

Construction workers: skills opportunities and challenges (2016)


12/2016  Construction, Construction, Trades workers, Construction workers, EU, Skills opportunities and challenges in occupations

Table of contents



Summary

Key facts:

Who are they?

Where are they mostly in demand?

What are the trends for the future?
2

Which drivers of change will affect their skills?

How can these skill needs be met?

References

Summary

Construction, or building and related trades workers (excluding electricians) fulfil a variety of different roles in the demolition, construction, renovation and maintenance of buildings.

Key facts:

- The employment level of building and related trades workers across sectors is expected to spike by 3%,

recovering from an equal decrease between 2005–2015.

- The five key skills for building and related trades workers (excluding electricians) are **job-specific skills, teamwork, problem solving, learning** and **communication**.
- They are a **shortage** occupation in five EU Member States, while seven EU countries report them as a **surplus** occupation, mainly those where construction sector suffered the most after the financial crisis of 2008.
- The majority of building and related trades workers are traditionally employed in construction; a sector that suffered significantly from the 2008 economic crisis.
- Two thirds of building and related trades workers held medium level qualifications in 2015, a trend that is expected to hold by 2025.

Who are they?

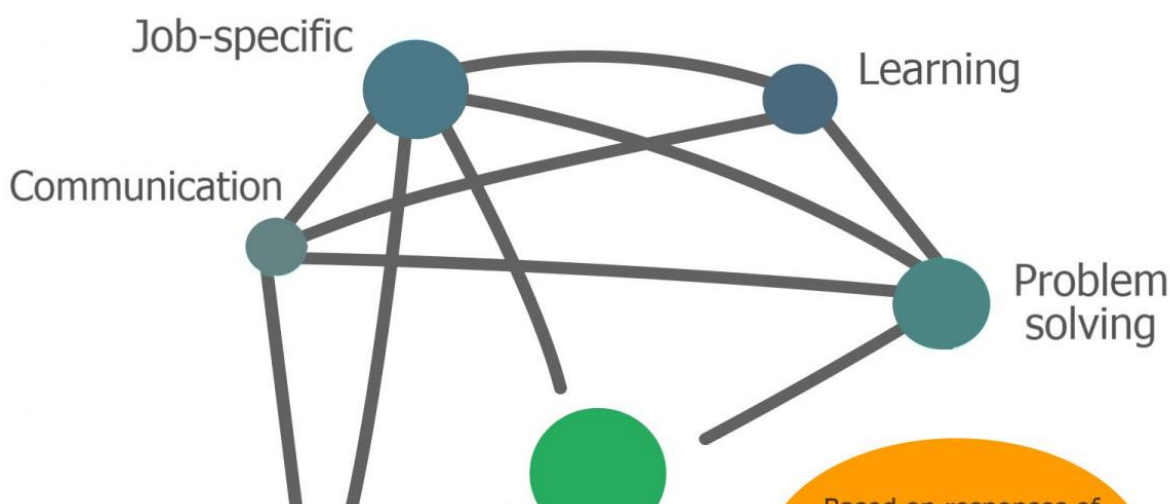
Building and related trades workers (excluding electricians)¹ fulfil a variety of different roles in the demolition, construction, renovation and maintenance of buildings. Examples of occupations within this group include: house builders, bricklayers, concrete placers, roofers, insulation workers, glaziers, plumbers and painters. A range of specialised skills are required, which are heavily dependent upon the specific job tasks carried out.

What skills do they need?

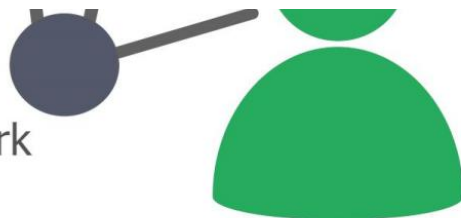
According to Cedefop's [European skills and jobs survey \(ESJS\)](#), the key 5 skills for building and related trades workers (excluding electricians) are **job-specific skills, teamwork, problem solving, learning** and **communication**. A range of specialised skills that are required are heavily dependent upon the specific job tasks carried out.

These skills could support employees in this occupation to also tackle anticipated future skill challenges (see drivers of change below).

Figure 1: Most important skills required for building and related trades workers (excluding electricians)



Teamwork



Based on responses of people working in this occupation on which skills they perceive as the most relevant for their job.

From Cedefop's European skills and jobs survey

Where are they mostly in demand?

The labour market dynamics for this occupation differ across EU Member States:

Figure 2: Shortages and surpluses for building and related trades workers (excluding electricians) across the EU

- Shortage
- Surplus



According to [Cedefop](#), building and related trades workers (excluding electricians) are highly demanded (i.e. they are in [shortage](#)) in Denmark, Croatia, Malta, the Netherlands and the United Kingdom. On the other hand, a [surplus](#) in this occupation was reported in Ireland, Greece, Spain, Italy, Cyprus, Portugal and Slovenia.

What are the trends for the future? ²

The employment level of building and related trades workers across sectors is expected to spike by 3%, recovering from an equal decrease between 2005–2015. This increase will be mainly supported by replacement demand³, but also new job openings (about one in 10 job openings in 2025).

The majority of building and related trades workers are traditionally employed in [construction](#); a sector that suffered significantly from the 2008 economic crisis. In future years, employment of these workers in construction is not expected to grow, also affected by automation and technologies like off-site manufacturing. Some employment growth of this occupation is expected in related sectors, such as [real estate activities](#) or architectural & engineering activities.

Two thirds of building and related trades workers held medium level qualifications in 2015, a trend that is expected to hold by 2025. During the same period the share of highly qualified workers in this occupational group is expected to grow, on the expense of low qualification holders.

More information on employment trends and skills in this occupation can be found [here](#).

Which drivers of change will affect their skills?

The growing need for higher-level skills can be attributed to a number of key drivers. Despite the fact that the workers within this group carry out a variety of roles, these common drivers will inevitably impact upon their work, although to different degrees.

- **Technological advances** bring about a number of emerging new practices, which are likely to change the landscape of the construction sector. Workers in building and related trades must possess sufficient qualifications and take up professional development opportunities to use new IT-based, or automated, equipment, such as remote controlled vehicles and smart tools ^{4 5}. One key IT-based technology that is expanding its influence throughout the industry is Building Information Modelling (BIM). BIM is used to design and manage construction projects at all stages of the production process and is also used to inform project workers⁶.
- **Use and combination of materials** in building construction is also evolving along with innovation in the sector; consequently, this increases the demand for specific skills. For example the Very Tall Building (VTB) construction will become more common in Europe, rising the demand for specialised skills such

as extreme construction engineering techniques or new ways of crane building⁷.

“Working in a lean [production] environment and preparing a building for prefabrication during design means working closely with architects, engineers, construction professionals, and trade subcontractors at the conceptual design stage and throughout the entire building process. Whether your team shares an integrated delivery contract or not, work processes will need to be more collaborative than the traditional process of handing over contract documents at specific points during design and then leaving the rest up to the construction team.

It also requires project team members to think about things beyond their individual specialties, such as diversity of electrical and mechanical loads, airflow of the building, and how building parts fit together”.

Source: [LineShapeSpace](#)

- As projects grow in size, **off-site manufacturing** becomes more important. Many parts of a structure can now be built in construction factories before being transported. This means that there's less need for tradespeople like bricklayers and plasterers on-site, and that they will need to adapt their ways of working to factory situations with new qualifications.
- Aside from mastering new technologies, building and related trades workers will require **collaborative skills** and the ability to work in better-connected interdisciplinary teams. **Technical skills** are also very important in off-site building and construction roles, such as computer aided design or computer aided manufacturing.
- **Climate change challenges and the need for greater energy efficiency** in the EU have raised the development of “green” buildings and sustainable waste management in the EU policy agenda⁸. New practices have already been implemented as a result of technological advances, and in response to regulatory changes related to material waste and pollutant emissions⁹. As the reduction pollutants in construction processes becomes a greater priority, new materials, methods and technology will be introduced¹⁰. Current and future workers will need to have relevant skills to work with new and “green” material and techniques¹¹. Some building and related trades workers should also possess the mathematical and analytical acumen to measure and establish strategies and targets required to minimise waste production in their company's operations¹².
- **The energy sector** will also be a major driver of demand for specific skill sets of construction workers. With its aging energy infrastructure and its strong decarbonisation focus, Europe will need major investments to build, retrofit or decommission its power plants¹³. Construction workers' skills will be of major importance: as most of Europe's power plants have been built decades ago, know-how related to steel-fixing or building of large concrete structures that require specific endurance and durability are often not easy to find.
- With increasing levels of **urbanisation** being experienced throughout Europe, a variety of challenges

will be faced as population density increases and demand for space and resources follows suit. As a result, retrofitting and building renovation will become more common practice¹⁴. During recent years, retrofitting regards a significant share of the value-added in the EU building sector, with the market activity strongest in France, Germany and the UK¹⁵. Builders and related trades workers need technical expertise both in retrofitting and renovation, along with skills in new practices and methods, including offsite production and prefabricated building elements.

How can these skill needs be met?

Owing to the high priority given to environmental sustainability, particularly in the construction sector, professional development of workers in this occupational group is a key to keeping abreast with emerging practices¹⁶.

The European Commission has identified the need to attract more young people into construction-relevant occupations; and offer them high quality training to meet the rising demand for more highly skilled workers. Thus, under the European Alliance for Apprenticeships umbrella, apprenticeships “for the construction sector of tomorrow”¹⁷ are being supported through the collaboration with firms and education institutions.

While many, more traditional, training programmes have been made available to workers within this occupational group, many builders and related trades workers find it difficult to juggle work and training commitments, which can be vital to remaining competitive in the labour market and developing the skills required to meet changing activities in the sector. With the growing popularity of “anytime anywhere” training services, builders and related trades workers can find a range of resources online to develop their professional expertise.

Other innovative means of providing this hands-on training, in an on-site environment, may prove successful in the future. Mobile training centres could provide an effective means by which to provide training that is contextualised and relevant to builders’ current tasks within their own occupations and prepare them for any emerging challenges.

The EU has established a variety of initiatives on upgrading the workers’ skills. One such project is the BUILD UP Skills project: a platform through which Member States can share their best practice and case studies of success in their respective construction industries, focusing particularly on policy that will promote the use of low carbon infrastructure, sustainable housing and buildings that incorporate new technologies¹⁸.

Since well-qualified construction workers are one of the key factors for achieving significant contribution towards the 2020 energy efficiency objectives, in both the national and EU levels, the “The Project **“BUILD UP Skills - Greece”** (BUS-GR) focusing on and addressing the specific Greek needs – aims to facilitate the Building sector Workforce Training and Qualification by agreeing on and elaborating a National Qualification Roadmap. The specific objectives of BUS-GR are to:

form a national platform on Energy Efficiency and RES related training programs and qualification schemes for the building construction sector workers; identify and quantify the need for qualified workforce in Greece in order to describe the current status quo; design and set up a national training and qualification strategy (the Roadmap) up to 2020 for the achievement of national sustainable energy goals; ensure the roadmap adoption by all relevant stakeholders in Greece via the appropriate endorsement activities."

Source: <http://www.buildupskills.eu/national-projects/greece> (accessed 27/05/2016)

References

- [1] Defined as ILO ISCO 08 group 71 Building and related trades workers, excluding electricians. ILO (2012) [International Standard Classification of Occupations ISCO-08](#).
- [2] 2016 Cedefop forecast.
- [3] The need to replace workers leaving a profession for various reasons, such as retirement. For more information on replacement demand and how it drives employment across sectors, can be found on the Skills Panorama [here](#).
- [4] UK Commission for Employment and Skills 2012, *Sector skills insights: Construction*.
- [5] Tatum, R 2015, "Smart-Building Tools for High-Performance Buildings", *Facilitiesnet*, May 2015.
- [6] HM Government 2015, *Digital Built Britain- Level 3 Building Information Modelling - Strategic Plan*.
- [7] [New and emerging skills in the construction sector](#), *Goconstruct*, accessed 3 June 2016.
- [8] Renewable energy and energy efficiency is one of the focus areas of the Investment Plan of the European Commission. See European Commission 2014, [The investment plan for Europe](#).
- [9] United Nations Environment programme 2014, *Greening the building supply again*.
- [10] Gieseckam, J, Barrett, R J & Taylor, P 2016, "[Construction sector views on low carbon building materials](#)", *Building Research & Information*, vol. 44, no 4, pp. 423-444, accessed 3 June 2016.
- [11] UK Commission for Employment and Skills 2013, *Technology and skills in the construction industry*.
- [12] European Network of Construction Companies for Research and Development 2013, *Construction Waste Measurement Protocol, A guide to measuring and reporting waste from construction activities*.

[13] Newman, N 2013, "[The Challenges of European Energy Infrastructure Finance](#)", *Cornerstone*, accessed 3 June 2016.

[14] Buildings Performance Institute Europe 2016, *Driving transformational change in the construction value chain*.

[15] Ibid.

[16] Giesekam, J, Barrett, R J & Taylor, P 2016, "[Construction sector views on low carbon building materials](#)", *Building Research & Information*, vol. 44, no 4, pp. 423-444, accessed 3 June 2016.

[17] European Commission, *Apprenticeships for the construction industry of tomorrow*, accessed 3 June 2016.

[18] [Build up skills](#), accessed 3 June 2016.

© CEDEFOP 2019

POWERED BY:

