is exacerbated by late payments and retentions (see Late payment).

Trade credit

Trade credit is a widespread financing practice across the entire UK construction sector, from contractors to construction product manufacturers, having the potential to overtake bank lending[51]. It has developed into a 'cascade' system among the various tiers of subcontractors, whereby lower tier constructors receive credit from outside the industry, which they pass on to the next level of contractors, and ultimately to the client. Thus, problems for low-tier contractors in accessing credit would have repercussions throughout the entire supply chain[52]. Other similar sources of finance include factoring and invoice discounting used by 4% construction contracting firms. Nevertheless, according to a recent survey, 25% of building and construction companies reported an increase in the trade credit risks they faced, with this sector showing a particularly marked perceived risk related to this payment practice, together with manufacturing and engineering[53]. In according to SAFE Report, 43% of respondents have applied for trade credit in the UK, above the EU-28 average of 35% in 2016. Over 70% of respondents claimed that availability of trade credit remained unchanged and will continue the same in the near future[54].

Late payment

> Late payment is the most important issue affecting UK construction companies, with over 20% of contracting SMEs being paid over a 60-day span by their customers.

Late payment is the most important issue affecting UK construction companies, with over 20% of contracting SMEs being paid over a 60-day span by their customers[55]. Inefficient administration is the main obstacle for late payments. However, 42% of the respondents in UK noted that implementation of the European Late Payment Directive led to faster payment practices, compared to the EU average of only 17%. Payment terms on average allowed by businesses to their customers (B2C) reached 19 days, 25 days for B2B and 23 for PA2B in 2017, which is shorter compared to 2016. Similarly, the average time taken by customers to pay improved between 2016 and 2017, with 16 days for B2C transactions (17 in 2016), 26 days for B2B (29 in 2016), and 22 days for PA2B (30 in 2016)[56]. On the other hand, European Payment Risk Index shows that the situation deteriorated and the index stood at -0.23 in 2017 compared to 0.29 in 2016. More specifically, in 2015, the construction sector was among the best performing in the general economy with regard to its payment records, with 31.7% of payments being settled by due date and 62.8% within a maximum of 30 days. Only 5.5% of payments were settled over 30 days[57].

Time and cost of obtaining building permits and licenses

> The UK ranked 14th (out of 190 countries) in 2018 in terms of 'dealing with construction permits', according to the World Bank's Doing Business Report 2018, slightly better than the previous year (17th)[58].

9 procedures and 86 days are required to complete administrative formalities to build a warehouse, which is shorter than the OECD high-income average (12.5 procedures and 154.6 days, respectively). Furthermore, the cost of building a warehouse represents 1.0% of the value of the warehouse, below the OECD high-income average of 1.6%. 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. 1 day is necessary to hire an AI in the UK, costing on average GBP 2,964 (EUR 3,490) (Table 5).

Table 3: Construction procedures timing and costs in the UK

Procedure	Time to complete	Associated costs
Obtain planning permission	56 days	GBP 6,676 (EUR 7,763.5)
Hire an Approved Inspector	1 day	GBP 2,964 (EUR 3,445.5)
Approved Inspector files the initial notice to the Local Authority	5 days	no charge
Apply for water and sewage connection	1 day	no charge
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 6,187.8)
Request and receive energy performance certificate from Accredited Energy Assessor	1 day	GBP 78 (EUR 90.7)
File completion certificate with the Local Building Control Department	1 day	no charge

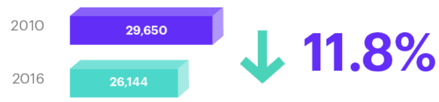
Source: Doing Business overview for the UK, Word Bank, 2017

Skills shortage

Job vacancies in all construction subsectors have increased after the economic crisis. Namely, in the construction sub-sector, it went up by 133.3% between 2010 and 2015, from 10,500 to 24,500, rising above the 2008 level. Similarly, vacancies in the real estate sub-sector grew by 92.0%, from 6,250 in 2010 to 12,000 in 2015, also experiencing an increment above the 2008 value.

Nevertheless, the **number of tertiary students in engineering, manufacturing and construction,** and specifically in architecture and building, decreased by 11.8% over 2010-2015, from 29,650 to 26,144. Moreover, **adult participation in education and training** in the construction sub-sector went down from 19.1% in 2010 to 15.4% in 2016 and considerably below 2008. In 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 19.6% in 2015.

Number of tertiary students in engineering, manufacturing and construction rate



The UK construction sector suffers from an acute labour shortage, with 182,000 jobs needing to be filled by 2018[59]. In addition to these, according to the Construction Industry Training Board (CITB), 400,000 skilled workers will reach retirement age in the next ten years[60]. Particular shortages are observed for professions such as bricklayers and carpenters, with 63% and 41% of contractors reporting issues recruiting these trades, respectively[61]. Moreover, it is estimated that 230,000 new construction jobs will be created by 2020 in the UK, which implies that there will be the annual need for approximately 9,400 non-construction professionals (e.g. IT, technical and office-based staff), 4,320 wood trade professionals, 2,870 bricklayers, 2,510 envelope specialists and 2,120 senior executives/process managers[62].

Issues facing the sector in this respect include the bad image of the industry, which is seen by youngsters as old-fashioned and unappealing. According to a government survey, the appeal of a career within the construction sector scores very low among 14- to 19-year olds (only 4.2 out of 10)[63]. Moreover, the Brexit vote may carry important implications for the availability of skilled workers in the future (see TO 4 - Single Market). The impact of Brexit additionally lingered with 42% respondents saying that a lack of skilled construction specialists is a noteworthy barrier to building homes, rising to half when looking to the following three years. One out of three of SMEs in UK, which employ EU professionals, noted that the end of free movement would trigger major constraint on the construction industry[64].

Although several initiatives have been taken to tackle these issues (see TO 2 - Skills), the NFB takes the view that the UK lacks a long-term vision to train construction professionals, especially skilled ones like engineers. Some of the existing training initiatives do not place sufficient importance on civil engineering skills and are too focused at the local level. In addition, the majority of training in construction focuses on a specific trade skill rather than developing long-careers including development and upskilling. Furthermore, a large number of unskilled workers with poor English language skills threatens the safety on construction sites. The NFB also made a case for better awareness raising regarding the existing skill needs and support programmes in the sector.

Sector & sub-sector specific issues

Material efficiency and waste management

> In 2014[65], the UK generated 120.4 million tonnes of construction and demolition (C&D) waste, representing 59.4% of the total waste generation (202.8 million tonnes).

In particular, non-hazardous C&D waste amounted to 55 million tonnes in 2014, 11.1% above the 49.5 million tonnes reported in 2010. Of these, 49.4 million were recovered, achieving a **recovery rate** of 89.9%, an improvement compared to 2010 (87.6%) and significantly above the 70% target imposed by the EU for 2020[66].

The methodology for measuring and reporting waste arising from construction, demolition and excavation activities on construction projects is detailed in the 'Construction Commitments: Halving Waste to Landfill'. This voluntary agreement also recommends the adoption of such guidelines by all UK construction clients and contractors. Namely, data should be collected for all projects with a value of GBP 300,000 (EUR 353,232) or more, as this is the threshold for the legal requirement for a construction site waste management plan in England[67]. In addition, the UK have used incentives like landfill taxes and levies on virgin aggregate to decrease the amount of C&D waste sent to landfill[68].

Climate and energy

Emissions of greenhouse gases (carbon monoxide and dioxide, methane and nitrous oxides) from construction and real estate activities in the UK amounted to a total of and 12.8 million and 755,534 tonnes in 2014[69], respectively. Emissions in the construction sub-sector have stayed relatively constant during the period 2008-2014, declining by 0.9%, whereas the real estate sub-sector experienced a 17.2% decrease.

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. A number of solutions, advocating action by the government and all actors in the construction sector, were proposed by the **Zero Carbon Hub** to address specific issues responsible for the gap[70]. These include promoting energy literacy (e.g. by training all industry professionals in energy performance standards), improving quality output (e.g. improving specification, design and procurement of materials and services), better implementation of national compliance methods and regimes (e.g. refining SAP process and methodology), better demonstration of performance (e.g. by further developing diagnostics tests) and continued evidence gathering. Consequently, according to new government figures published in mid-2017, UK greenhouse gas emissions are 42% lower than they were in 1990 and dropped by 6% during 2015 to 2016, due to a dramatic decline in the use of coal to make electricity[71].

5

Innovation in the construction sector

Innovation performance

The UK is considered an **Innovation Leader**, according to the European Innovation Scoreboard 2017, with its innovation performance increased by 11.7% relative to that of the EU in 2010.

The UK is considered an **Innovation Leader**, according to the European Innovation Scoreboard 2017, with its innovation performance increased by 11.7% relative to that of the EU in 2010[72]. The country performs above the EU average for most dimensions and its relative strengths are in Employment impacts, Attractive research systems and Human resources. On the contrary, its relative weakness is in Innovators, Finance and support, and Intellectual assets.

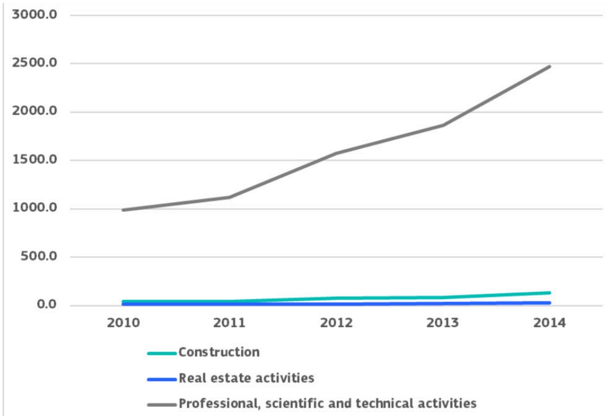
Business enterprise R&D expenditure (BERD) in the broad construction sector has shown a generally increasing trend over the past years (Figure 13).

Namely, the greatest increase in BERD was recorded by the construction sub-sector, which experienced a 194.0% soar between 2010 and 2014, from EUR 44.3 million to EUR 130.3 million. Similarly, BERD in professional, scientific and technical activities increased by 149.3%, from EUR 990.6 million in 2010 to EUR 2.5 billion in 2014, the highest across the sub-sectors. Finally, BERD in real estate activities also followed a similar trend, growing by 130.9%, from EUR 11.7 million in 2010 to EUR 26.9 million in 2014, the lowest across all sub-sectors.

In parallel, the total **R&D personnel** (full-time equivalents – FTE[73]) in the broad construction sector also experienced a growing trend. In line with the positive evolution of the BERD, the construction sub-sector reported the highest FTE, which grew by 446.4%, from 416 in 2010 to 2,273 in 2014. Likewise, total FTE in the professional, scientific and technical activities sub-sector soared by 95.6% during the same period, from 9,260 in 2010 to 18,111 in 2014. Real estate activities also saw a 85.2% increment in FTE, from 196 in 2010 to 363 in 2014.

Moreover, there has been an increase in the annual average number of **construction related patent applications** in recent years. In fact, over 2000-2007, an average of 268 patents were filed in the European Patent Office (EPO) and United States Patent and Trademark Office (USPTO). This increased to 298 in the period 2008-2016, with the year 2015 reporting the highest number of applications (323), highlighting the focus of the UK construction sector on research and technological advance. Moreover, four UK Construction & Materials firms rank within the top 1,000 EU companies by R&D (industrial sector ICB-3D), according to the 2017 EU R&D Scoreboard[74].

Figure 10: Business enterprise R&D expenditure (BERD) per construction sub-sector in the UK over 2010-2014 (EUR m)



Source: Eurostat, 2017

In line with the above, the UK is carrying out a great wealth of research in the construction sector. For instance, the **Engineering and Physical Sciences Research Council (EPSRC)** is founding new or renewed Centres for Doctoral Training, intended to focus on green construction in Sustainable Built Environments and End-Use Energy Demand. Another example is the **Sustainable Product Engineering Centre for Innovative Functional Industrial Coatings (SPECIFIC)** at Swansea University, aiming to turn buildings into mini power stations that can generate, store and then release renewable energy.

Promising trends in innovation in the sector are also observed with respect to funding and strategy. The Technology Strategy Board (TSB) has invested GBP 83 million (EUR 97.7 million) of innovation funding through the Low Impact Buildings Innovation Platform, combined with GBP 34 million (EUR 40 million) of industry match funding. Furthermore, the 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 Construction and Demolition (C&D) waste valorisation.

Moreover, the newly set up **National Productivity Investment Fund** (see TO 1 - Investment conditions and volumes) foresees investments of GBP 4.7 billion (EUR 5.5 billion) to enhance the UK's position as a world leader in science and innovation across numerous areas, including robotics, artificial intelligence and industrial biotechnology. The tax environment for R&D will also be reviewed, to make the UK an even more competitive country to do R&D[75].

Despite the above, the uptake of R&D activities is limited, with around two-thirds of construction firms reporting that they do not carry out any innovation activity at all[76]. Market barriers are given as the main reason for this by 40% of architectural and engineering firms and by 32% of construction product businesses[77]. However to improve the recent situation, R&D tax credit incentives were initially designed to promote investment in innovation and to strengthen UK enterprise in the run up to Brexit. For the construction industry, its estimated eligible R&D could be worth more than GBP 1 billion in tax credits annually but recently the sector's R&D tax credits claims have averaged just only GBP 23 million (EUR 26.1 million) per year. Major reasons were as a lack of awareness of the incentives and many firms consider their work to be outside of the R&D remit. The R&D incentives include anything from updating safety processes to developing a new technique and a wide range of other activities in between[78].

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. Finally, firms may be carrying out informal R&D, i.e. not supported by official programmes or partnerships with universities and research centres, which is therefore not reflected in the statistics.

6

National & Regional Policy & Regulatory Framework

Policy schemes

The latest comprehensive policy strategy for the construction sector, the **Government Construction Strategy 2016-2020**, was introduced by the Infrastructure and Projects Authority in March 2016, building on the previous Government Construction strategy 2011-2015. The Strategy sets out the government's plan to increase productivity in government construction, ultimately achieving efficiency savings worth GBP 1.7 billion (EUR 2.0 billion)[79]. It covers a variety of areas in the construction sector, from skills to environmental protection. Its main objectives are the improvement of the central government's capability as the largest single construction client; integrating and increasing the use of digital construction processes (e.g. BIM); fostering smarter procurement; promoting fair payment; and reducing carbon emissions from construction, operation and maintenance of public sector buildings and infrastructure[80].

To address the severe housing shortage in the country, as well as the issue of affordability (see Access to housing), the government has introduced a package of housing measures to boost the supply of dwellings and mitigate price increases.

To address the severe housing shortage in the country, as well as the issue of affordability (see Access to housing), the government has introduced a package of housing measures to boost the supply of dwellings and mitigate price increases. It declared that 400,000 affordable housing units would be delivered by 2020-21, including 8,000 accessible homes for the disabled and the elderly[81].

To this end, in 2016, the set-up of a new **Housing Infrastructure Fund** worth GBP 2.3 billion (EUR 2.7 billion) was announced, aiming to support the construction of 100,000 homes by 2021. The government also committed GBP 1.4 billion (EUR 1.6 billion) to help local authorities and housing associations build 40,000 affordable homes for purchase or rent[82]. Moreover, given the particularly acute shortage in Greater London, the government will allocate GBP 3.15 billion (EUR 3.6 billion) to the Greater London Authority for the construction of over 90,000 dwellings by 2021[83].

Furthermore, in order to increase the supply of available building land, the government vouched to release public sector land with capacity for the construction of 160,000 homes[84]. The **Starter Homes Land Fund** was also launched in 2016 for the purpose of increasing land for development and providing affordable homes under the **Starter Homes** programme. With an allocation of GBP 1.2 billion (EUR 1.4 billion), the Fund seeks to stimulate local authorities to remediate brownfield sites and build at least 30,000 starter homes[85]. The green light for the start of construction of thousands of such homes by 30 local authorities was given in early January 2017, allowing first-time buyers aged 23-40 to purchase their first dwelling at a discount of at least 20% below market value. About 71 sites across the country have already received investments under the Fund, in Plymouth, Bury, Basildon, Stockport, Bridgwater, Cinderford, Minehead, Bristol, Trafford, Isle of Wight, South Ribble and Swindon[86]. The Starter Homes programme seeks to provide 200,000 affordable homes by 2020[87]. However, these measures have provided little in the way of a tangible increase in housing supply and the Starter Homes target was dropped in the UK government's Housing White Paper in February 2017[88].

In addition, the government introduced several other affordable home-ownership initiatives for first-time buyers, including four Help to Buy schemes. The **Help to Buy: Isa (Individual Savings Account)**, launched at the end of 2015, offers a tax free savings account and government bonus. First time buyers can deposit a lump sum of GBP 1,200 (EUR 1,400) in the first month and up to GBP 200 (EUR 232) a month in the following ones. The money set aside will earn interest and the government provides a 25% bonus up to GBP 3,000 (EUR 3,482) on the savings accumulated when beneficiaries decide to purchase their first home[89]. Through the Help to Buy: Equity Loan, the Government lends up to 20% 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% cash deposit and a 75% mortgage to make up the rest. No loan fees are charged for the first five years of owning the home, and a 1.75% fee applies to subsequent years. This scheme was recently extended until 2021[90]. For properties to be purchased in London, this programme (known as **London Help to Buy**) provides loans up to 40% of the price of the newly built home[91]. Finally, the **Help to Buy: Shared Ownership** scheme allows buyers to purchase a 25-75% 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)[92]. 135,000 new shared ownership homes will be built up until 2021. The various Help to Buy programmes have already helped over 150,000 people since their launch[93]. However, there are serious questions to be raised as to the medium-term impact of enabling further demand in a consistently undersupplied market and also whether house builders are now dependent upon Help to Buy, which in 2016 Q4 accounted for the sales of 39.8% of new home completions.

The government has also announced the replacement of 100 of the country's most run-down housing estates with attractive and safe homes, as part of its efforts to end poverty and social exclusion. This entails the adoption of a comprehensive approach to housing estate regeneration, which will be supported by a GBP 140 million (EUR 162.3 million) fund[94].

Moreover, government announced a **Transformative Deal** of GBP 170 million (EUR 192.9 million) between government and the construction industry that will invest in the UK economy through delivering better homes and infrastructure. The transformative sector deal will help modernise the industry as well as recruit and train the next generation of high-skilled construction workers, alongside a new National Retraining Scheme. In addition, government is also investing £1.4 million (EUR 1.6 million) in a research project called **"Building for 2050"**. This project collects evidence from three housing developments located in Swansea, Bristol and Manchester with the aim of uncovering the barriers to developing low cost, low carbon housing. It will also test innovative methods of construction and will involve working closely with households throughout the project to track their views, and to report on progress as the government aims to reduce the environmental impact of UK homes by 2050[95].

> Finally, the European Investment Bank (EIB) is a major investor in social housing, having contributed approximately GBP 5.5 billion (EUR 6.4 billion) in this area over its lifetime[96].

In 2016, the EIB signed an agreement to provide a GBP 1 billion loan for new social housing investment across the UK in partnership with the Housing Finance Corporation (THFC). Under the initiative, housing associations will be able to benefit from low-interest loans to invest in new social housing and urban regeneration schemes, with over 20,000 new affordable homes being expected to be built[97]. Nevertheless, the Brexit vote may affect the flow of EU funds to social housing associations in the future, although existing loan funding remains unaffected.

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. Failure to do so is a criminal offence. 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. 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 as bricks, are also common among contractors[98]. The time-limits regarding legal action in relation to construction defects are mainly defined by the Limitation Act 1980. Limitation periods can amount to 6 or 12 years[99]. 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 lost 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, equipment erection mentioned to a few[100]. 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[101].

In order to improve the distribution of risks along the construction supply chain and therefore protect smaller contractors, the **Integrated Project Insurance** – IPI has been introduced, bringing about collective responsibility of all the actors involved in the construction process[102]. Thus, firms participating in a construction project sign up to a new alliancing contract, under which they are jointly liable. The first UK construction contract to use IPI was awarded in 2015 for the construction of the GBP 10 million (EUR 11.6 million) Centre for Advanced Building Technologies at Dudley College in the West Midlands[103].

Building regulations

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 main regulations governing construction activities in England and Wales are the Building Regulations 2010. These cover the construction and extension of buildings, as well as other alteration projects, including replacement of fuse boxes and connected electrics, installation of a fixed air-conditioning system, replacement of windows, doors and roof coverings and installation/replacement of a heating system[104].

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[105]. 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[106]. 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[107]. Consequently, the independent **Review of Building Regulations and Fire Safety** is currently examining the building and fire safety regulatory system with the key focus on residential buildings. The key objective is to make recommendations that will ensure a sufficiently robust regulatory system for the future and to provide further assurance to residents that the complete system is working to ensure the safe buildings[108].

As for health and safety, the most important regulations are the **Construction Design and Management Regulations 2015**. These transpose European directives on the implementation of minimum requirements at temporary and mobile work sites into UK law. The CDM Regulations require a 'construction phase plan' which needs to be kept throughout the duration of the construction work, and a 'health and safety file'. The plan details the health and safety arrangements on site, whereas the health and safety file contains all information related to the built structure, thus defining the use of the development after completion of the works[109].

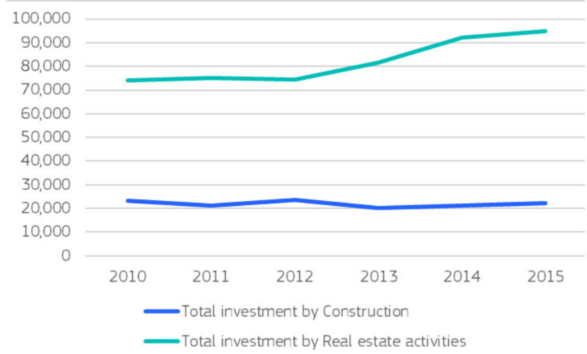
7

Current Status & National Strategy to meet Construction 2020 Objectives

TO 1 - Investment conditions and volumes

Total **investment by the broad construction sector**[110] has generally been fluctuating over the past years (Figure 14). Investment by real estate activities increased by 28.3% between 2010 and 2015[111], reaching the highest value in 2015 but still being 4.7% below the 2008 value. Conversely, investment by the construction sub-sector has been fluctuating over 2010-2015, despite of temporary decline in 2011 and in 2013, totalling EUR 22.2 billion in 2015, which is 5.1% lower than in 2010. In terms of investment in intangible assets, the construction sub-sector invested EUR 615.3 million in intellectual property products in 2015, whereas the real estate sub-sector invested EUR 465.7 million, the highest values since 2000.

Figure 11: Investment by the UK broad construction industry between 2010-2015 (EUR m)



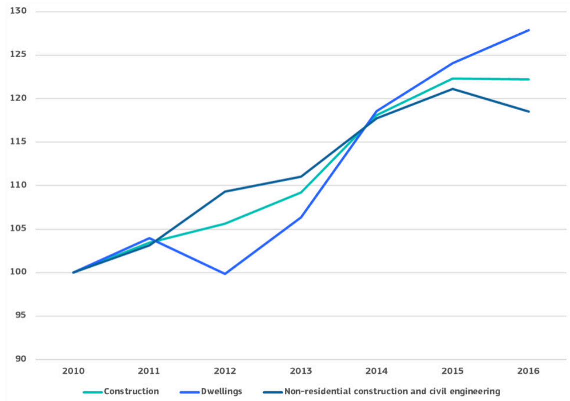
Source: Eurostat, 2017.

Total investment by the broad construction sector evolution 2010-2015 **28.3%**

Total **investment in construction**[112] has been experiencing a recovering trend since 2010, having surpassed the 2010 level by 22.2% in 2016 (Figure 15). The considerable focus of government funds on the construction of new dwellings over the last years has been spurring the revival of the sector, with investment dwellings in 2016 exceeding the 2008 and 2010 levels by 7.9% and 27.9%, respectively. Similarly, investment in non-residential construction and civil engineering went up by 18.5% in 2016, subsequently recovering and being 3.0% above 2008 levels in 2016. In absolute terms, investment in the construction sector totalled EUR 237.7 billion in 2015[113], out of which EUR 94.1 billion was invested in dwellings and EUR 143.6 billion was devoted to non-residential and civil engineering[114].

Total investment in construction sector evolution 2010-2016 **22.2%**

Figure 12: Investment in the UK construction sector between 2010-2016 (2010=100)



Source: AMECO, 2017.

Despite some fluctuations, total inland infrastructure investment as a share of GDP remained relatively constant at 0.7%, both in 2010 and in 2014[115].

However, investment in rail infrastructure in the UK significantly increased by 119.0% between 2010 and 2015, from EUR 6.4 billion to EUR 14.0 billion, soared above the 2008 value. Similarly, the country saw a 39.5% growth in its road infrastructure investment over 2010-2015, from EUR 6.5 billion to EUR 9.0 billion, guaranteeing its position above the 2008 and 2010 levels. In parallel, investment in road maintenance decreased considerably by 13.0% over 2010-2015, from EUR 3.9 billion to EUR 3.4 billion.

Total **household renovation spending** stood at EUR 1.6 billion in 2016 in absolute terms, and at 0.2% of total household disposable income. Since 2010, renovation spending as a share of household disposable income increased by 9.1%.

The government's plans, objectives and priorities for infrastructure investment over the next 5 years are set out in the **National Infrastructure Delivery Plan 2016-2021 (NIDP)**, introduced in March 2016 by the Infrastructure and Projects Authority. The Plan defines key projects, programmes and policy milestones across each infrastructure sector, stressing the importance of building a skilled workforce, reducing costs and encouraging private sector investment in achieving its objectives[116].

The government's plans, objectives and priorities for infrastructure investment over the next 5 years are set out in the **National Infrastructure Delivery Plan 2016-2021 (NIDP)**, introduced in March 2016 by the Infrastructure and Projects Authority. The Plan defines key projects, programmes and policy milestones across each infrastructure sector, stressing the importance of building a skilled workforce, reducing costs and encouraging private sector investment in achieving its objectives[117]. In addition, in 2017 the national government confirmed that the **Housing Infrastructure Fund (HIF)**, which is part of the government's wider National Productivity Investment Fund and possess a budget of GBP 2.3 billion, will help to fund vital physical infrastructure projects, including the building of roads, bridges, energy networks and other utilities. Funding is also available to build new schools, healthcare centres and digital infrastructure to accommodate growing communities and alleviate pressure on public services[118].

The NIDP is accompanied by the new consolidated **National Infrastructure and Construction Pipeline (NICP)**, an assessment of the planned investment in infrastructure across the public and private sectors, released in December 2016[119]. The NICP contains 721 projects and programmes across all sectors of the economy, with a total value of about GBP 502.3 billion (GBP 301.2 billion of which will be invested by 2020-21 and the rest in subsequent years), although the breakdown of spending highlights that spending in the infrastructure and construction pipeline falls each year from 2017/18. Instances of major projects and programmes of the NICP include the Thames Tideway Tunnel, the rollout of smart meters (the Smart Metering Implementation Programme), and upgrading the A14. Namely, 251 projects will be in the transport sector, for a total investment of GBP 138.3 billion (EUR 160.1 billion), 114 in the energy sector (with a value of GBP 206.3 billion, i.e. EUR 239.2 billion), 18 in the housing and regeneration sector (GBP 12.9 billion, i.e. EUR 15 billion) and 25 in science and research (GBP 6.2 billion, i.e. EUR 7.2 billion). Within the transport sector, GBP 54.8 billion will be specifically invested in the development of the High Speed Rail, GBP 38.9 billion in other rail projects and GBP 12.7 billion in roads[120]. About 40% of the NICP projects will be delivered owing to government investment, with the rest relying on private investment. To this end, the government also published a funding and finance supplement to help attract further private sector investment into some of the NICP's most important infrastructure projects[121].

Moreover, the government launched a new **National Productivity Investment Fund (NPIF)** with an allocation of GBP 23 billion (EUR 26.8 billion). Over 2017-2022, the Fund will finance investments in areas that are crucial for productivity, such as housing, research and development (R&D) and economic infrastructure. Namely, the NPIF includes infrastructure investments of over GBP 2.6 billion (EUR 3.0 billion) to improve transport networks and address congestion, GBP 0.7 billion (EUR 0.8 billion) to support the roll out of full-fibre connections and future 5G communications, and GBP 7.2 billion (EUR 8.4 billion) to support the construction of new homes[122].

To facilitate infrastructure financing and delivery, the **UK Guarantees Scheme**, which issues Treasury-backed infrastructure bonds, was extended to at least 2026, so as to boost investor confidence. The scheme has currently issued 9 guarantees, delivering GBP 1.8 billion (EUR 2.1 billion) of Treasury-backed infrastructure bonds and loans, supporting over GBP 4 billion (EUR 4.7 billion) worth of investments. The government is also consulting with the construction sector to envisage the option of construction-only guarantees[123].

Finally, the UK was allocated EUR 234.4 million from the European Regional Development Fund (ERDF) for 2014-2020 for Network Infrastructures in Transport and Energy[124], as well as EUR 59 million and EUR 204 million for energy and transport projects following the first rounds of calls under the Connecting Europe Facility[125].

The **European Investment Bank (EIB)** plays an important role in funding UK infrastructure and already lent EUR 7.8 billion to UK projects in 2015 alone, of which two thirds were for infrastructure[126]. Nevertheless, continued access to any EU funding may be affected by the Brexit vote and is likely to be a significant feature of Brexit negotiations, especially since it is currently unclear what alternatives the government will adopt to counteract potential gaps left by any post-Brexit interruption of EU funding[127].

TO 2 – Skills

The UK is currently implementing reforms to its **Vocational Education and Training (VET)** system, in order to address inequalities between the traditional academic and VET routes, as well as to better prepare young people enrolled in vocational education for the world of work.

The UK is currently implementing reforms to its **Vocational Education and Training (VET)** system, in order to address inequalities between the traditional academic and VET routes, as well as to better prepare young people enrolled in vocational education for the world of work. Indeed, the proportion of students involved in VET in 2015 stood at 40.1%, below the EU average of 47.3%. However, the employment rate of recent VET graduates in 2016 was 77%, which was slightly higher than the EU average of 75%[128]. The government is therefore taking action to increase the transparency and decrease the complexity of technical and professional routes, streamlining the VET system and qualifications, and creating 15 routes across technical education. By 2020, the government aims to create 3 million apprenticeship starts[129]. To fund this, it will be introducing the **Apprenticeship Levy**, which will replace all taxpayer funding of apprenticeships for companies of all sizes. It starts from April 2017 at a rate of 0.5% of an employer's annual wage bill, and will be paid by all employers with a payroll above GBP 3 million (EUR 3.5 million)[130].

The skill gap and labour shortage in the UK construction sector constitute a serious threat to its growth prospects. This is recognised in the latest **Government Construction Strategy 2016-2020** (See Policy schemes), which aims to strengthen the skill base in the sector, particularly with regard to digital skills, and support 20,000 apprenticeships until 2020[131]. 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[132]. Several initiatives have been introduced to this end.

The **Construction Industry Training Board (CITB)** is a major actor in developing a skilled construction workforce. It provides a comprehensive range of services to companies and their employees. For instance, the **CITB 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[133]. 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[134].

An instance of cooperation between private actors and public bodies in the skilling of the workforce includes the **Entrepreneurship Foundation**, set up by Saint-Gobain in association with CITB, aiming to provide training on the management of a business, as well as on the utilisation of the latest construction techniques and materials[135].

The **Construction Youth Trust**, a charity working with young people to help them access employment opportunities in the construction industry, offers various training programmes. **Budding Builders** is a free course providing 14-30-year-olds with entry-level construction training, employability and soft skill support and progression routes into the construction sector. Available training courses include all construction trades, such as bricklaying, plastering, carpentry, tiling, plumbing, painting and decorating, as well as health and safety. Due to the programme's strong links with the industry, participants can progress with apprenticeships or full employment upon completion of the course[136]. **Budding Brunels** is a 3-day course aimed at final year high school students, giving them the chance to find out more about various professional roles in construction, such as project manager and surveyor[137].

Another initiative **SOAR Build** is a joint venture partnership between the public and private sectors specialising in community regeneration. The aim of the initiative is to support the construction industry though local employment and in this way to raise the aspiration of youth to engage in community affairs[138].

The **Chartered Institute of Building (CIOB)** is also active in attracting a younger generation of construction professionals. It launched the **Craft Your Future initiative**, 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. Craft Your Future is structured into lessons, where teams of students have to design, plan, collaborate and build solutions to develop a sustainable future for the citizens of a fictitious city. The lessons cover various areas of construction, namely maintenance, restoration, new build and refurbishment. Exercises also include real life scenarios, such as the restoration of Battersea Power Station[139].

The **Construction Skills Certificate Scheme (CSCS)** was created by industry partners as a means of certifying the skills of construction professionals. The scheme issues CSCS cards to provide proof that all workers on construction sites have the required training and qualifications for the type of work they perform. There are numerous types of CSCS cards, depending on the specific occupation of the applicant. One such card, the Construction Related Occupation (CRO), was introduced for those occupations for which there are no nationally recognised qualifications[140]. Because no formal qualifications are required to obtain it, the CRO was being utilised by workers as a way to enter the construction site without the need and commitment to be correctly trained and qualified[141]. For this reason, the card is being withdrawn, so as to push more workers to register for nationally recognised qualifications and obtain a Skilled CSCS Card instead. Ultimately, this action aims to raise the overall level of qualification and skills of the construction workforce and improve standards and safety on UK construction sites.

Finally, in order to tackle mismatch and labour shortage in construction, through recently signed **Sector Deal** the construction industry will be working with government to produce a **Construction Skills Strategy** aimed at retaining and retraining a workforce that is fit for the future and able to deliver on the government's infrastructure and housing ambitions. It will focus on upskilling construction workers and retraining them in new valuable skills, that will help ensure workers have the right skills to match employer's needs. The government set out its ambition to make the UK's technical education system as prestigious as its higher education. In the recently published T level action plan, government noted that construction will be one of the first of 4 T levels to be taught from 2020[142].

TO 3 - Resource efficiency / Sustainable construction

> Energy saving measures and targets in the UK are detailed in the **National Energy Efficiency Action Plan (NEEAP)**, which indicates how the government will comply with the requirements of the Energy Efficiency Directive 2012/27/EU.

The UK's target was set at 129.2 million tonnes of oil equivalent (mtoe) for final energy consumption, representing a 20% reduction in primary energy consumption and an 18% reduction in final energy consumption relative to 2007[143]. In addition, the **Sustainable Development Commission (SDC)** launched in 2017 a free online tool for evaluating the sustainability of a proposed development of a construction project, which has to be in the line of the guidelines of sustainability under **National Planning Policy Framework (NPPF).** This tool has been very accessible and transparent about sustainability objectives that is used by developers and community groups alike[144].

The main instrument to promote energy efficiency in UK homes is the **Energy Company Obligation (ECO)**, a programme to deliver energy efficiency measures (namely insulation and installation of energy efficient heating systems) to households across Great Britain, in order 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[145]:

• 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.

The first phase of ECO was proceeded between 2013 and March 2015. In this phase, a total of 593,042 measures and carbon savings of 18.3 MtCO2 were achieved under CERO. 382,982 measures and 9.9 MtCO2 were delivered under CSCO and 433,657 measures (and cost savings of GBP 5.2 billion) under HHCRO[146]. The second phase of ECO obligation between April 2013 and April 2017 resulted in estimated cost savings on energy bills amounting to GBP 7.8 billion (EUR 9.2 billion)[147]. An extension to the obligation period for ECO2 was established under The Electricity and Gas (Energy Company Obligation) (Amendment) Order and runs up to September 2018[148].

The government also announced plans for a new supplier obligation to run for 5 years as of April 2017, at an estimated level of GBP 640 million (EUR 749 million) per year, focusing on carbon reduction and fuel poverty[149].

Energy efficiency in the building sector is also promoted through the progressive tightening of the requirements of the **UK Building Regulations**. Thus, average reductions of 6% in CO2 emissions for new homes and 9% for new non-domestic buildings are required as of 2014. These stricter provisions were meant to run in parallel to the introduction of the **Zero Carbon Homes Standard** in 2016, stipulating that all new homes should be 'zero carbon' as of 2016[150]. Nevertheless, this target and related regulations were dropped in July 2015[151]. In response to the cancellation of these measures, the House of Lords proposed an amendment to the Housing and Planning Bill 2015-2016, requiring the government to put in place regulations for a carbon compliance standard for new homes by 2018. Nevertheless, the House of Commons dismissed it in May 2016 due to the fact that it could slow down or prevent the development of new homes, and replaced it with a commitment to review minimum energy performance requirements under the Building Regulations[152].

Nevertheless, **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, for instance by stimulating the design of glazed areas to improve daylighting; specifying the use of materials with low emission profiles; and carrying out thermal modelling to ensure that the designed energy and thermal performance of the building is achieved in practice[153]. BREEAM is developed and managed by the Building Research Establishment (BRE), jointly owned by industry bodies and is being successfully adopted worldwide, with over 556,600 BREEAM-certified developments globally, and almost 2,260,100 buildings registered for assessment since its launch in 1990[154].

The **Green Deal (GD) scheme**, first introduced in 2013, used to help households and businesses install energy efficiency technologies in their properties with no upfront costs. These were instead repaid through the energy bills. In parallel, the Green Deal Home Improvement Fund (GDHIF) was implemented to assist homeowners install home improvement measures by issuing vouchers. Funding for both was discontinued in July 2015, due to the low number of loans issued and interventions carried out[155]. Only 20,677 and 41,593 energy efficiency measures have been installed under the GD and GDHIF since their launch, respectively[156]. Consumer take-up was very low due to a lack of awareness of the scheme, lack of consumer interest in energy-efficiency retrofit works, concerns regarding the high interest on the loans available under the Green Deal and uncertainty regarding whether savings in energy bills would provide the offset the cost of the works.

The NFB also expressed a number of reservations towards the subsidies offered within the Green Deal. Firstly, regarding the planning, the assessment conducted thanks to the Green Deal did not always propose the correct order of works. Secondly, the measure did not necessarily benefit construction companies and/or reward good contractors, since it was the assessor, not the client, who decided which company would carry out the works. Furthermore, since the programme was discontinued after two years, investors who factored it into their business models in terms of energy efficiency are now forced to revise them. Finally, this discontinuity created a feeling of uncertainty about the policy environment among investors. Moreover, the VAT reduction on energy efficiency works offered within the Green Deal was deemed incompatible with the EU VAT Directive during a ruling by the European Court of Justice (ECJ)[157], thus creating further uncertainty among investors.

TO 4 - Single Market

> The UK reports a good performance with respect to the metrics of the **EU Single Market Scoreboard**, particularly in terms of Internal Market Information System, Public Procurement and Transposition of law, performing above the EU average.

The UK reports a good performance with respect to the metrics of the **EU Single Market Scoreboard**, particularly in terms of Internal Market Information System, Public Procurement and Transposition of law, performing above the EU average. In terms of Public procurement, the system is one of the most efficient and transparent in the EU with a high take-up of e-procurement (31%). National government focuses on increasing the proportion of goods and services purchased from SMEs, from the current 27% to 33%[158]. Nevertheless, the UK is the Member State with the lowest trade integration in the single market for goods and the second lowest trade integration for services. In 2015, trade integration for services increased above EU average, trade integration for goods continued to decrease strongly[159].

In terms of cross-border provision of construction services, the UK is considered an example of good practice, since it has not put in place any horizontal authorisation schemes, using instead its system of building inspections as a quality and safety control mechanism. This contributes to creating a much less restrictive regulatory environment for temporary cross-border service providers, and the country is therefore reported to offer the highest level of compliance with the EU Services Directive[160].

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[161].

Nevertheless, in light of the recent Brexit vote, one of the key repercussions on the UK construction sector would be linked to the country leaving the EU Single Market. The restrictions regarding the free movement of migrant labourers from the EU may lead to a further decline in the number of skilled labourers in construction and architectural activities. This is a significant issue for the sector, since about 13% of the total construction workforce is foreign-born, mainly coming from Eastern Europe. This issue is particularly felt in London, where people born overseas account for 45% of London's construction workforce, including 27% from the rest of the EU. Namely the largest foreign contributors to London's construction workforce include Romania (29,000 workers), Poland (27,000), Lithuania (11,000) and India (10,000)[162]. 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 60-70% of employment on-site in construction in London is from abroad. A fall in their numbers could therefore add extra pressure on the already limited pool of qualified workers, potentially driving up wages and thus increasing construction costs[163]. Moreover, projects may be delayed and overrun due to the lack of skilled labour on site, particularly large-scale infrastructure projects[164]. This could be exacerbated by the age demographic issue in the UK-born workforce. The largest number of UK born construction workers in 2016 Q3 were in the 45-49 and 50-54 age demographic, who may retire in the next 10 years, leading to a potential loss of up to 500,000 UK-born workers. In addition, it is not merely the number of those lost to the industry but also the experience lost[165].

Similarly, Brexit could negatively affect the supply of construction products and services to/from the EU. Namely, should the WTO model be adopted, the EU's Common Tariffs would apply to exports from the UK to the EU. This is likely to push up the prices of UK goods and services and reduce EU demand. In addition, it is not merely a potential tariff that is of concern. For many construction products that are imported, business models have developed with few stocks and little capacity for stocks. After the UK has left the EU, goods may need to be stopped at the border and checked. Delivery drivers may also need to be checked. The current business model does not allow for this. On the other hand, although the UK's access to the **EU Digital Single Market (DSM)** will be affected by post-Brexit, there is a lack of clarity about how specific issues will be impinged according to the European Scrutiny Committee[166]. 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[167]. Likewise, there is uncertainty as to whether UK construction firms would still be allowed to compete in EU tenders for public contracts after the UK leaves the EU[168].

TO 5 - International competitiveness

> The UK ranks 7th out of 137 economies in the 2017-2018 Global Competitiveness Index, the best position over the last years[169].

Its performance in terms of the **internationalisation of its SMEs** has remained the same as last year and generally above the EU average, with having the third highest percentage of SMEs that export outside of the EU (7%), compared to the EU average (4.3%). The UK is one of eight top EU performers in advance rulings, which simplify export procedures for businesses[170].

The aim to foster the internationalisation of the UK construction sector is stated in the **Construction 2025 Industrial Strategy**, which through the cooperation between industry and the government, seeks to achieve a 50% reduction in the trade gap between total exports and total imports for construction products and materials. Thus, focus is to be put on the identification of global trade opportunities for UK professional services, contracting and product manufacturing[171].

To this end, the government launched the **Exporting is Great** website, which is seen as a key tool to develop global partnerships and promote UK construction. The platform provides centralised information and guidance for new, occasional and frequent exporters, and allows companies to showcase their products to overseas clients and identify the best online marketplaces[172]. It also provides real-time export opportunities across all sectors and countries. The programme is set to run for 5 years, aiming to get 100,000 additional companies exporting by 2020[173].

Furthermore, **UK Export Finance (UKEF)**, the UK's export credit agency, plays an important role in supporting UK firms to export and invest overseas, through the provision of guarantees, insurance and reinsurance against loss. For instance, the **Export Insurance Policy** insures exporters against the risk of non-payment from foreign clients or of being unable to recover the costs incurred during the project. Such risks include insolvency of the client, as well as political, economic or administrative events outside the UK that prevent payments from the buyer or that affect the performance of the export contract. Under the programme, beneficiaries can obtain up to 95% cover of such risks[174].

Between March 2015 and March 2016, UKEF provided more than GBP 514 million (EUR 603 million) in support for construction industry exports[175]. This included two direct loans (one amounting to USD 317.9 million and the other USD 177 million, i.e. about EUR 296 million and EUR 165 million, respectively) to finance construction projects (civil engineering, residential and commercial) carried out by UK construction companies in Dubai[176]. Another success story is the UKEF support of a UK construction SME that won a contract to design, build and equip seven district hospitals in Ghana. Through a guarantee on the loan to the local client, UKEF has enabled the company to lead a consortium of 50 UK construction SMEs working on the project[177].

Moreover, the **Department for International Trade (DIT)** helps UK companies sell products and services to the overseas construction sector by organising workshops and seminars and taking part in international trade fairs and trade missions. It also provides free international export sale leads from its worldwide network[178]. Additional resources will be provided to strengthen trade policy capability in the DIT, amounting to GBP 26 million (EUR 30.5 million) a year by 2019-2020[179]. Finally, the Department for International Trade of UK government launched a new industry partnership in July 2017 to boost construction exports and help UK companies to secure major international contracts. **Infrastructure Exports: UK (IE:UK)** will gather companies of all sizes to bid for infrastructure contracts abroad as a single 'Team UK' consortia, to deliver complex projects by combining their expertise[180].

8
Outlook

The UK economy has been on the recovery path after the crisis, with growth being expected to continue in the coming years, although at a moderate pace due to uncertainty over the future relationship between the UK and EU.

Number of workers employed in the broad construction sector evolution forecast 2010-2018 ↑ 1.0 %

Number of enterprises in the broad construction sector evolution forecast 2016-2018 ↑ 1.1%

The UK economy has been on the recovery path after the crisis, with growth being expected to continue in the coming years, although at a moderate pace due to uncertainty over the future relationship between the UK and EU. Its **GDP** is forecast to increase by 1.3% in 2018 compared to 2016, reaching GBP 1,821 billion (EUR 2,052.6 billion) driven by largely by a decline in the growth of private consumption and a fall in growth in gross fixed capital formation (GFCF). Prospects for the construction sector are bleak in 2018, with growth projections being revised downwards in the aftermath of Brexit as investment plans are put on hold due to economic uncertainty in coming years. Nevertheless, Brexit is not likely to result in a recession for the construction sector, and investment is set to pick up again, although not buoyantly. There will be some support for investments in residential, infrastructure and institutional building projects. Thus, growth in the construction sector is forecast at 1.7% for 2018, 2.2% for 2019 and 2.5% for 2020[181].

GDP evolution forecast 2016-2018 ↑ 1.3 %

In parallel, the number of workers **employed** in the broad construction sector is projected to increase only by 1.0% in 2018 relative to 2016, reaching 2.4 million people. Similarly, the number of **enterprises** in the broad construction sector is forecast to grow by 1.1% in 2018 relative to 2016, reaching 454,600. The **value added** of the broad construction sector is also expected to experience a modest growth, being projected to rise by 1.0% in 2018 compared to 2016, reaching EUR 218.6 billion. These developments will be accompanied by an increase in **turnover**, expected to grow by 0.2% in 2018 relative to 2016, reaching EUR 490.8 billion.

Residential construction has been the main driver of the UK construction sector with the volume of orders and dwelling starts and completions having enjoyed a revival. Nevertheless, the outlook for 2018 is less optimistic. Slowing order books and increasing prices for building materials are expected, whilst long-term availability of skilled labour remains precarious. A loss of nearly 215,000 workers from housebuilding and construction has been predicted by 2020, should the point-based system in place for non-EU migrants be extended to EU workers[182]. These factors, together with reduced demand for property from overseas investors, could lead to a decline in the amount of dwellings built, with some estimates pointing to a fall in housing started to 134,000 units in 2017[183]. Despite demand far outstripping supply, house prices are also expected to rise more moderately, with projections suggesting smaller increases between 1-3%. This trend is also foreseen for the luxury residential market, with no growth at all being forecast for high-end London[184]. Overall, growth in the residential sector is projected at 2.0% in 2018 and 2019[185].

As for **non-residential construction**, its growth has been limited and weak as the Brexit vote is likely to further worsen this situation, significantly dragging on overall construction industry growth. The Brexit negotiations is continuing to cause businesses to be cautious when investing in expanded capacity. Namely, office construction could be significantly slowed down, with up to half of planned developments in central London at risk of being postponed or cancelled. Across the country, the fall in office construction is forecast at 12.0% in 2018 and a further 5.0% in 2019, with office prices declining by 1% in 2018. A slow revival is expected for the following years, with price increases of 1.1% in 2019, 2.5% in 2020 and 3.2% in 2021, corresponding to an average annual growth rate of 1.6% over 2017-2021. A similar trend is predicted for retail real estate, which will see its prices decline by over 3.5% in 2017, subsequently picking up to record an increase of over 2% by 2021[186]. However, retail construction is expected to decline by 2% in 2018, partially due to the long-term trend away from the high street towards internet shopping[187]. Nevertheless, the government programs such as the **National Infrastructure Plan (NIP), Priority School Building Program (PSBP) and National Health Service (NHS)** program are forecast to support industry growth. The government's plan to build affordable homes for the low-income population, a renovation program for old school buildings and the replacement of aging infrastructure will be key support to this matter.

Prospects for the civil engineering sector are brighter, due to the announced pipeline of infrastructure projects worth over GBP 500 million (see TO 1 - Investment conditions and volumes). Positive growth is expected for the airport and rail infrastructure sectors, with planned upgrades and refurbishments leading to an annual average growth of 8% until 2019. Similarly, growth in the energy infrastructure sector, and especially the power plant and transmission grids infrastructure segment, is foreseen at 7.0% in 2017, 14.0% in 2018 and 20.0% in 2019, as main works such as Hinkley Point C get under way. Construction of roads is expected to stall in 2017 but resume its growth in 2018 and 2019 (+5%). Overall, output in the infrastructure sector is expected to increase by 11.1% in 2018 and 12.8% in 2019, being one of the key drivers of growth for the construction industry[188]. Nevertheless, the uncertainty associated with the UK's ability to deliver on major infrastructure projects and continue accessing EU funds constitutes a significant risk to the development of both the infrastructure segment and of the construction sector as a whole.

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1 Please note that this 2016 data is a nowcast - please refer to the methodology notes for further details.

2 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.

3 Please note that this 2016 data is a nowcast - please refer to the methodology notes for further details.

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

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

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