Analysis of the construction industry in the Netherlands
October 2025

Can the construction industry adapt for the future of the Dutch economy?

To become future-proof, the construction industry needs to boost productivity, decarbonise and prepare to deliver on rising infrastructure needs, argue Marjon Scholten, PwC's construction sector expert, and chief economist Barbara Baarsma.

In March 2025 we published a study on 'Future-Proofing the Dutch Economy'. This report examines fifteen industries, part of the commercial sector, over the period 1995-2023 from three different perspectives: their position in the economy, their economic contribution, and their reliance on scarce production factors.

Centrality: The first 'lens' relates to the extent to which an industry is connected to other industries. Central industries have many trade relationships with other industries and therefore hold a strategically important position in the economy. If they experience positive or negative shocks, it also has a disproportionate impact on the rest of the economy.

Economic importance: The second lens examines the fifteen industries based on their economic importance: What do they

contribute to the GDP? What do they spend on research and development (R&D)? How high is their labour productivity growth?

Dependence on scarce production factors: The third lens looks at the extent to which the different industries rely on scarce resources such as labour, capital, environment (greenhouse gases, nitrogen, and water) and physical space.

The industries that are most central, that make a significant contribution to the economy, and that also have a limited reliance on scarce production factors are the industries with the most potential for sustainable growth.

Deep dive in construction industry

In this study we take a deep dive into the construction industry. The construction industry is an important industry in the Netherlands, with more than 254,000 companies (including the self-employed)[1]. It includes the development and construction of buildings projects, civil engineering and specialised construction activities.[2] We take a broad view and consider the three lenses that we used in 'Future-Proofing the Dutch Economy' study: centrality, economic importance and dependence on scarce production factors to look at the construction industry. Can the construction industry adapt along these lines and become future-proof?

Figure 1: The overall picture: in 2023, the construction industry scored relatively well compared to other sectors but ranked particularly low in terms of R&D share.

Industry	Centrality score	GDP share	Labour productivity growth	R&D share	Scarce production factors index	Sum of all factors
High/medium-high tech manufacturing (C3)	100.0	42.5	71.2	100.0	49.3	363.0
Other specialised business services (M)	33.6	70.1	72.9	40.9	84.6	302.1
Wholesale and retail trade (G)	42.2	100.0	66.1	11.9	54.4	274.6
Construction (F)	**76.4**	**35.6**	**72.9**	**1.7**	**86.4**	**273.0**
Low tech manufacturing (C1)	38.7	27.2	100.0	8.4	79.0	253.3
Information and communication (J)	25.0	34.1	64.4	33.0	86.2	242.7
Renting and other business support (N)	13.5	53.4	81.4	2.6	67.6	218.5
Financial institutions (K)	12.7	38.1	55.9	8.4	89.2	204.3
Accommodation and food serving (I)	6.3	11.1	83.1	0.0	100.0	200.5
Medium-low tech manufacturing (C2)	30.1	12.4	50.8	5.8	71.7	170.8
Water supply and waste management (E)	1.5	0.0	64.4	0.4	85.9	152.2
Transportation and storage (H)	23.3	30.9	54.2	2.4	16.7	127.5
Energy supply (D)	1.8	11.6	76.3	1.0	23.7	114.4
Agriculture, forestry and fishing (A)	9.2	10.7	83.1	5.1	0.0	108.1
Mining and quarrying (B)	0.0	4.7	0.0	0.3	96.9	101.9

Note: All scores, except for the sum of all scores, are min-max normalised and scaled to be from 0 to 100.

Source: PwC (2025): Future-Proofing the Dutch Economy. Key Industries for Resilient Growth.

[1] CBS: Business demography, data for 2022.
[2] CBS: Construction industry; turnover change, index 2021=100.

2nd

Construction' ranks as the 2nd most central industry

Conclusion

To summarise the perspective of the three lenses, the construction industry is important to the Dutch economy because of its central role in many production processes and its economic size. However, the industry struggles with low R&D spending, sluggish labour productivity growth and relatively high reliance on scarce production factors, especially on labour, greenhouse gas and acid-equivalent emissions and physical space.

Nevertheless, it serves a meaningful societal function to tackle the housing crisis, the energy transition, climate change, outdated Dutch infrastructure and strengthening the defence sector.

Centrality: the construction industry is the second most central to the production flows of the Dutch economy

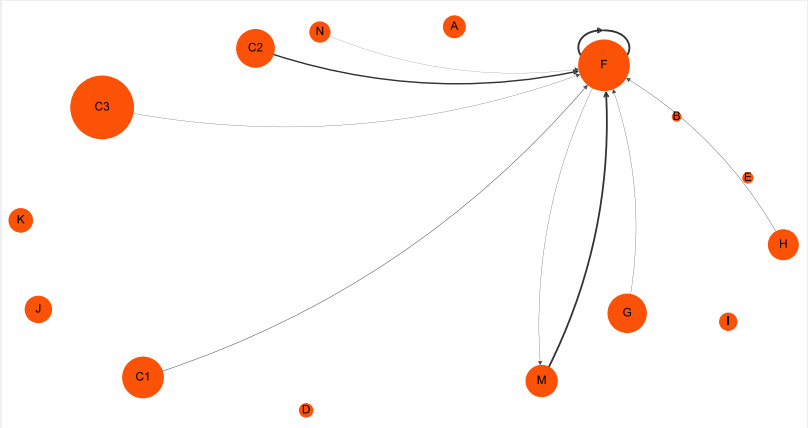
Centrality measures how big of a role an industry plays in national production flows. The more central an industry is, the more influential it is in the economic production network. We consider the average centrality score from 1995 to 2020, including both the number of connections to other industries and the strength of these connections.[3]

Amongst all 15 industries that are part of the Dutch commercial sector,[4] construction ranked as the second most central (Figure 2).

This is not surprising, as the industry is to some degree involved in anything that needs to be built. Due to its centrality, construction plays a crucial role in the function of the economy. If the construction industry improved its productivity growth, that would have large positive spillover effects. Similarly, if it were to shrink, that would not only negatively impact production flows but also the economic performance of other closely connected industries.[5]

Figure 2: The construction industry is primarily linked with other specialised business services (M) and medium-low tech manufacturing (C2) industries

Production flows from construction (F) industry



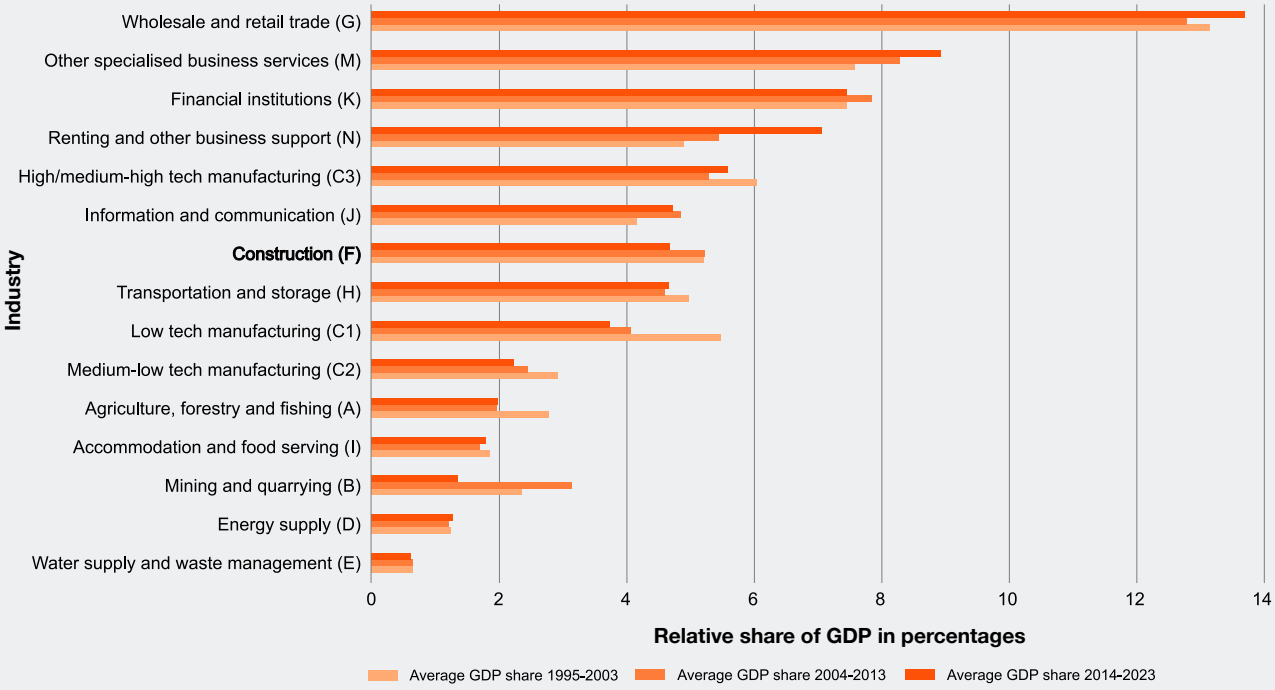
The size of the sphere reflects the centrality of the industry
The thickness of the arows indicate the stranght of production flows

		Industry	Centrality score 1995-2020
Primary sector	A	Agriculture, forestry and fishing	0.08
	B	Mining and quarrying	0.01
Secondary sector	C1	Low tech manufacturing	0.29
	C2	Medium-low tech manufacturing	0.25
	C3	High/medium-high tech manufacturing	0.68
	D	Energy supply	0.03
	E	Water supply and waste management	0.02
	F	Construction	0.44
Tertiary sector	G	Wholesale and retail trade	0.25
	H	Transportation and storage	0.16
	I	Accommodation and food serving	0.05
	J	Information and communication	0.12
	K	Financial institutions	0.10
	M	Other specialised business services	0.17
	N	Renting and other business support	0.07

Source: OECD Input-Output Tables 2021 ed., PwC analysis.
Only trade flows that exceed the average (or US$1.5 billion) from 1995-2020 are included. We exclude non-commercial industries.

[3] For more details, p. 39 in PwC (2025): Future-Proofing the Dutch Economy: Key Industries for Resilient Growth.
[4] CBS: Commercial Sector.
[5] Dieteren & Nauta (2020): Centraliteit Sector van Belang bij Doorwerking Schok in Economie. [ESB].

Figure 3: Construction is the seventh largest industry in the Netherlands



Sources: CBS data, PwC analysis.

5%

Dutch GDP contribution

Economic importance: despite a sizeable and likely growing share of GDP, the industry has a low share of R&D spending and sluggish productivity growth

Next, we look at the economic importance, considering the industry's share of the gross domestic product (GDP), share of private in-house research and development (R&D) spending and labour productivity growth.

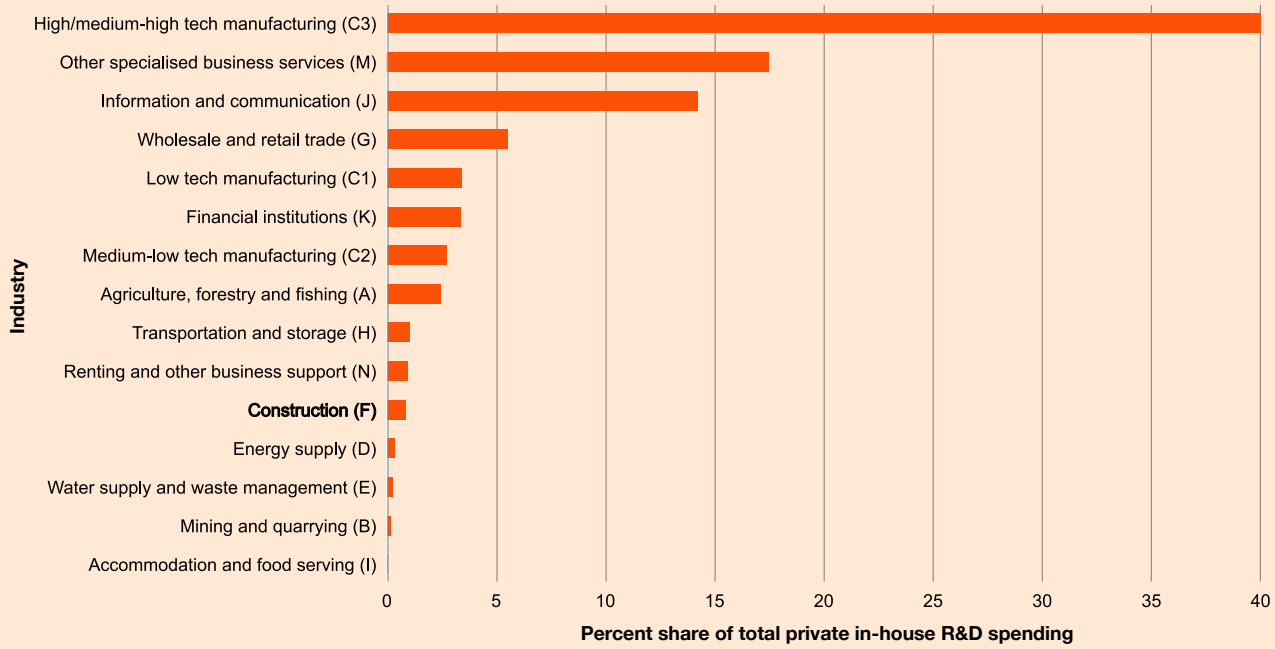
Economic size (share of GDP)

Even though, since 1995, the industry's relative share of GDP has slightly decreased, it remains 'in the middle of the pack' in its economic size (Figure 3). Given societal factors including the housing crisis, the energy transition, climate change, ageing Dutch infrastructure, and the need to enhance national defence, the construction sector will play an essential role in the coming decades. It will be fundamental for delivering adequate housing, climate-resilient water management systems, a robust energy grid, safe drinking water, and secure bridges, tunnels, and viaducts. Although industry growth faces challenges such as regulatory constraints, grid congestion, labour shortages, modest productivity gains, increasing demand, and a complex macroeconomic context, the construction sector is expected to grow steadily in the coming years.

Next, we assess another related aspect that will impact the growth of the industry, namely the role of research & development (R&D) and innovation.

[3] For more details, p. 39 in PwC (2025): Future-Proofing the Dutch Economy: Key Industries for Resilient Growth.
[4] CBS: Commercial Sector.
[4] Dieteren & Nauta (2020): Centraliteit Sector van Belang bij Doorwerking Schok in Economie. [ESB].

Figure 4: Construction has the fifth-lowest in-house R&D spending



Sources: CBS data, PwC analysis.

1%

of total Dutch private in-house R&D spending

R&D spending

Regarding R&D spending, construction has consistently made up less than 1% of the total spending by the commercial sector (Figure 4).

R&D spending is vital not only for innovation within the industry but also for creating productivity-enhancing innovation spillovers for other industries.[6] This is particularly relevant because the construction sector plays such a central role in the Dutch economy.

Despite the low R&D spending, surprisingly, only 3.6% of firms agree that there is a lack of innovative solutions.[7] That might imply that there are plenty of innovative solutions. However, innovations are not a guarantee of productivity. For that, the industry still has an issue with scaling up innovative solutions.[8]

Industry-specific challenges make it difficult to scale innovation enough to drive productivity growth. First, the nature of construction projects makes it hard for the sector to increase labour productivity because it is project-based and has a much less repetitive production process than other sectors. In addition, production is tied to specific construction sites every time, and with that, the construction process is more difficult to replicate and automate.[9]

Second, the building design is often created by architects and then outsourced with specifications and drawings. Construction firms, therefore, have to build with different designs, regulations and requirements that often differ from one municipality to the next. During the planning phase, there are long lead times and bureaucratic hurdles in obtaining building permits, with varying regulations per municipality leading to further delays.[10]

[6] Castellani et al. (2016): The Productivity Impact of R&D Investment: A Comparison between the EU and the US.
[7] CBS (2024): Three quarters of business owners aiming to boost productivity.
[8] ABN AMRO (2025): Innovatie zonder opschaling is bezigheidstherapie.
[9, 10] ING (2025): Why the EU construction sector is steadily outperforming the US.

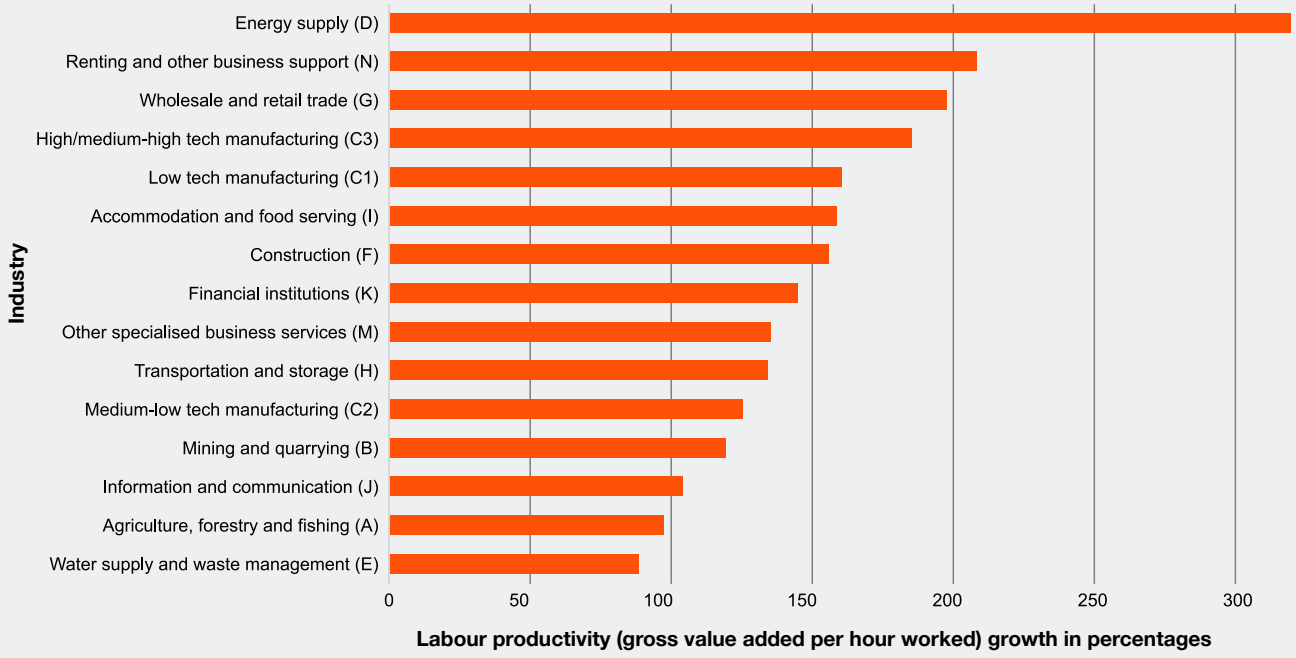
Third, construction companies tend to have relatively little collaboration in ecosystems with other companies, knowledge institutions or government agencies, which can be a way to cooperate, learn from others and scale up good ideas, boosting productivity growth.[11]

Nevertheless, improvement in scaling innovation to boost productivity is possible through industrialisation, digitalisation and artificial intelligence (AI), and conceptual/serial approaches. Policymakers can help with investing in large-scale applications of innovative solutions, boosting the digital skills of construction companies and guaranteeing sufficient market volumes to make investments profitable. With increasing labour shortages, pressure on productivity, and the need for sustainability, the use of smart technology is becoming increasingly important to carry out complex construction projects.[12]

Labour productivity growth

Although we have already written about the labour productivity growth problem in the construction industry, we make two additional comparisons here. First, the industry has relatively modest productivity growth compared to other industries (Figure 5).

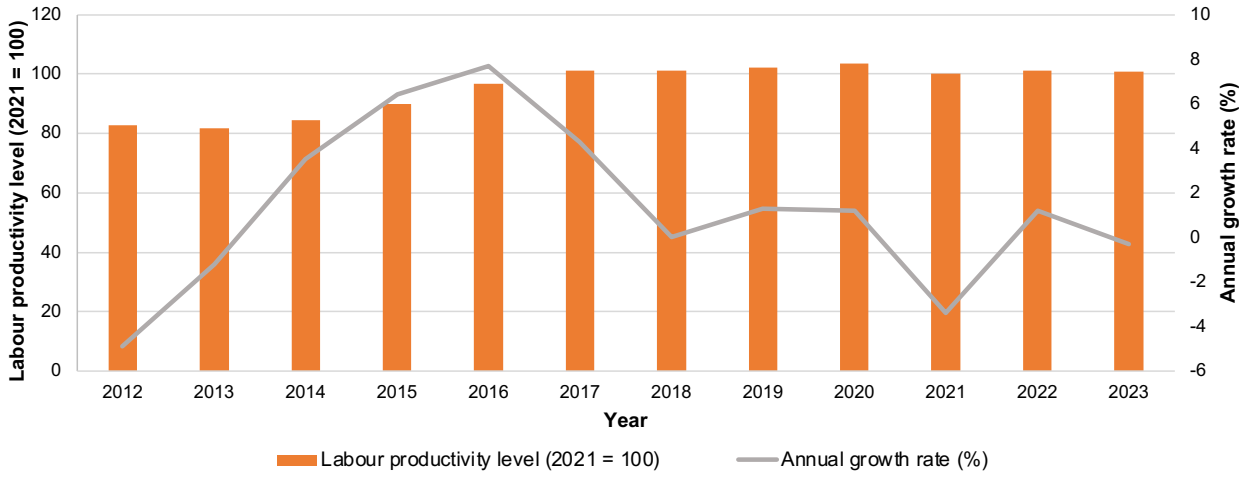
Figure 5: From 1995 to 2023 construction ranks seventh in cumulative labour productivity growth



Sources: CBS data, PwC analysis.

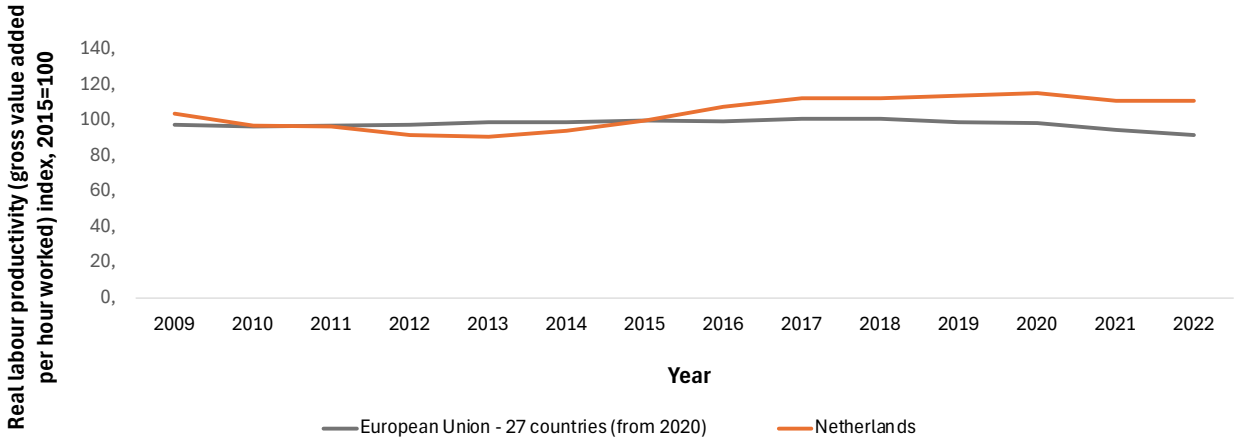
[11] CBS (2024): Three quarters of business owners aiming to boost productivity.
[12] ABN AMRO (2025): Innovatie zonder opschaling is bezigheidstherapie.

Figure 6: Labour productivity growth in construction has declined since 2016



Sources: CBS data, PwC analysis.

Figure 7: The Dutch construction industry has been more productive than the EU-27 average since 2015



Sources: CBS data, PwC analysis.

The labour productivity growth rate significantly slowed down over the past years, even becoming negative lately, as labour productivity in construction fell by 2% between 2019 and 2023 (Figure 6).[13]

Second, despite relatively weak labour productivity growth, the Dutch construction industry grew its labour productivity by relatively more than the EU-27 average of the same industry since 2015 (Figure 7). Nevertheless, given the enormous demand for the built environment over the coming decades, labour productivity of the Dutch construction sector remains too low to meet societal construction goals, despite performing better than the construction sector in other countries.

[13] ING (2025): Why the EU construction sector is steadily outperforming the US.

Why is labour productivity an issue in the construction industry?

- First, according to the CBS April 2024 business survey, 48.8% of construction companies cite labour shortages as the main obstacles to boosting productivity. As construction is a relatively labour-intensive sector, not enough labour makes it challenging to complete projects.[14] As the population ages and fewer people enter the workforce—whether from abroad, other sectors, or younger generations—the construction industry will likely continue to face persistent labour shortages.
- Second, 23.5% of companies cite economic uncertainty as the second most important obstacle to boosting productivity.[15] The current macroeconomic and geopolitical environment, with supply chain disruptions, rising input prices and volatility in interest rates, makes construction projects more expensive and challenging to plan. This leads to lower profit margins and subsequently lower room for productivity-enhancing investments. The construction market remains volatile with notable up and downswings in demand and input costs. In addition, because construction is so localised, it is almost impossible to spread risks internationally, with a resurgence in one market counterbalancing a crisis in another.[16]
- Third, grid congestion, delays in permitting by municipalities (also due to nitrogen issues), increasing project complexity and regulatory pressure impact the sector's productivity.

Scarce production factors: labour and emissions-intensive production processes remain an issue

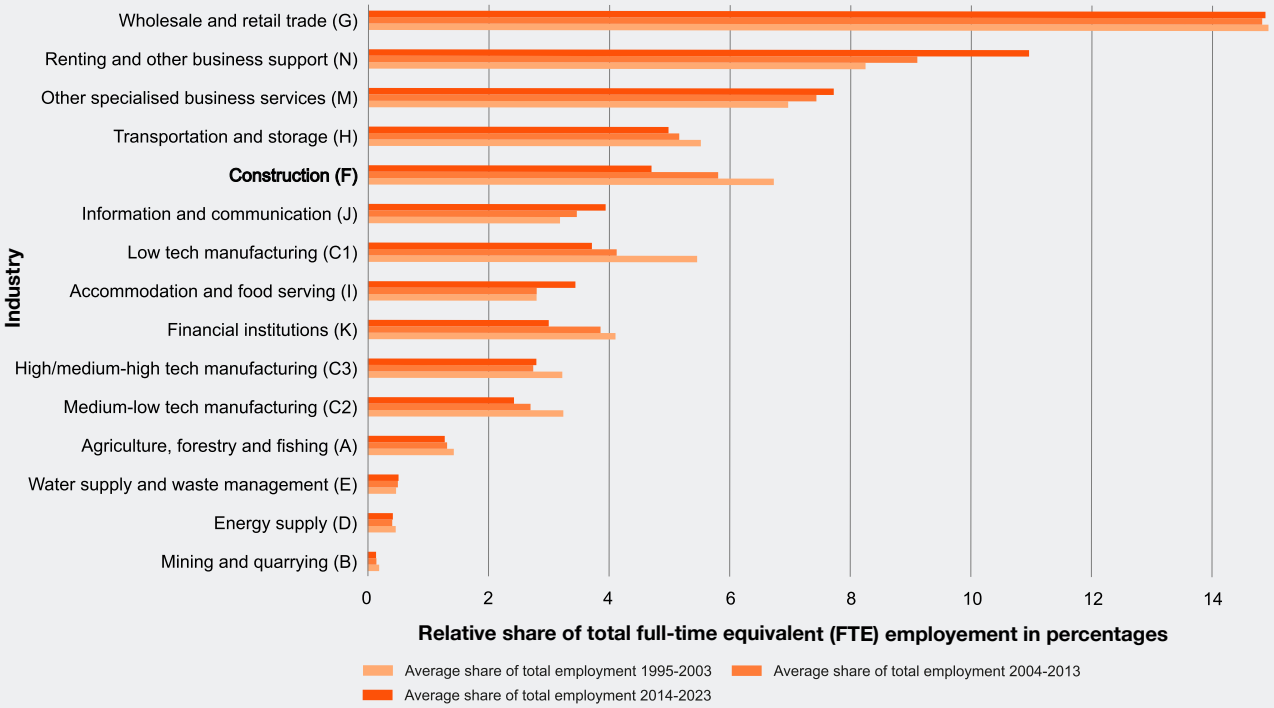
In this section, we consider four areas of scarce production factors: labour, capital, environmental (greenhouse gases, nitrogen and water) and physical space. The lower the rank, the less an industry relies on scarce production factors. When aggregating all the factors in an index, construction takes up the fourth most of all industries (Figure 8). In addition, from 1995 to 2023, construction has slightly improved in terms of its reliance on scarce production factors.

Figure 8: Overall, construction performs relatively well in terms of using scarce production factors, but challenges remain in labour, emissions and physical space areas

Industry	Scarce production factors index in 2023	Rank in 2023 (1 is the best)
Accommodation and food serving (I)	5.7	1
Mining and quarrying (B)	5.6	2
Financial institutions (K)	5.4	3
Construction (F)	**5.3**	**4**
Information and communication (J)	5.3	5
Water supply and waste management (E)	5.3	6
Low tech manufacturing (C1)	5.0	7
Medium-low tech manufacturing (C2)	4.8	8
Other specialised business services (M)	4.8	9
Renting and other business support (N)	4.7	10
Wholesale and retail trade (G)	4.2	11
High/medium-high tech manufacturing (C3)	4.1	12
Energy supply (D)	3.2	13
Transportation and storage (H)	3.0	14
Agriculture, forestry and fishing (A)	2.4	15

[14,15] CBS (2024): Three quarters of business owners aiming to boost productivity.
[16] ING (2025): Why the EU construction sector is steadily outperforming the US.

Figure 9: Construction is the fifth-largest Dutch employer



Sources: CBS data, PwC analysis.

Labour (share of total employment)

The construction industry in the Netherlands employs more than 670,000 employees or 4.7% of total FTE employment (Figure 9).[17]

Nevertheless, as discussed in the section on labour productivity, the industry still deals with labour shortages. Currently, a third of construction companies are limiting production to the available labour supply. In addition, it has been challenging to attract new workers and reskill at the scale needed, as construction remains a labour-intensive industry.[18] Since the labour supply will not increase in the coming decade due to an ageing population and government policy aimed at limiting migration, long-term attention to increasing labour productivity is essential.[19]

[17] CBS: Trade and industry; employment and finance per sector, SIC 2008, data for 2023.
[18] PwC (2024): How productivity in the construction sector can be increased.
[19] CBS (2025): Twee derde van de ondernemers ervaart personeelstekort.

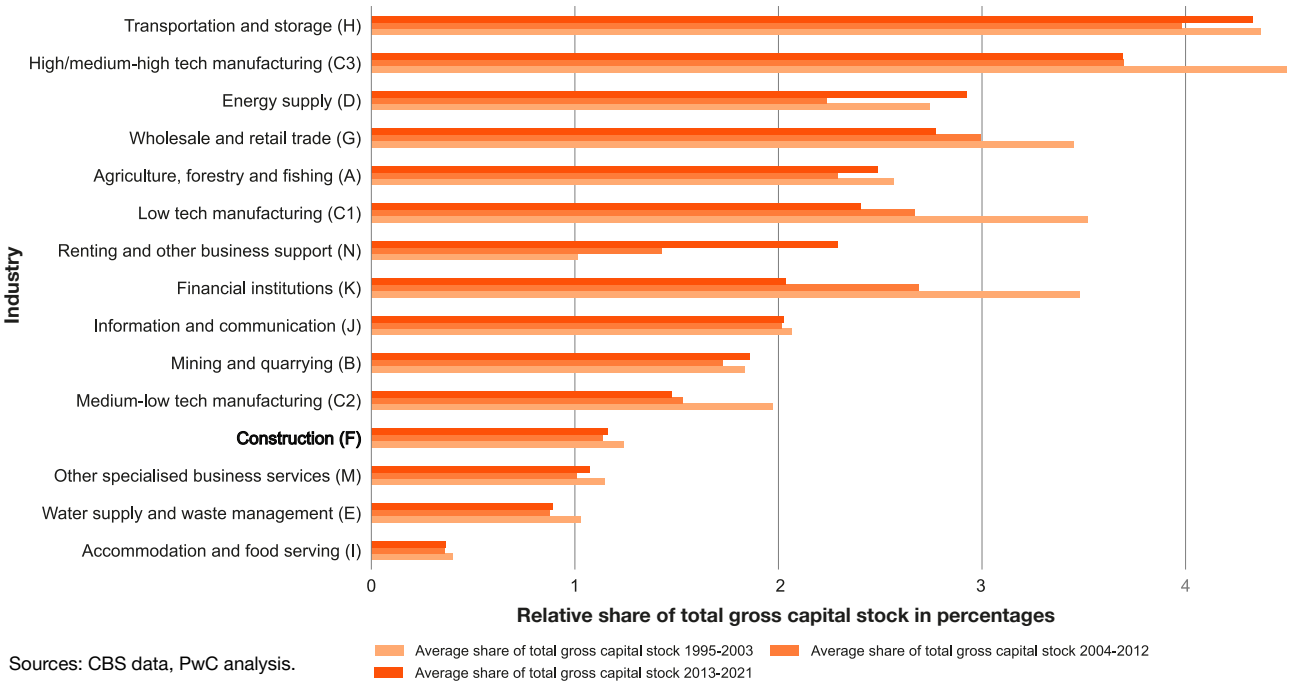
Capital (share of total gross capital stock)
In terms of gross capital share, the industry uses the fourth-lowest share (1.2%) of gross capital stock (Figure 10).

The capital in construction comes from the clients, not from the builders themselves. Think of large (semi-)public clients such as the Rijkswaterstaat (RWS), the RVB (Central Government Real Estate Agency), energy grid companies, water purification companies, and cable companies.

However, the capital stock is not used as productively as it could be, as capital productivity is relatively low (Figure 11).[20]

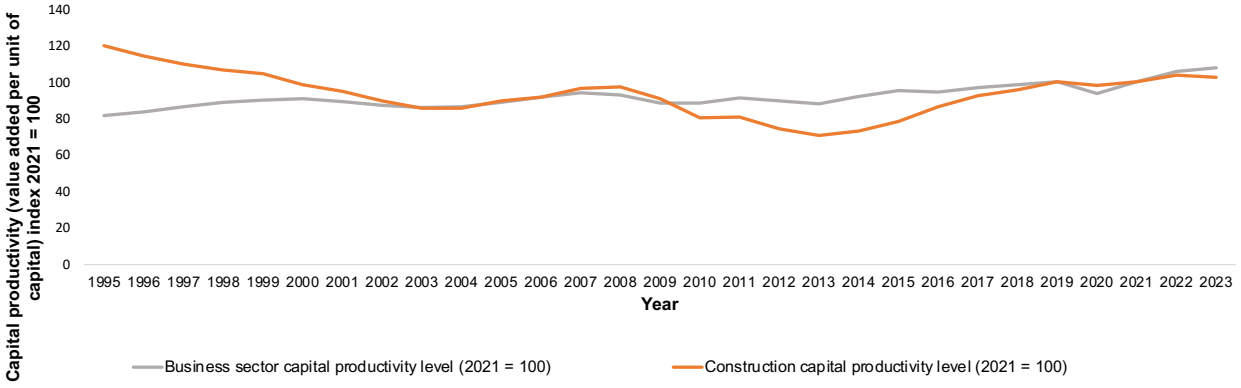
With capital productivity indexed at 100 in 2021, data up to 2023 show that capital productivity in commercial sectors has increased by 32% from 1995 to 2023. In contrast, capital productivity in the construction sector declined by almost 15% over the same period. This decline indicates that machines, buildings, transport equipment, software, and other production assets generate lower financial return, mainly due to the significantly increased complexity of projects and the risks in the construction process that builders have taken on, despite usually having fixed-fee pricing agreements with clients.

Figure 10: Construction has the fourth lowest gross capital stock



Sources: CBS data, PwC analysis.

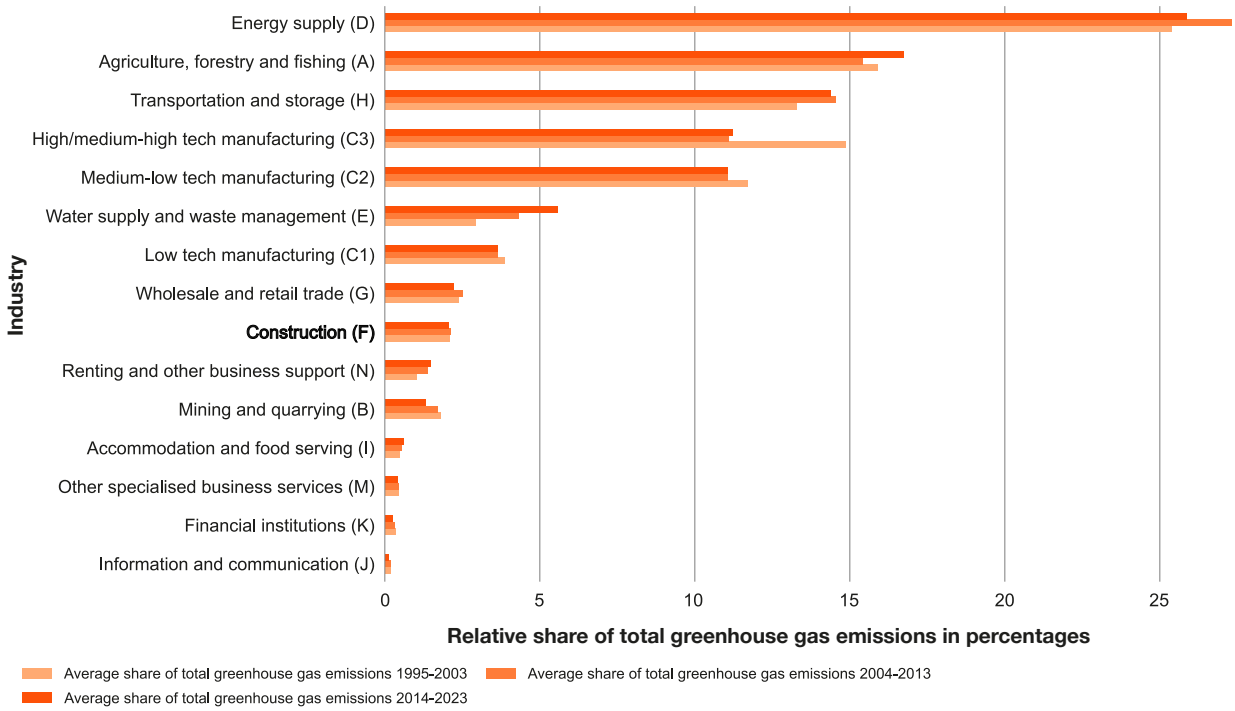
Figure 11: Capital productivity in construction has lagged the business sector since 2009



Sources: CBS data, PwC analysis.

[20] CBS (2024): Groeirekeningen; nationale rekeningen.

Figure 12: Construction ranks eighth in terms of greenhouse gas emissions



Sources: CBS data, PwC analysis.

Environmental

Greenhouse gas emissions

When it comes to greenhouse gas emissions, the Dutch construction industry performs relatively well, emitting only 2.1% of total greenhouse gas emissions (Figure 12).

Nevertheless, this share has remained relatively stable over time, but other industries have been able to decarbonise faster. Additionally, this data only includes emissions of construction companies themselves in their production process. If we look at the total value chain of the built environment (scope 3 emissions), those make up almost 40% of all emissions worldwide.[21] Hence, to reach meaningful decarbonisation, all players in the value chain must cooperate towards this goal. Furthermore, another challenge for the construction industry is the high reliance on raw materials, as construction materials and products represent about 50% of all raw materials extracted globally.[22]

Hence, sustainability and circularity are major trends demanding transformation for construction companies. The Dutch construction industry needs to achieve ambitious targets to improve sustainability performance. This is not only necessary to meet the changing expectations of stakeholders and society, but it is also essential for the industry's continued existence, as key raw materials will eventually become scarce. For example, the Dutch construction industry needs to uptake a 21% reduction in energy consumption of existing residential buildings by 2035, reach a 100% circular economy by 2050, and a 55% reduction of greenhouse gas emissions by 2030 (compared to 1990 levels).

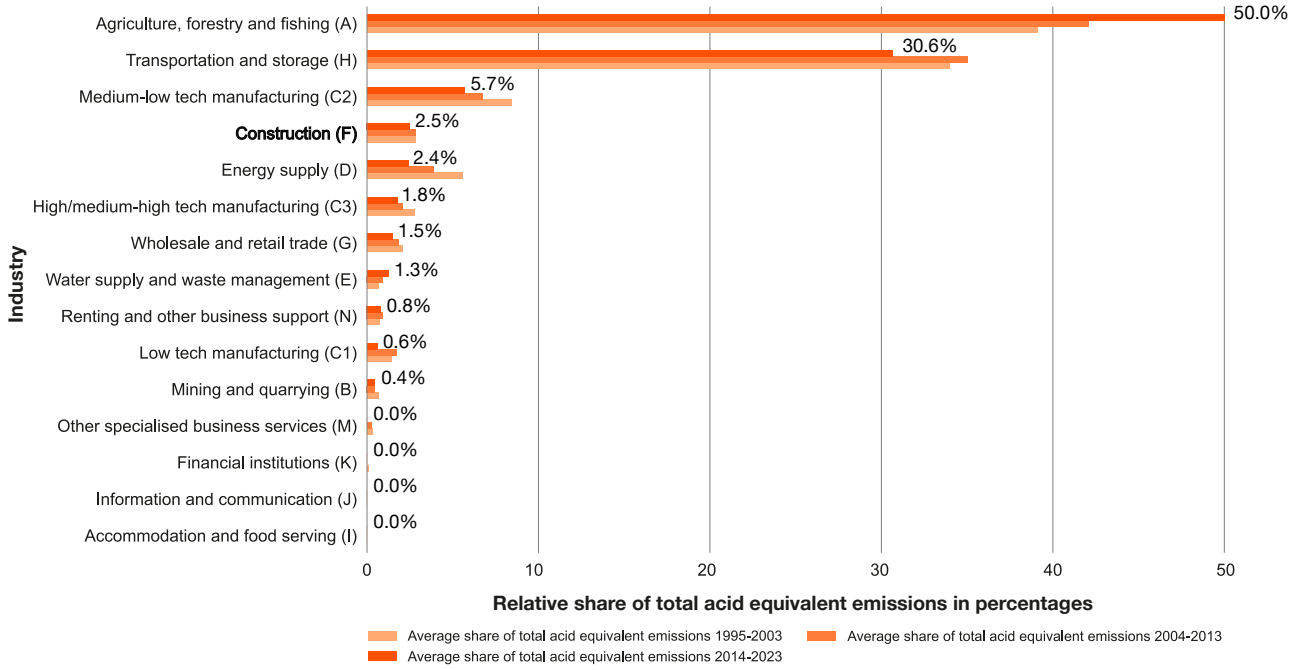
From the business perspective, sustainability and circularity investments raise costs but also increase revenue. Eighty-eight per cent of CEOs within construction have indicated that they have initiated climate-friendly investments within the last 5 years. Of this group, 33% report higher costs, but 37% also report higher revenue.[23]

[21] WBCSD: Transforming the Built Environment.

[22] European Circular Economy Stakeholder Platform (2022): What role do secondary materials play in new constructions and in buildings renovation?

[23] PwC (2025): Sustainable Business Transformation in the Construction Industry.

Figure 13: Construction is the fourth-largest emitter of acid equivalent emissions



Sources: CBS data, PwC analysis.

Nitrogen (acidification)

The construction industry has been the fourth-largest emitter of acid equivalent emissions with 2.5% of the total (Figure 13). There has been a slight reduction since 1995.

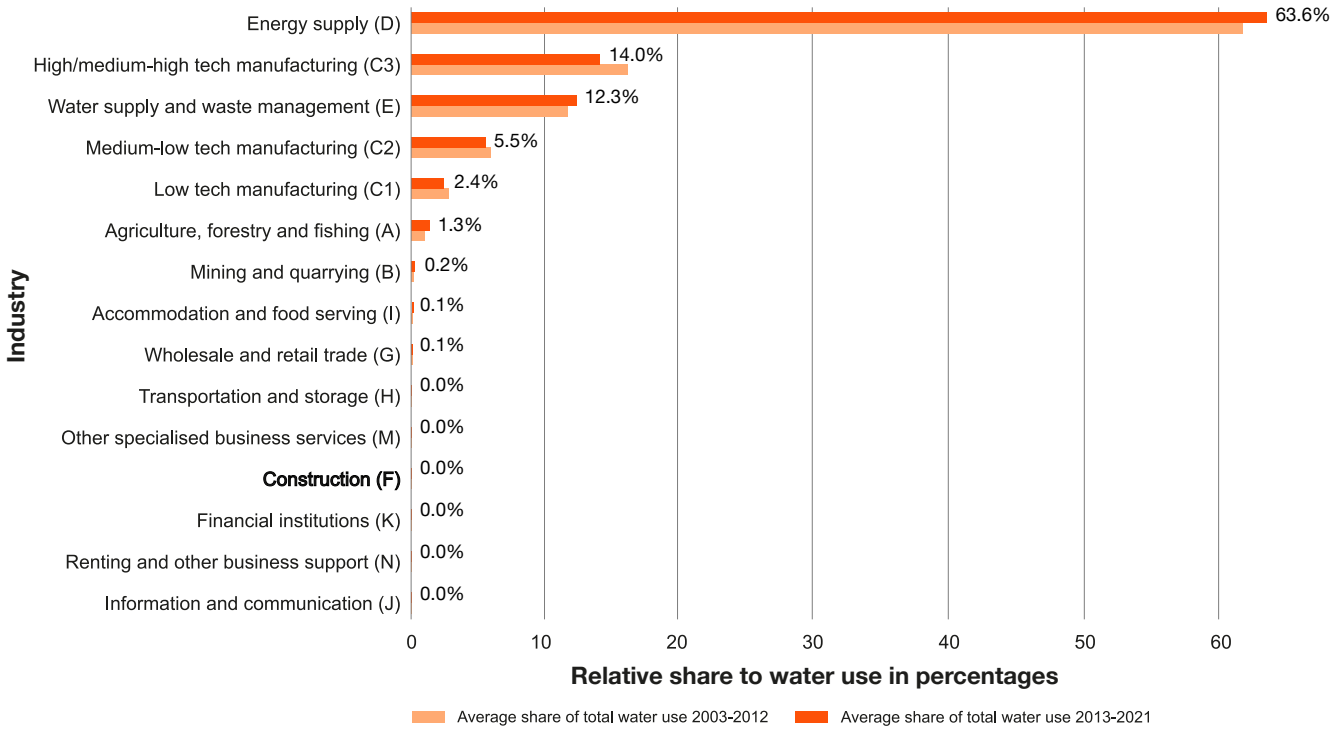
Additionally, court rulings related to the nitrogen crisis (for example, the ruling on the Porthos project) are impacting the industry and planning of projects.

Water

In terms of water use, the construction industry is a relatively modest user of water (Figure 14).

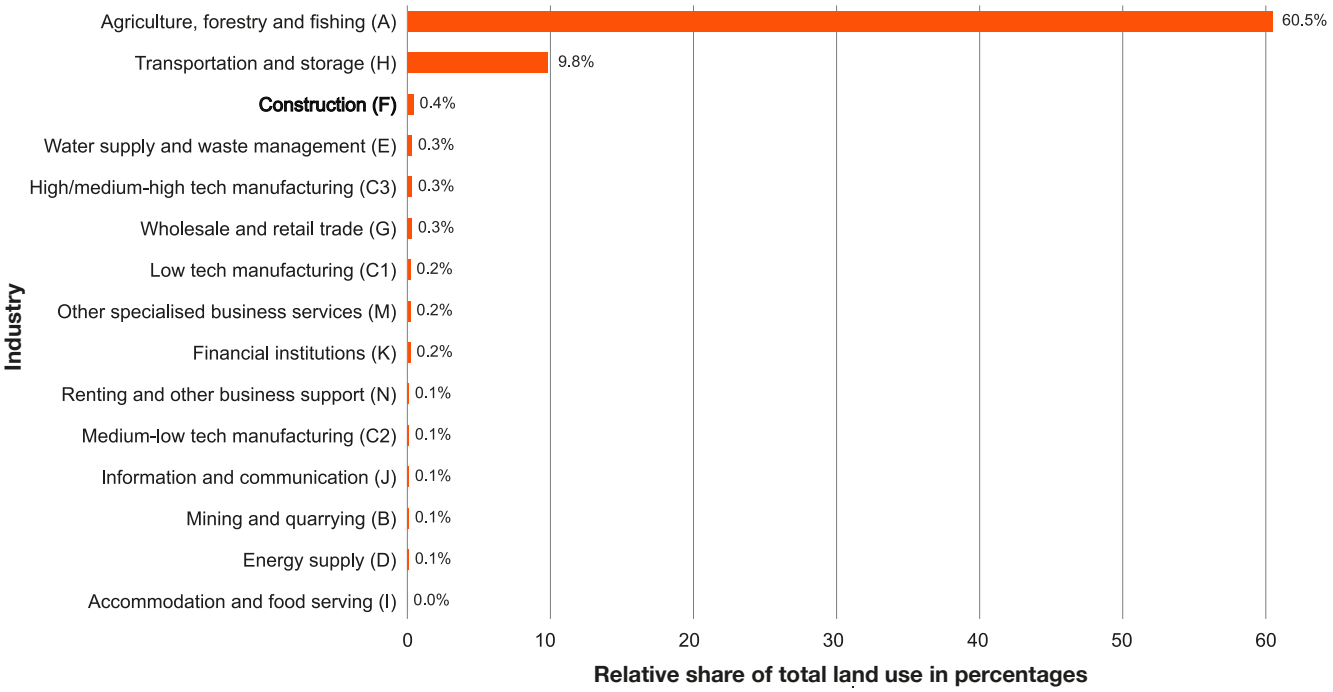
Nevertheless, the industry still relies on water, and, as we have already written, the upcoming stricter requirements for businesses regarding water extraction or discharge will also have an impact on the construction sector.

Figure 14: Construction, compared to other industries, uses barely any water



Sources: CBS data, PwC analysis.

Figure 15: Construction, as an industry, has the third-largest reliance on physical space



Sources: CBS data, PwC analysis.

Physical space

Last, according to the European Commission's land use and land cover survey (LUCAS), the industry relatively takes up more physical space than other industries, with 0.4% of the total (Figure 15).

Many activities of the construction industry are location-bound, meaning that it would be difficult to move them elsewhere. In addition, as physical space is already scarce, there is not much growth potential in terms of physical space without significant economic restructuring.[24] This has an implication on the construction industry, as either available land for new construction is very scarce or construction takes place in an already built environment, which makes it more challenging and time-consuming to start the building process.

[24] Denkwerk (2025): Kiezen én Delen.

Conclusion: to become future-proof and serve its societal role, the construction industry needs to boost productivity and decarbonise

To summarise the perspective of the three lenses, the construction industry is important to the Dutch economy because of its central role in many production processes and its economic size. However, the industry struggles with low R&D spending, sluggish labour productivity growth and relatively high reliance on scarce production factors, especially in terms of its reliance on labour, greenhouse gas and acid-equivalent emissions and physical space.

Nevertheless, it serves a meaningful societal function to tackle the housing crisis, the energy transition, climate change, outdated Dutch infrastructure and strengthening the defence sector. The construction sector is also part of the government's productivity agenda,[25] and is at the centre of the government's ambition to build 900,000 homes by 2030. This would require an annual productivity increase of 40% in the construction industry.[26] In addition, construction will play a role in other ambitions, such as road infrastructure renewal; making 7 million existing homes and 1 million other buildings more sustainable (emission-free and energy-neutral by 2050); and making the construction economy fully circular by 2050.

Hence, the demand for construction services will only grow, and the industry needs to find a way to boost labour productivity growth and achieve its sustainability and circularity ambitions to become future-proof.

[25] Ministerie van Economische Zaken (2025): De Productiviteitsagenda.
[26] Rijksoverheid: 900.000 nieuwe woningen om aan groeiende vraag te voldoen.

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