European Architectural Barometer Q3 2023
Prefab in construction
November 2023

ARCH VISION a product by USP Marketing Consultancy

About European Architectural Barometer

THE GOAL

The objective of the European Architectural Barometer of USP is to offer profound insight into the current economic situation and trends among architectural firms in the Netherlands, Germany, the UK, France, Spain, Italy, Belgium and Poland. The European Architectural Barometer provides knowledge about the future building volumes and the way in which these building volumes will be realised (trends).

THE RESEARCH TOPICS

Recurring topic: Economic developments of architectural companies in Europe (order book and turnover development)

Quarterly theme topics in 2023:
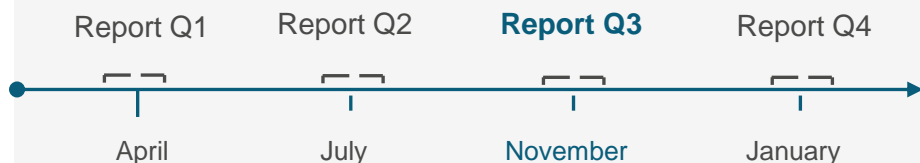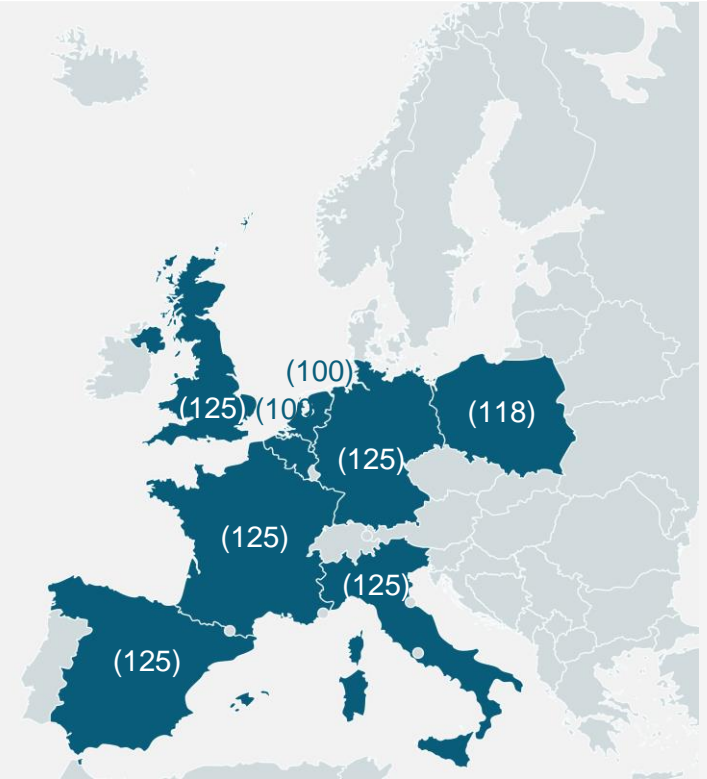Q1: Media Orientation
Q2: Sustainability
Q3: Prefab
Q4: BIM

COUNTRY SCOPE

(number of interviews conducted)

Background characteristics of the interviewed respondents can be found in the country-specific profiling, the architect chapter, and in the appendix as a European overview.

(100)
(125) (100)
(118)
(125)
(125)
(125)
(125)

THE TIMELINE

Report Q1   Report Q2   **Report Q3**   Report Q4

April   July   November   January

PROJECT TEAM

Jeroen de Gruijl
Consultant

+31 6 83979041
deGruijl@usp-mc.nl

Petra Skokic
Senior Research Analyst

skokic@usp-mc.nl

Dirk Hoogenboom
Research Consultant

+31 652098924
hoogenboom@usp-mc.nl

Background of the architects
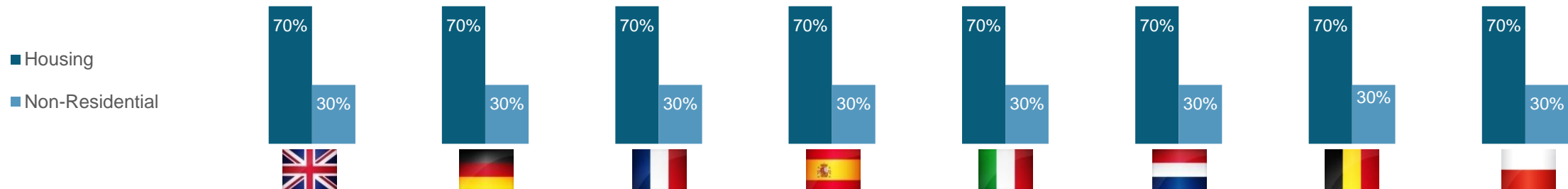
The table below shows the average number of employees of the architectural firms within the current quarter of this research, divided by country. The architectural firms with one employee were excluded from this research. The second table shows the segments in which architects within this research are mostly active.

Number of FTE	🇬🇧	🇩🇪	🇫🇷	🇪🇸	🇮🇹	🇳🇱	🇧🇪	🇵🇱
Average	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0
2 – 4 FTE	60%	60%	60%	60%	60%	60%	60%	60%
5 – 9 FTE	40%	40%	40%	40%	40%	40%	40%	40%
10 – 19 FTE	20%	20%	20%	20%	20%	20%	20%	20%
20 – 39 FTE	10%	10%	10%	10%	10%	10%	10%	10%
> 40 FTE	5%	5%	5%	5%	5%	5%	5%	5%

Segment mostly active

- ■ Housing
- ■ Non-Residential

	🇬🇧	🇩🇪	🇫🇷	🇪🇸	🇮🇹	🇳🇱	🇧🇪	🇵🇱
Housing	70%	70%	70%	70%	70%	70%	70%	70%
Non-Residential	30%	30%	30%	30%	30%	30%	30%	30%

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...conclusion

Share of Prefab users in Europe
What percentage of your projects (in past 2 years) contained some form of prefab building elements or off-site construction? [SPONTANEOUS]

Country	Prefab ranking 2018	Prefab ranking 2019	Prefab ranking 2021	Prefab ranking 2023
Belgium	60%	60%	1st (60%)	1st (60%)
France	40%	40%	2nd (40%)	2nd (40%)
Germany	29%	29%	3rd (29%)	3rd (29%)
Italy	23%	23%	4th (23%)	4th (23%)
Netherlands	19%	19%	5th (19%)	5th (19%)
Poland	16%	16%	6th (16%)	6th (16%)
Spain	13%	13%	7th (13%)	7th (13%)
United Kingdom	10%	10%	8th (10%)	8th (10%)

...conclusion

A potential jump in Prefab usage
What are your projections for using Prefab in your 2025 and 2030 projects? [SPONTANEOUS]

Prefab projection 2025 and 2030

	Total	Belgium	France	Germany	Italy	Netherlands	Poland	Spain	UK
2021	n=770	n=82	n=110	n=114	n=114	n=85	n=55	n=97	n=113
2023	n=828	n=97	n=103	n=117	n=124	n=88	n=81	n=103	n=115

...conclusion

Percentage of projects containing prefabricated elements compared with 2021, 2019 and 2018

When you look at your projects which included any prefab from the past 2 years, what percentage of your projects contained the following types of prefabrication?

Prefabricated plain unfinished elements
Prefabricated panelised systems
Prefabricated modular buildings

Belgium — France — Germany — Italy — Netherlands — Poland — Spain — United Kingdom

...conclusion

% of architects expecting empty order book in the coming 12 months

Q: Do you expect your order book will be empty in the coming 12 months?
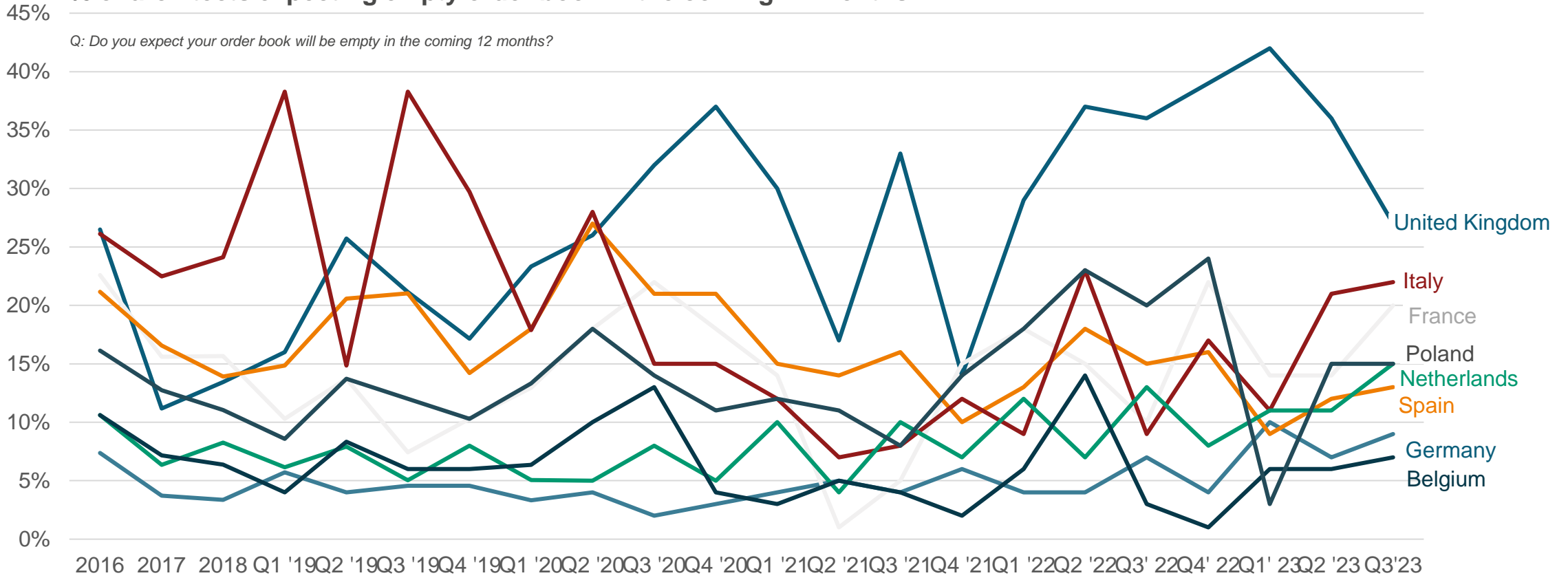
...conclusion

Architects' experience regarding their turnover
(saldo of architects reporting increase minus architects reporting a decrease)

Q: How did your turnover develop in the past quarter compared to the same period one year ago?

Italy
Belgium
Spain
Netherlands
Germany
France
United Kingdom
Poland
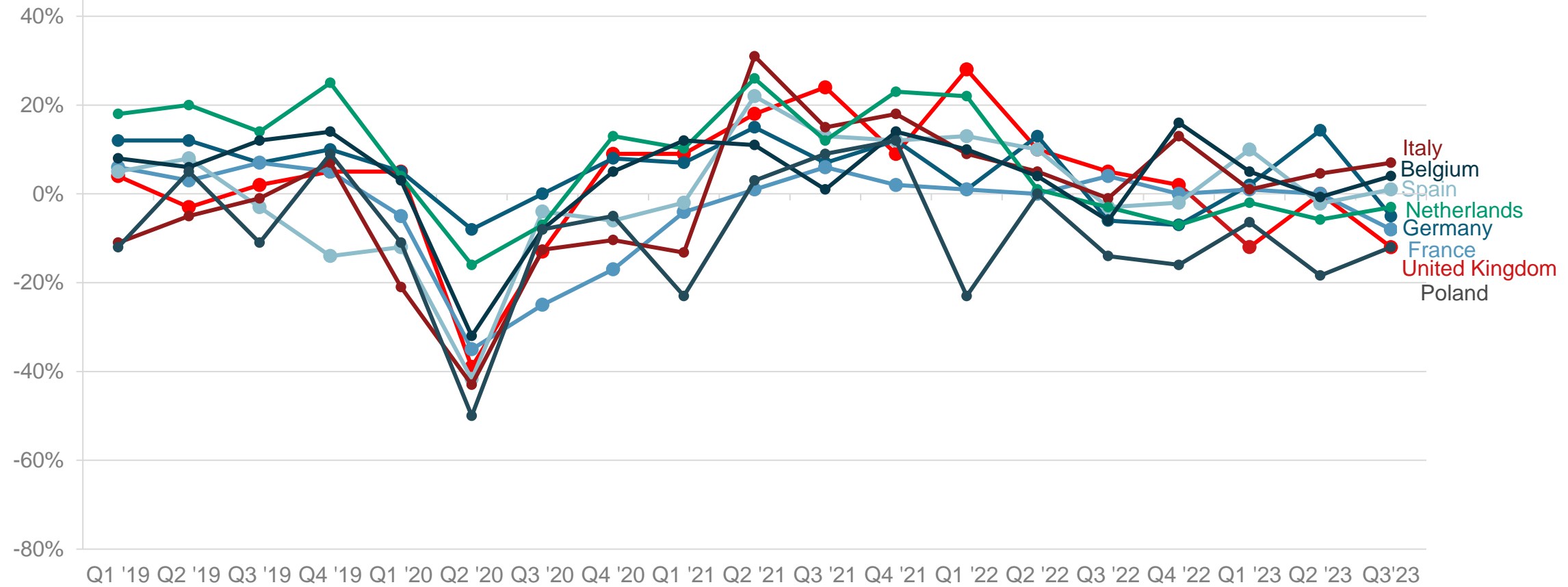
...conclusion

% of architects experiencing cancelled projects

Q: How many projects have been cancelled in the past quarter?
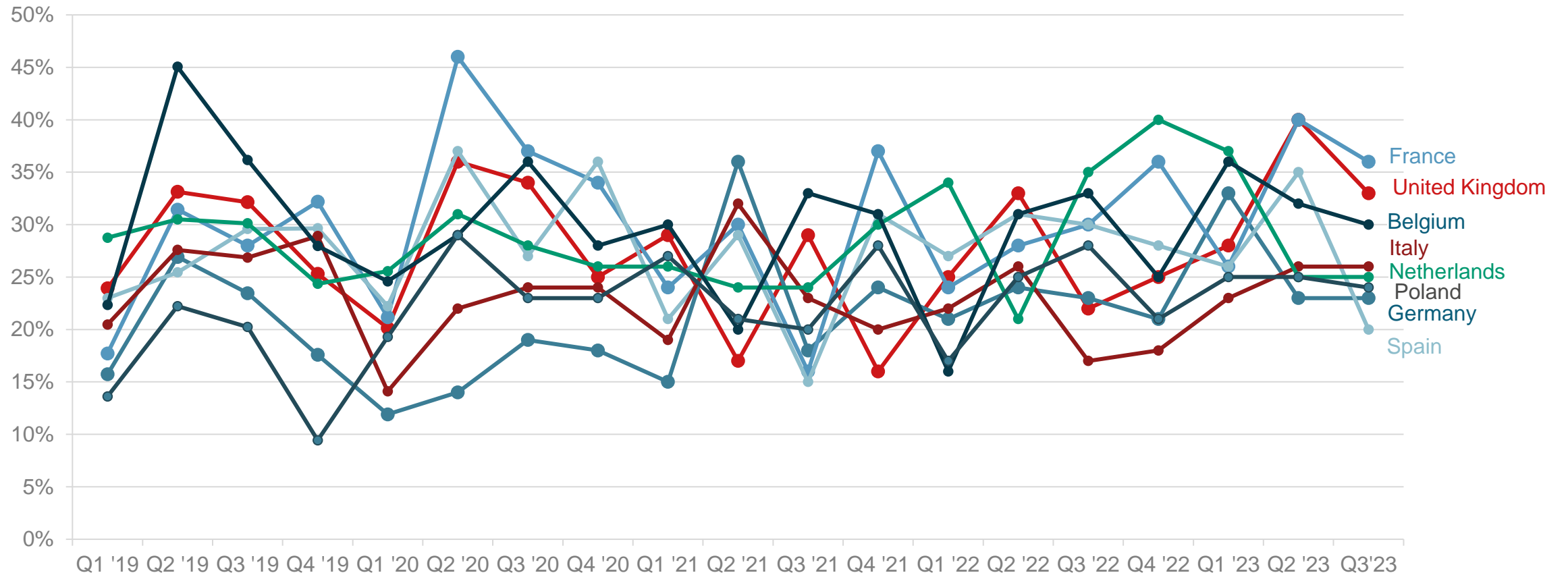
France
United Kingdom
Belgium
Italy
Netherlands
Poland
Germany
Spain

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...conclusion

USP

• *See the country slides for more detailed information on the developments per construction segment.*
• *Volumes are in billion euros at 2013 prices.*

USP

...conclusion

•*See the country slides for more detailed information on the developments per construction segment.*
•*Volumes are in billion euros at 2013 prices.*

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UK

...conclusion

Development of order book

Based on previous year
- Increase of more than 5%
- Increase of 0-5%
- Remains the same (0%)
- Decrease of 0-5%
- Decrease of more than 5%

— Rolling Order book Barometer (based on Q4 2008)
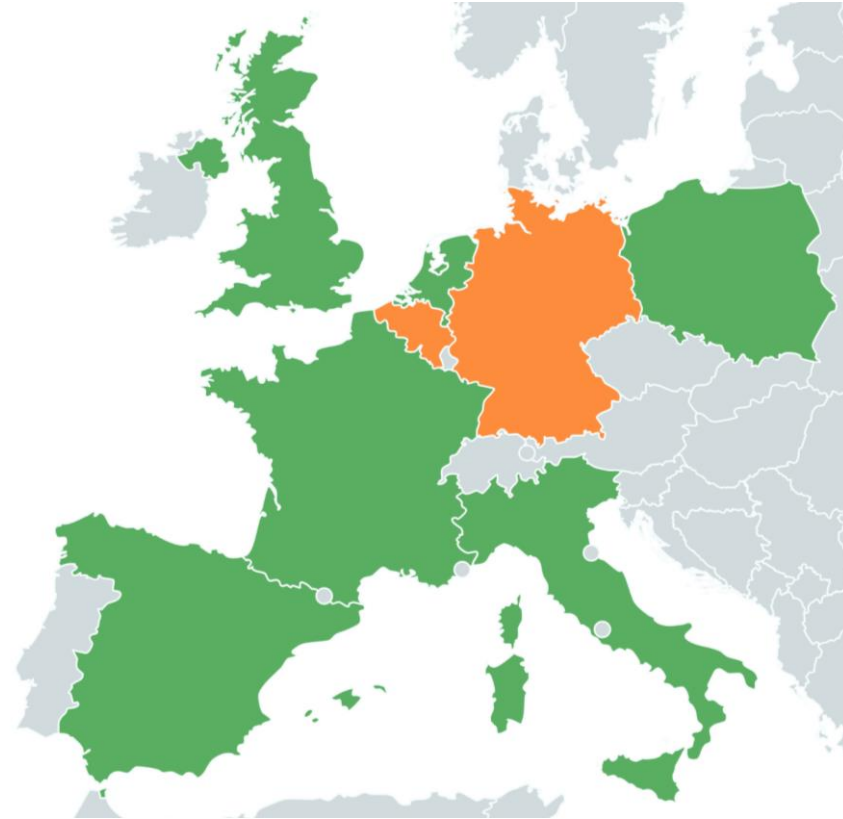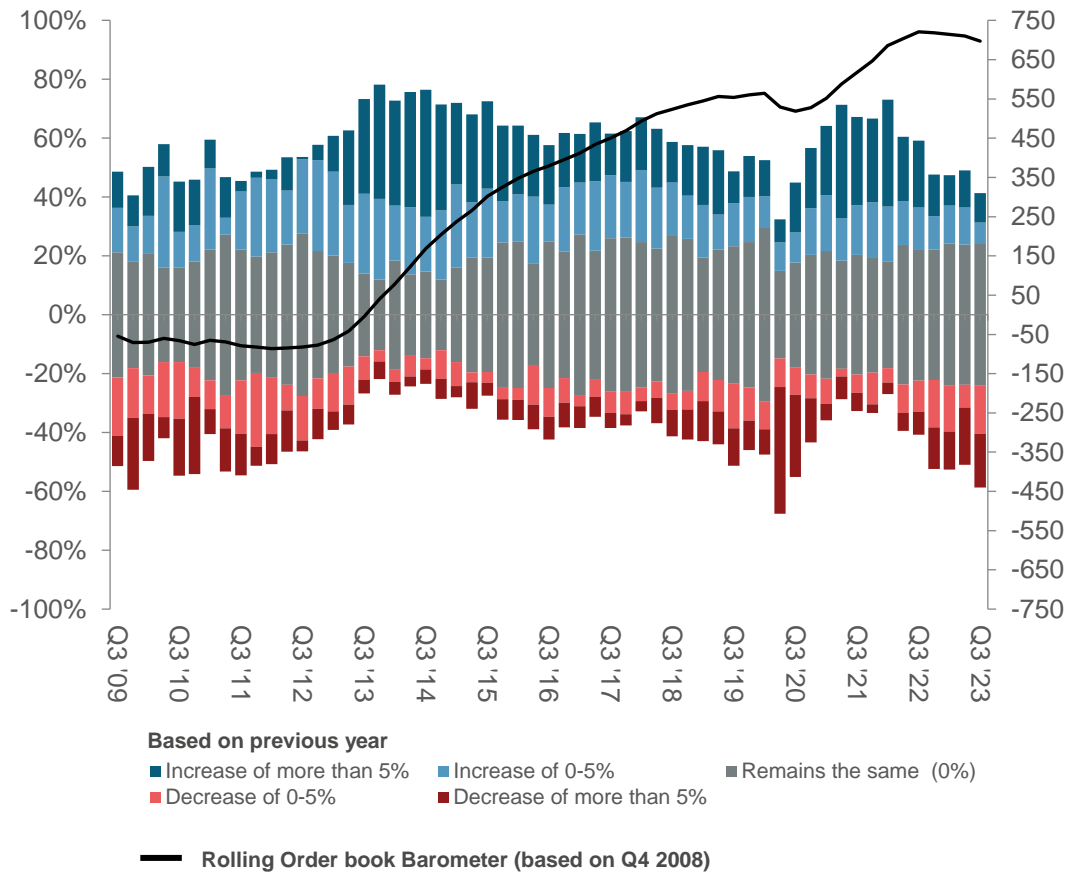
Expecting empty order book in 12 months
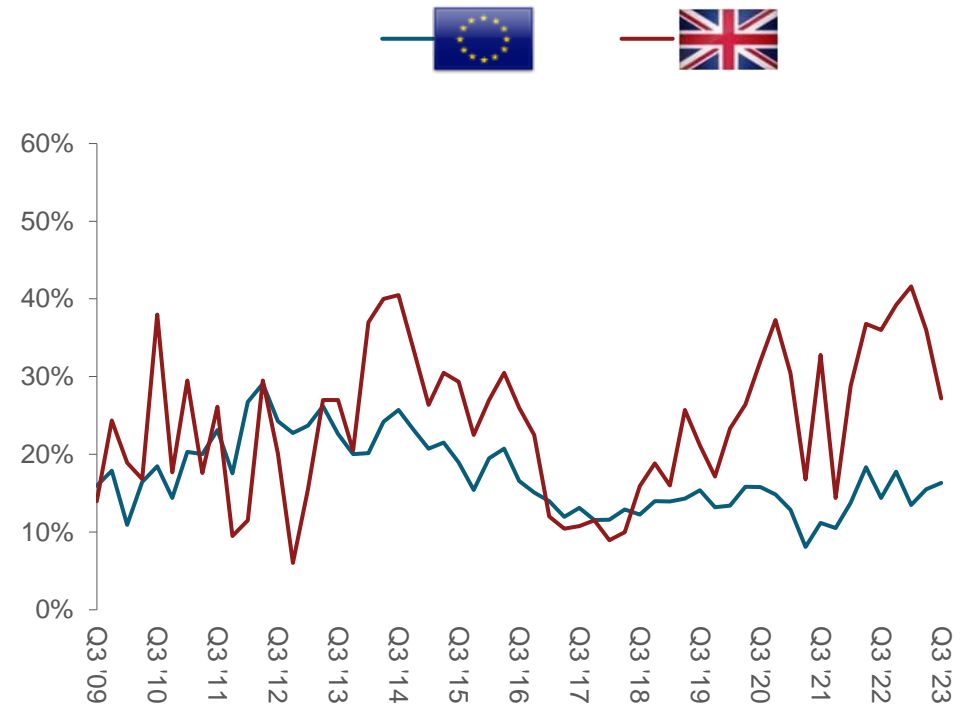
Since COVID-19, British institutions stopped publishing many indicators. A large share of architects experience postponed and cancelled projects which hints towards difficult times in the construction industry.

Development building permits

■ Building permits - Residential ■ Building permits - Non-residential

Index 2015=100

Source: Eurostat

(Chart y-axis: 0, 25, 50, 75, 100, 125, 150, 175, 200; x-axis: Q1 '15, Q1 '16, Q1 '17, Q1 '18, Q1 '19, Q1 '20)

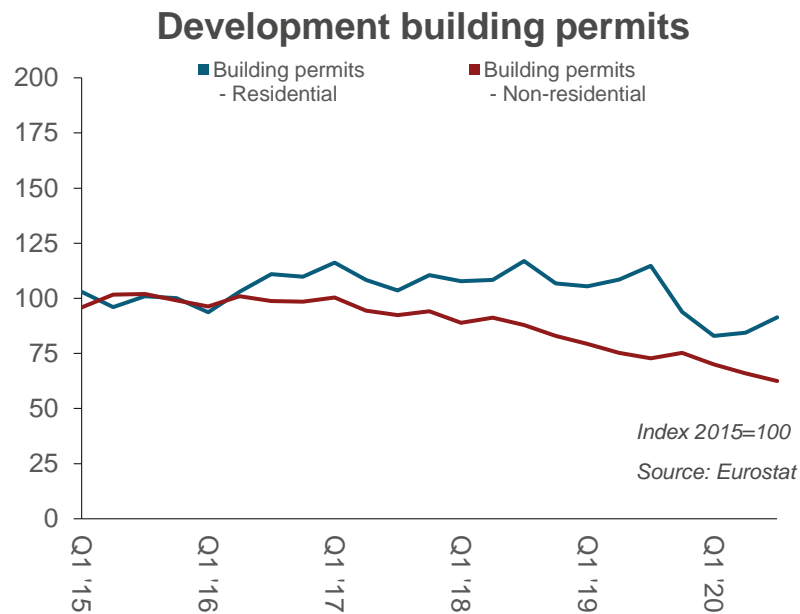| Economic and construction related indicators	Value Q3 2022	Value Q2 2023	Value Q3 2023	Q-2-Q development
GDP (quarterly growth rate) (%)*	-0.3	0.2	0.0	Negative
Consumer confidence indicator**	n/a	n/a	n/a	
Industrial confidence indicator**	n/a	n/a	n/a	
Construction confidence indicator**	n/a	n/a	n/a	
Production value buildings (index 2015=100)**	n/a	n/a	n/a	
Architects with postponed projects (%)***	43	54	49	Positive
Architects with cancelled projects (%)***	22	40	33	Positive
Building permits residential (index 2015=100)**	n/a	n/a	n/a	
Building permits non-residential (index 2015=100)**	n/a	n/a	n/a	

*Source: * Country statistical office; ** Eurostat, *** Arch-Vision*

*Since the end of 2020 UK data has not been published anymore. The data previously provided to Eurostat was an amalgamation of several administrative data sources used as a proxy. The series was discontinued in 2020 when most of the data sources used to produce the estimate were discontinued due to the COVID-19 pandemic and resources were diverted elsewhere.

Forecast of building volumes in billion euros

(% change year over year)

Total

Legend:
- Renovation (orange)
- New construction (teal)
- Total (black)

| % change in total output | 6.1% | 4.1% | -3.4% | 0% |
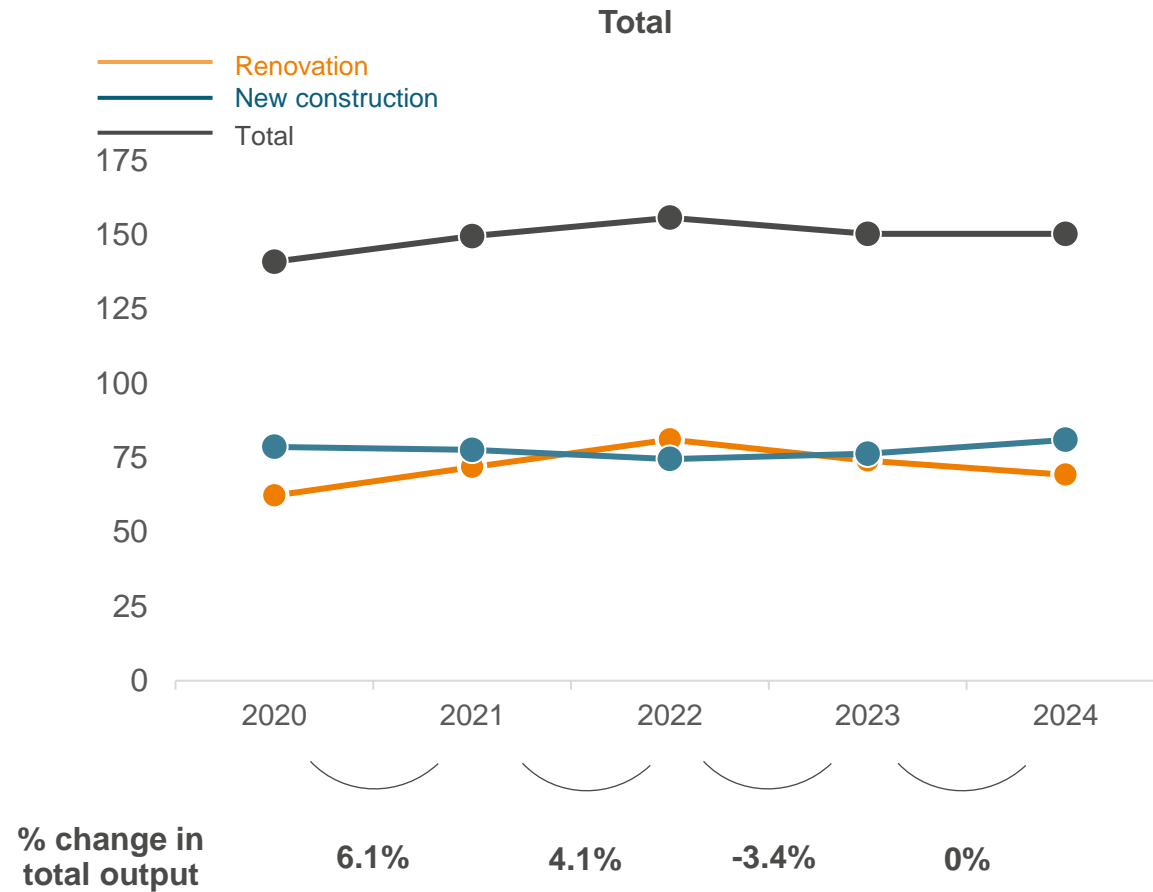
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Economic developments

Germany

Prefab

Appendix

GERMANY

...conclusion

Development of order book

Based on previous year
- Increase of more than 5%
- Increase of 0-5%
- Remains the same (0%)
- Decrease of 0-5%
- Decrease of more than 5%

— Rolling Order book Barometer (based on Q4 2008)
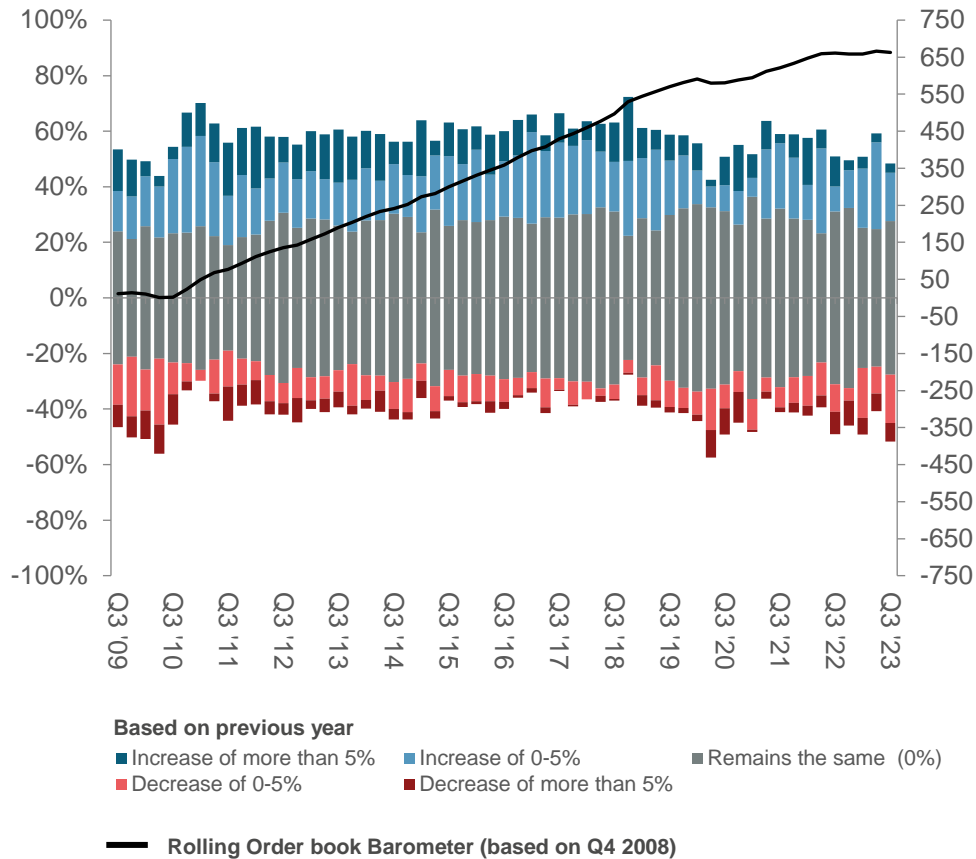
Expecting empty order book in 12 months
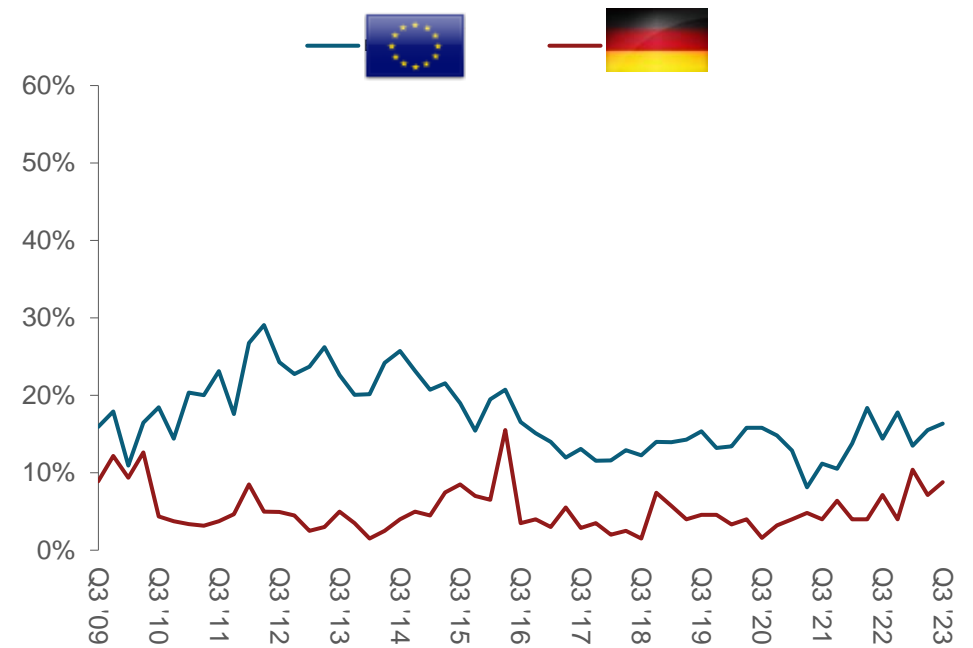
Overall, the development of indicators looks stable in the German market.

Development building permits

- ■ Building permits - Residential
- ■ Building permits - Non-residential
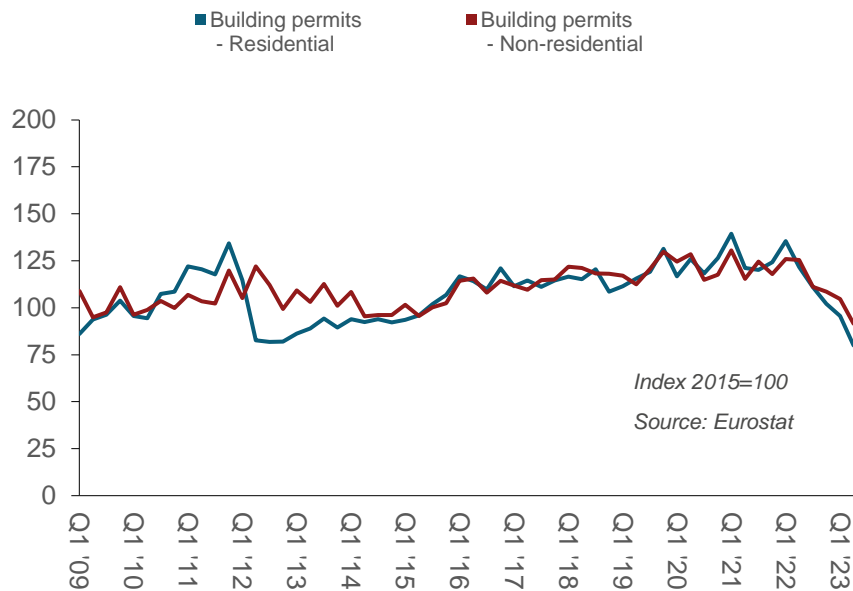
Index 2015=100

Source: Eurostat

Economic and construction related indicators	Value Q3 2022	Value Q2 2023	Value Q3 2023	Q-2-Q development
GDP (quarterly growth rate) (%)*	0.5	0.1	-0.1	Negative
Consumer confidence indicator**	-26.2	-13.3	-14.8	Negative
Industrial confidence indicator**	7.8	-5.2	-14.2	Negative
Construction confidence indicator**	-0.2	-8.9	-16.8	Negative
Production value buildings (index 2015=100)**	108.5	109.7	108.7	Negative
Architects with postponed projects (%)***	41	39	35	Positive
Architects with cancelled projects (%)***	23	23	23	Neutral
Building permits residential (index 2015=100)**	122.7	102.1	79.9	Negative
Building permits non-residential (index 2015=100)**	125.4	104.7	91.6	Negative

*Source: * Country statistical office; ** Eurostat, *** Arch-Vision*

Forecast of building volumes in billion euros

(% change year over year)

Legend:
- Renovation
- New construction
- Total

Total

	2020	2021	2022	2023	2024
% change in total output		1.6%	-1.4%	-4.2%	-1.5%
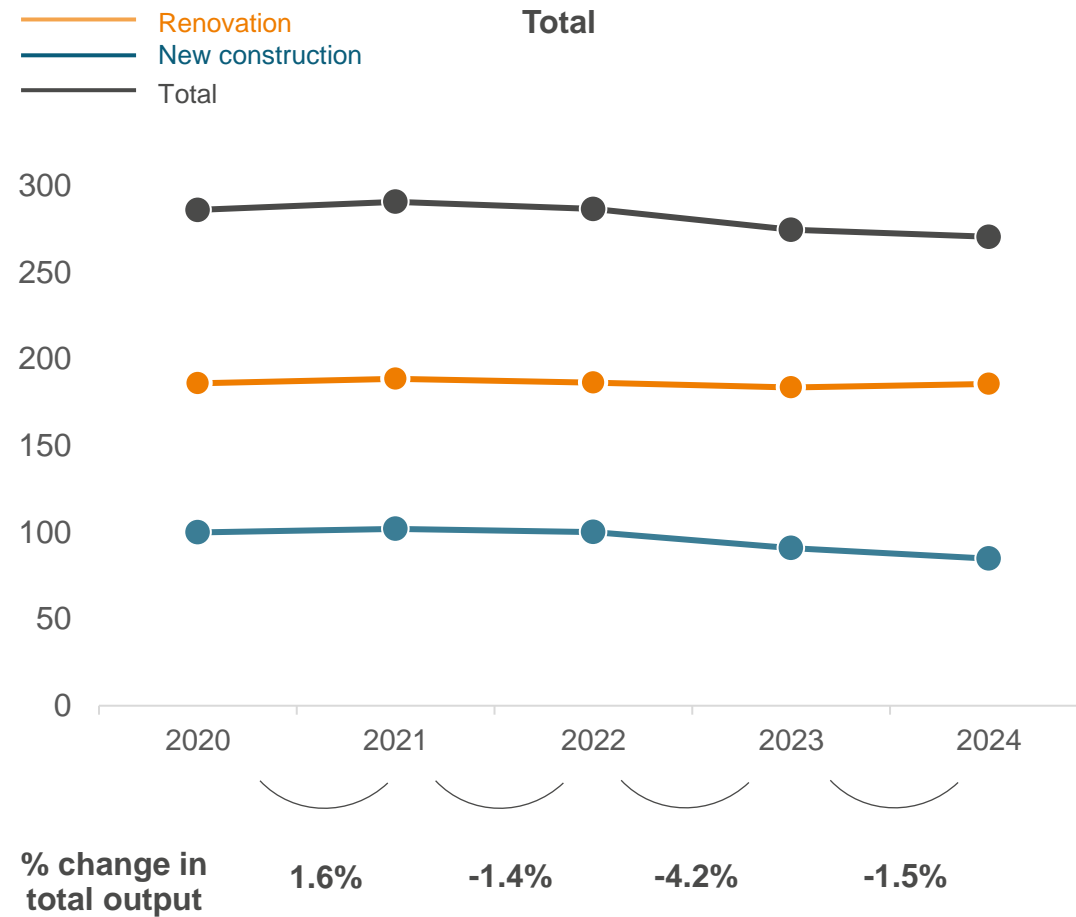
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Economic developments

France

Prefab

Appendix

FRANCE

...conclusion

Development of order book

Based on previous year
- ■ Increase of more than 5%
- ■ Increase of 0-5%
- ■ Remains the same (0%)
- ■ Decrease of 0-5%
- ■ Decrease of more than 5%

— **Rolling Order book Barometer (based on Q4 2008)**

The sharp drop on residential building permits has come to an end in the first quarter of Q1 2023.

Development building permits
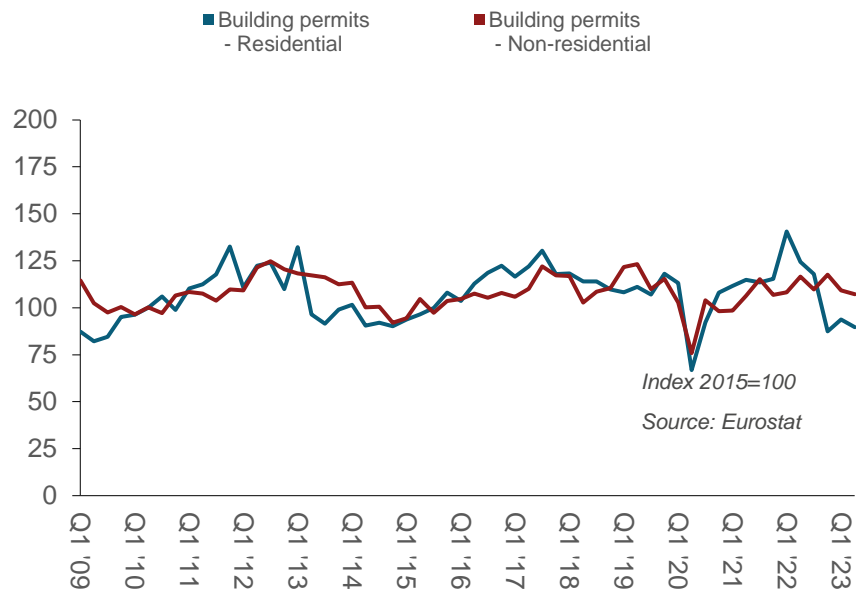
■ Building permits - Residential   ■ Building permits - Non-residential

Index 2015=100

Source: Eurostat

Economic and construction related indicators	Value Q3 2022	Value Q2 2023	Value Q3 2023	Q-2-Q development
GDP (quarterly growth rate) (%)*	0.2	0.6	0.1	Negative
Consumer confidence indicator**	-20.9	-17.0	-15.0	Positive
Industrial confidence indicator**	-4.0	-9.3	-9.8	Negative
Construction confidence indicator**	3.2	-1.6	-4.0	Negative
Production value buildings (index 2015=100)**	97.3	104.9	103.2	Negative
Architects with postponed projects (%)***	53	45	50	Negative
Architects with cancelled projects (%)***	30	40	36	Positive
Building permits residential (index 2015=100)**	123.8	93.8	89.6	Negative
Building permits non-residential (index 2015=100)**	116.8	109.2	107.2	Negative

*Source: * Country statistical office; ** Eurostat, *** Arch-Vision*

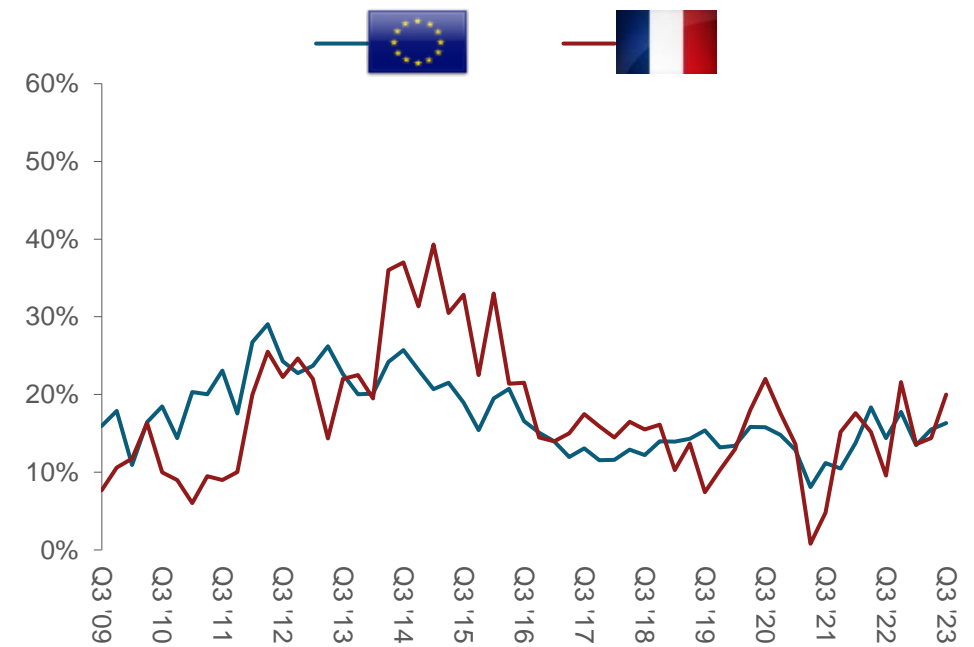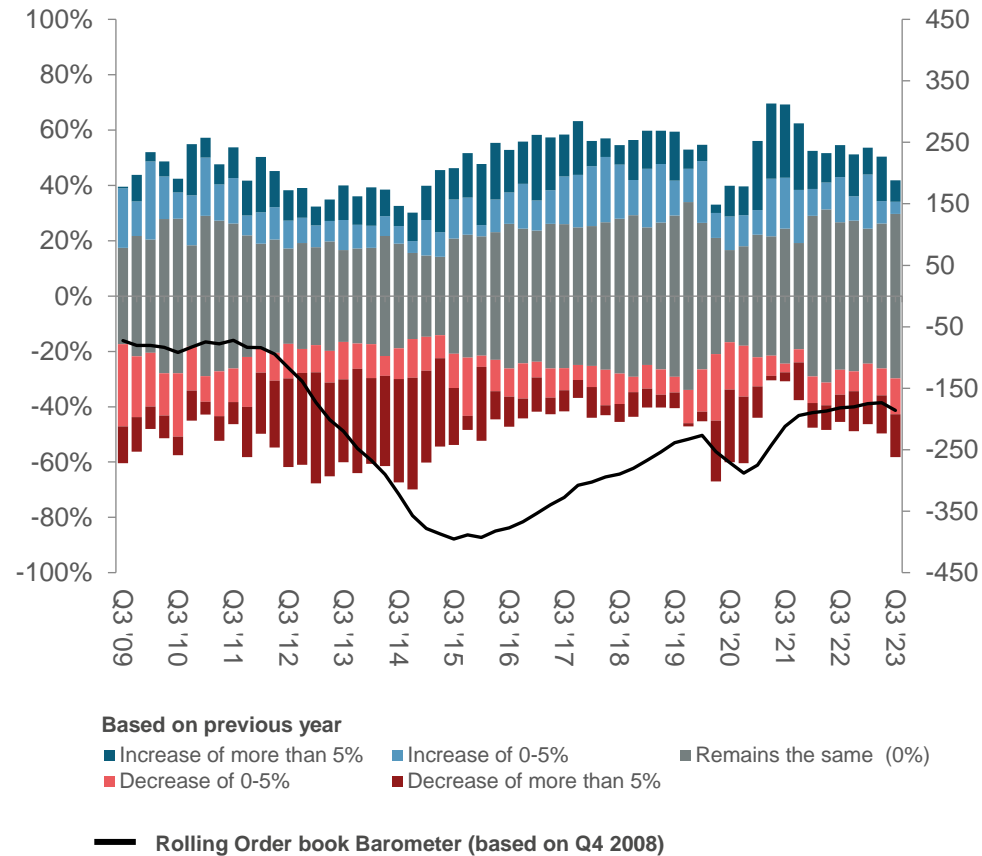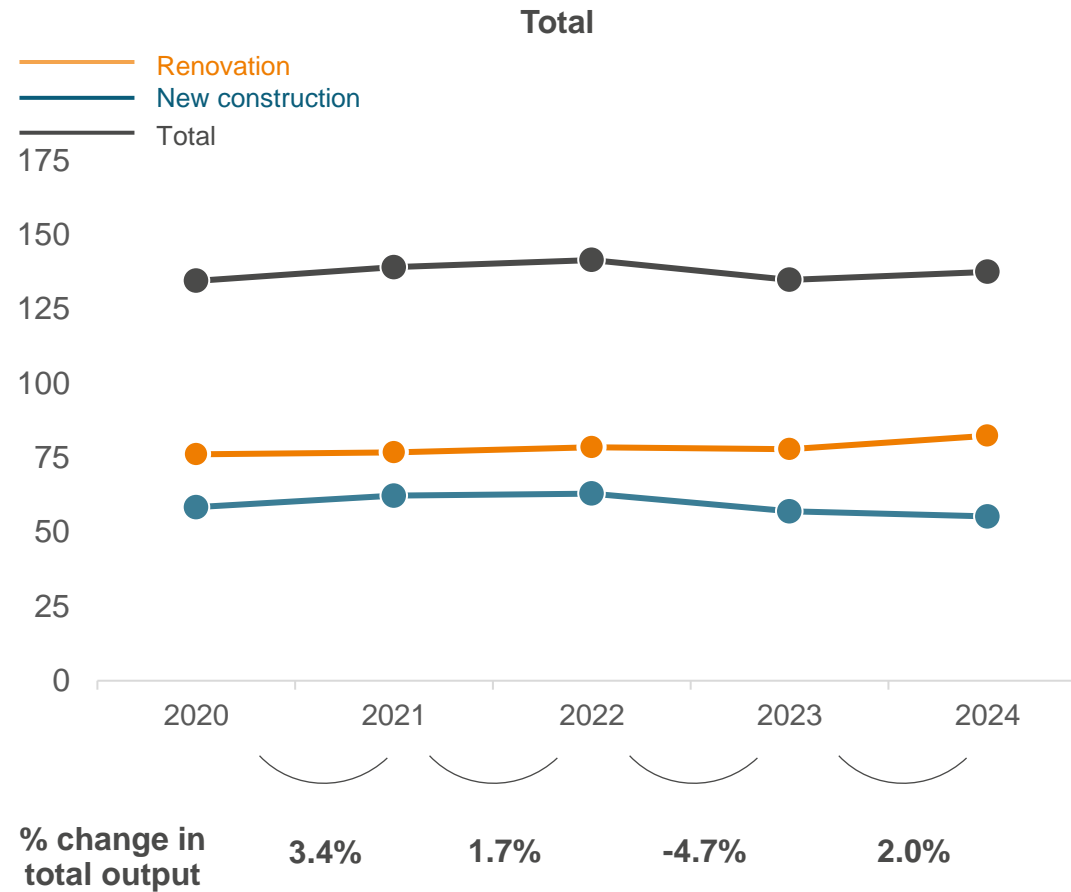# Forecast of building volumes in billion euros

(% change year over year)

Total

— Renovation
— New construction
— Total

| % change in total output | 3.4% | 1.7% | -4.7% | 2.0% |

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Economic developments

Spain

Prefab

Appendix

SPAIN

...conclusion

Development of order book

Based on previous year
- ■ Increase of more than 5%
- ■ Increase of 0-5%
- ■ Remains the same (0%)
- ■ Decrease of 0-5%
- ■ Decrease of more than 5%

— Rolling Order book Barometer (based on Q4 2008)

Expecting empty order book in 12 months
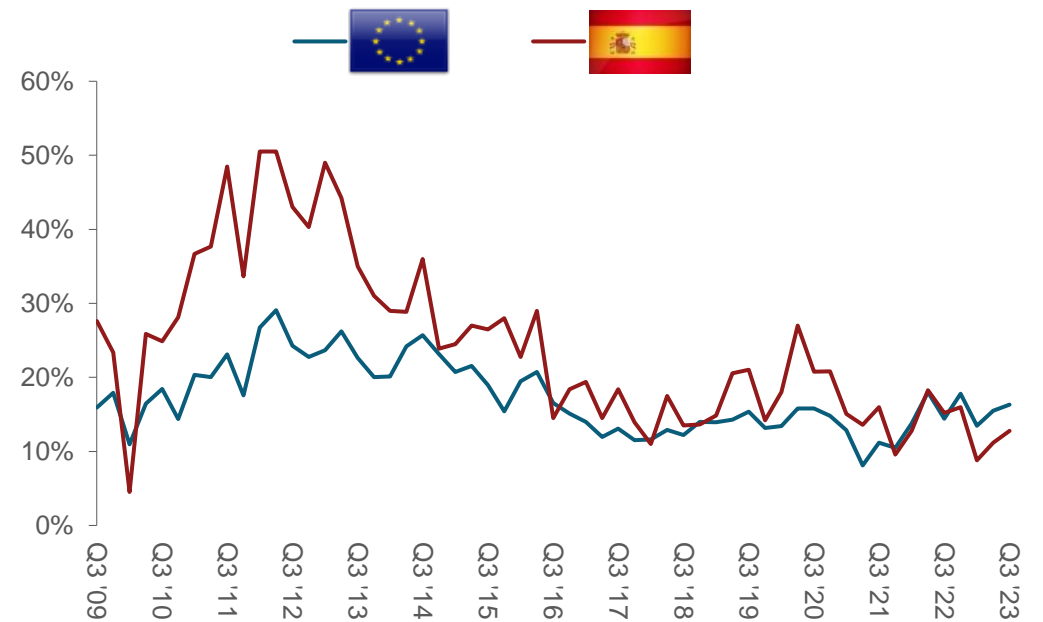
Building permits in Spain are skyrocketing since beginning of 2021 and increase quarter on quarter.

Development building permits

■ Building permits
  - Residential

■ Building permits
  - Non-residential

Index 2015=100

Source: Eurostat
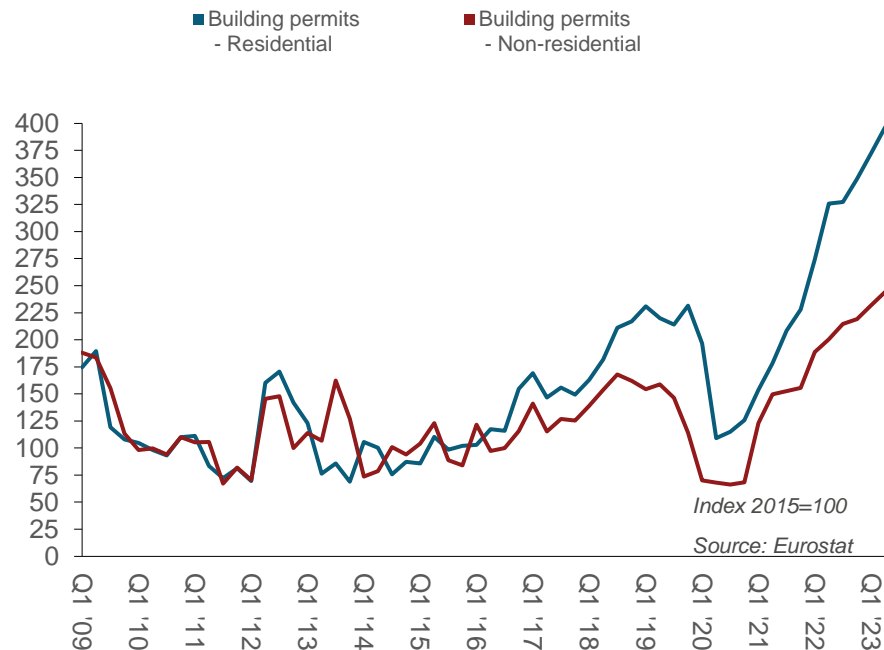
Economic and construction related indicators	Value Q3 2022	Value Q2 2023	Value Q4 2023	Q-2-Q development
GDP (quarterly growth rate) (%)*	0.2	0.4	0.3	Negative
Consumer confidence indicator**	-32.5	-18.8	-15.8	Positive
Industrial confidence indicator**	-5.2	-5.3	-8.3	Negative
Construction confidence indicator**	5.9	13.3	5.9	Negative
Production value buildings (index 2015=100)**	77.3	83.4	81.2	Negative
Architects with postponed projects (%)***	39	40	40	Same
Architects with cancelled projects (%)***	30	34	20	Positive
Building permits residential (index 2015=100)**	325.9	372.3	396.4	Positive
Building permits non-residential (index 2015=100)**	200.4	231.8	244.2	Positive

*Source: * Country statistical office; ** Eurostat, *** Arch-Vision*

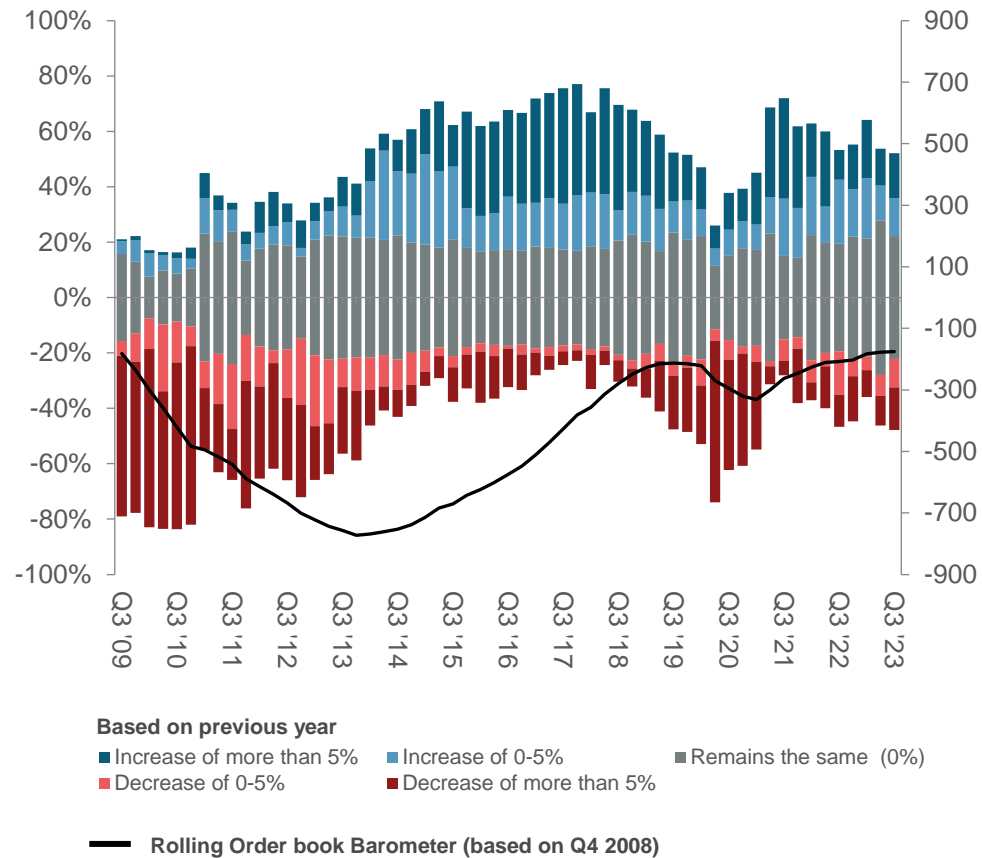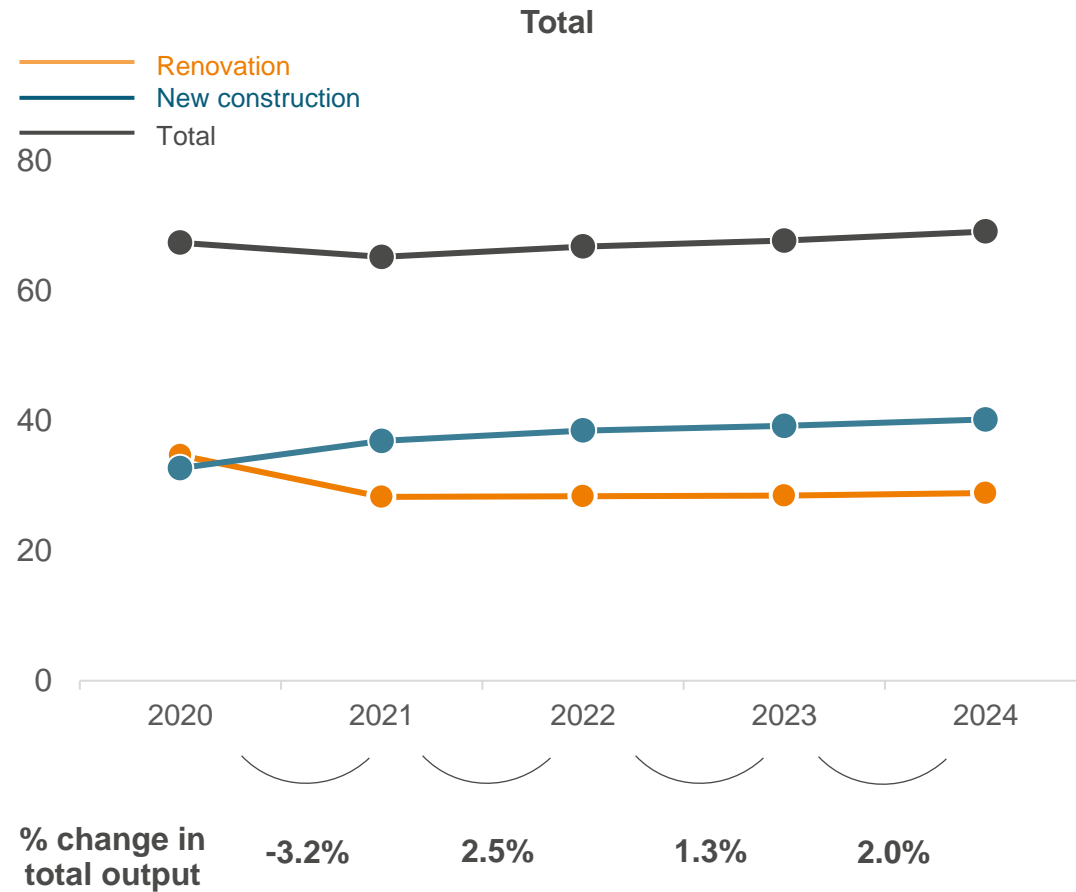# Forecast of building volumes in billion euros

(% change year over year)

Total

- Renovation
- New construction
- Total

	2020	2021	2022	2023	2024
% change in total output		-3.2%	2.5%	1.3%	2.0%

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Economic developments

	Italy

Prefab

Appendix

ITALY

...conclusion

Development of order book

Based on previous year
- ■ Increase of more than 5%
- ■ Increase of 0-5%
- ■ Remains the same (0%)
- ■ Decrease of 0-5%
- ■ Decrease of more than 5%

— **Rolling Order book Barometer (based on Q4 2008)**
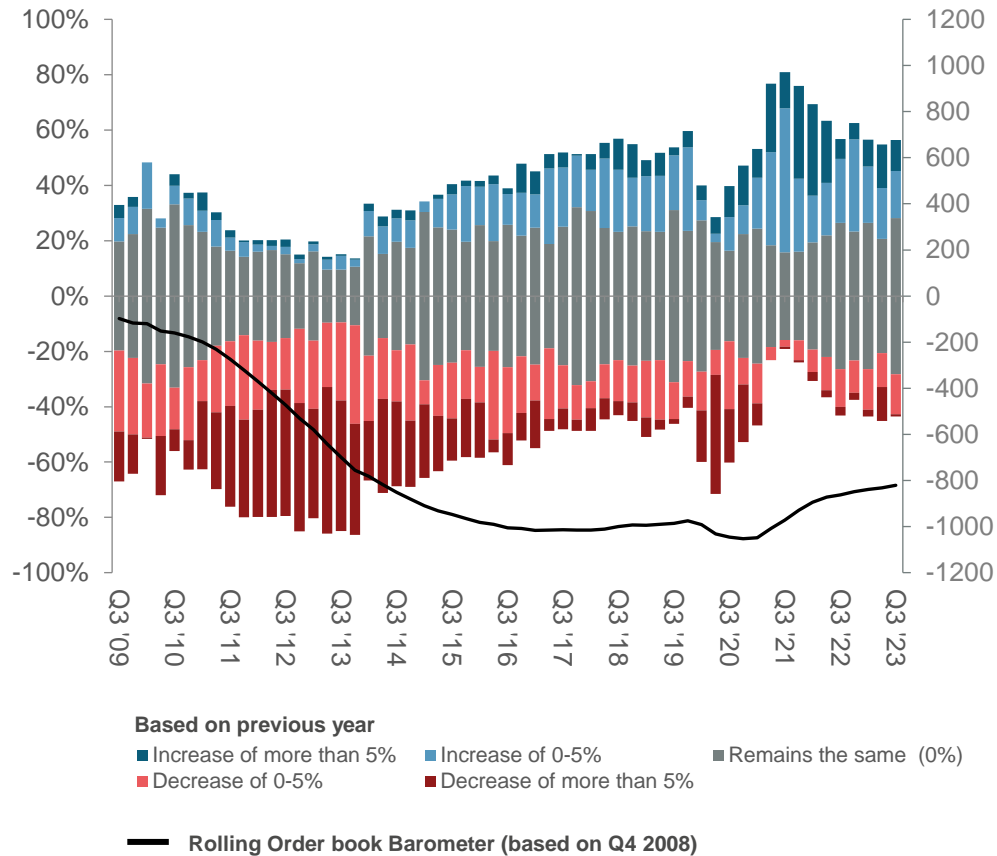
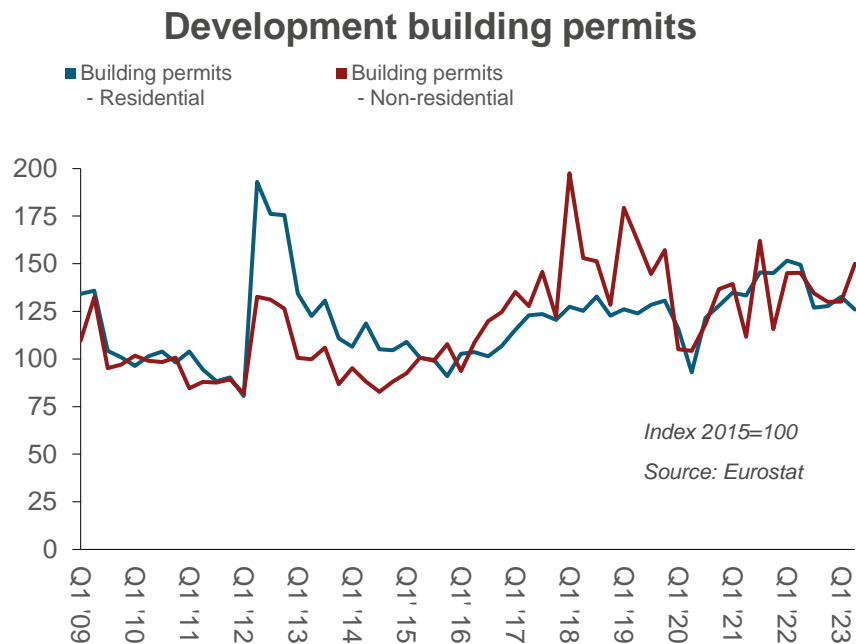## Expecting empty order book in 12 months

The Italian building permits are stable and for non-residential show a positive change in 2023.

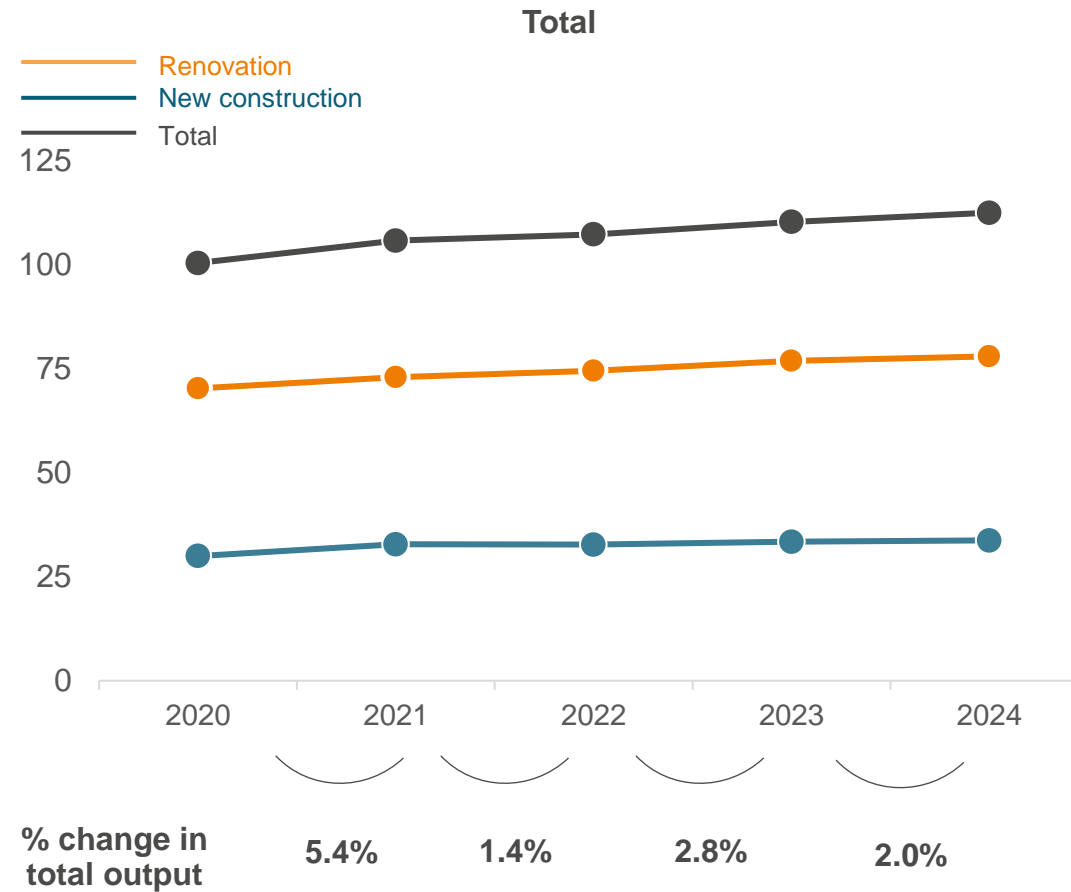## Development building permits

■ Building permits - Residential   ■ Building permits - Non-residential

Index 2015=100

Source: Eurostat

Economic and construction related indicators	Value Q3 2022	Value Q2 2023	Value Q3 2023	Q-2-Q development
GDP (quarterly growth rate) (%)*	0.5	-0.4	0.0	Positive
Consumer confidence indicator**	-26.3	-15.7	-16.6	Negative
Industrial confidence indicator**	-1.4	-3.9	-7.3	Negative
Construction confidence indicator**	5.4	6.7	-7.1	Negative
Production value buildings (index 2015=100)**	132.6	131.6	132.8	Positive
Architects with postponed projects (%)***	39	44	45	Negative
Architects with cancelled projects (%)***	17	26	26	Same
Building permits residential (index 2015=100)**	151.3	130.1	126.0	Negative
Building permits non-residential (index 2015=100)**	151.8	129.9	149.9	Positive

*Source: * Country statistical office; ** Eurostat, *** Arch-Vision*

Note: No data about the production of buildings in Italy. Only aggregated data for the construction sector as a whole (buildings & civil engineering works) available.

Forecast of building volumes in billion euros

(% change year over year)

Total

Legend:
- **Renovation** (orange)
- **New construction** (teal)
- **Total** (dark gray)

| % change in total output | 5.4% | 1.4% | 2.8% | 2.0% |

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Economic developments

Netherlands

Prefab

Appendix

NETHERLANDS

...conclusion

Development of order book

Expecting empty order book in 12 months

Based on previous year
- ■ Increase of more than 5%
- ■ Increase of 0-5%
- ■ Remains the same (0%)
- ■ Decrease of 0-5%
- ■ Decrease of more than 5%

— **Rolling Order book Barometer (based on Q4 2008)**
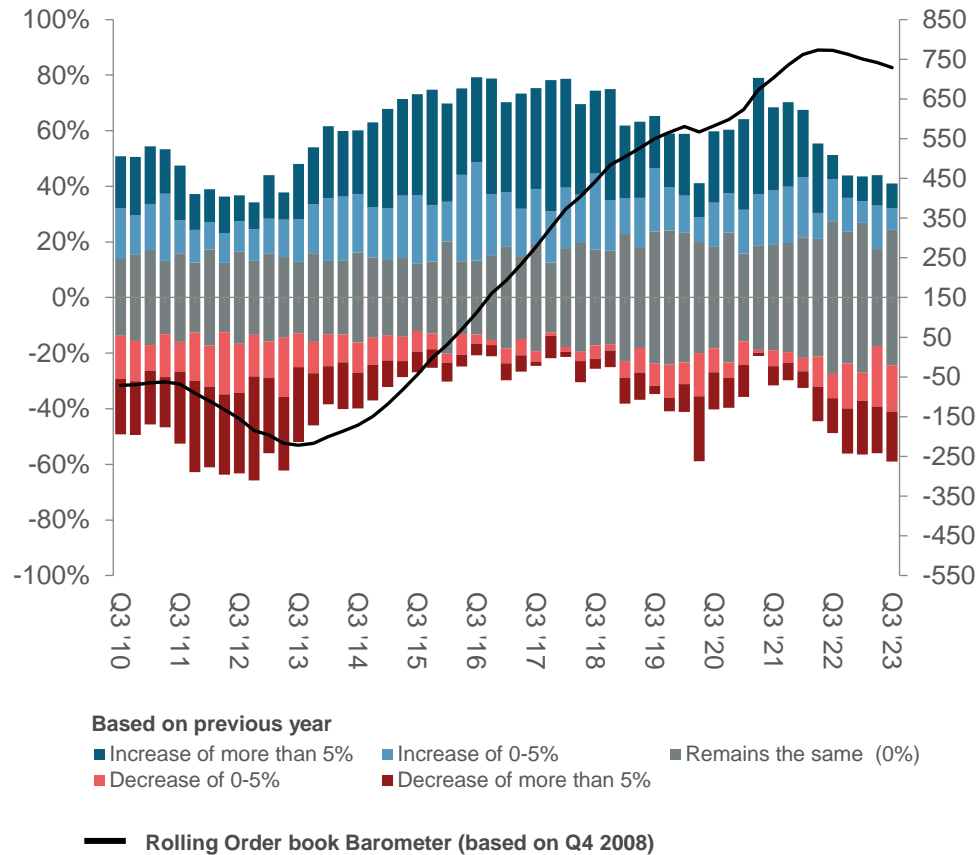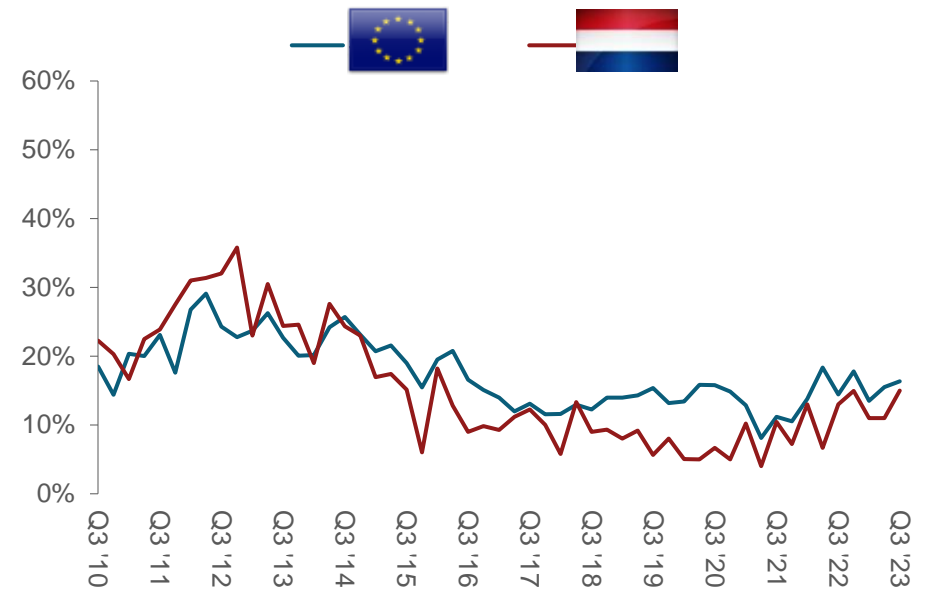
The drop in permits that was see for more than a year came to a hold for the residential segment. For the firs time in more than two years slight improvement was reported.
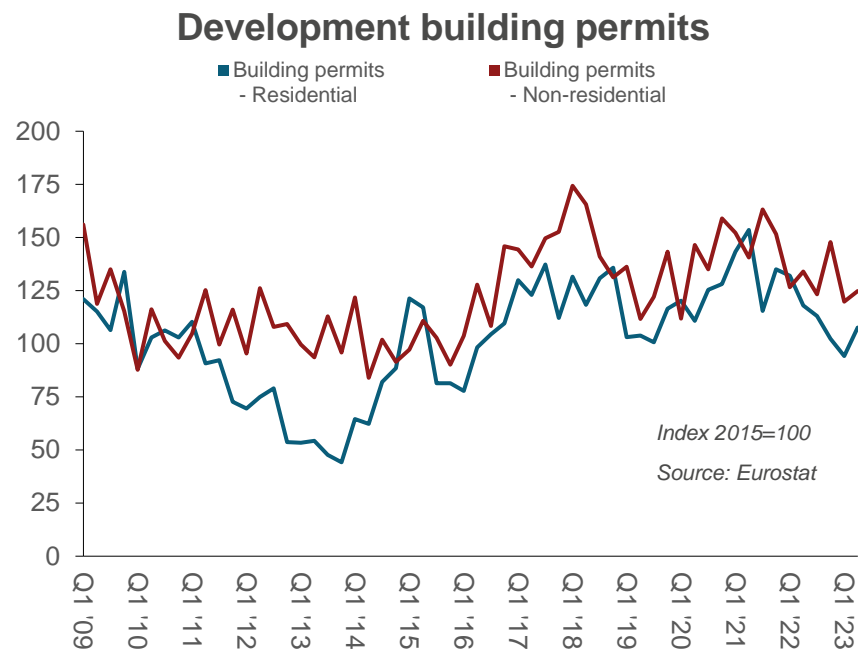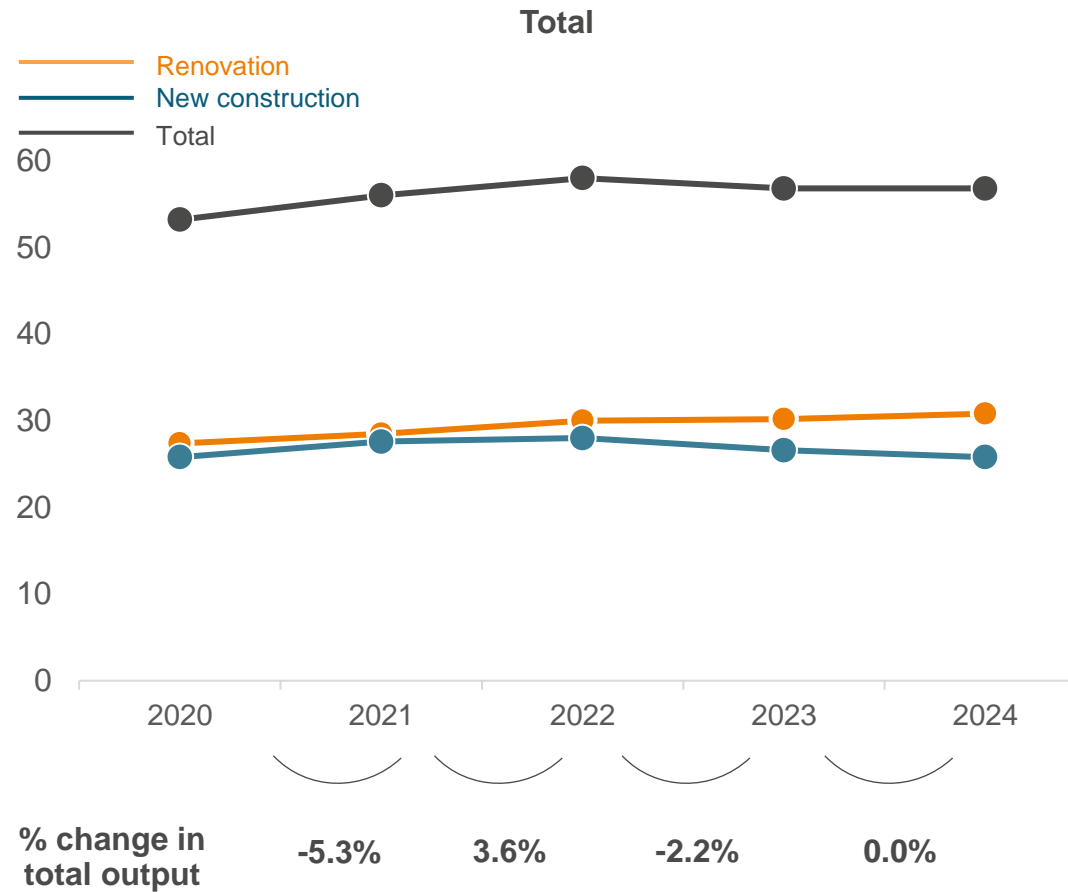
Development building permits

■ Building permits - Residential   ■ Building permits - Non-residential

Index 2015=100

Source: Eurostat

Economic and construction related indicators	Value Q3 2022	Value Q2 2023	Value Q3 2023	Q-2-Q development
GDP (quarterly growth rate) (%)*	2.4	-0.4	-0.2	Positive
Consumer confidence indicator**	-30.4	-18.7	-17.8	Positive
Industrial confidence indicator**	2.4	-1.0	-4.3	Negative
Construction confidence indicator**	16.3	5.2	1.9	Negative
Production value buildings (index 2015=100)**	135.5	146.6	146.2	Negative
Architects with postponed projects (%)***	59	44	50	Negative
Architects with cancelled projects (%)***	35	25	25	Same
Building permits residential (index 2015=100)**	127.3	94.2	107.6	Positive
Building permits non-residential (index 2015=100)**	132.2	119.7	124.7	Positive

*Source: * Country statistical office; ** Eurostat, *** Arch-Vision*

Note: No data about the production of buildings in the Netherlands. Only aggregated data for the construction sector as a whole (buildings & civil engineering works) available.

Forecast of building volumes in billion euros

(% change year over year)

Total

— Renovation
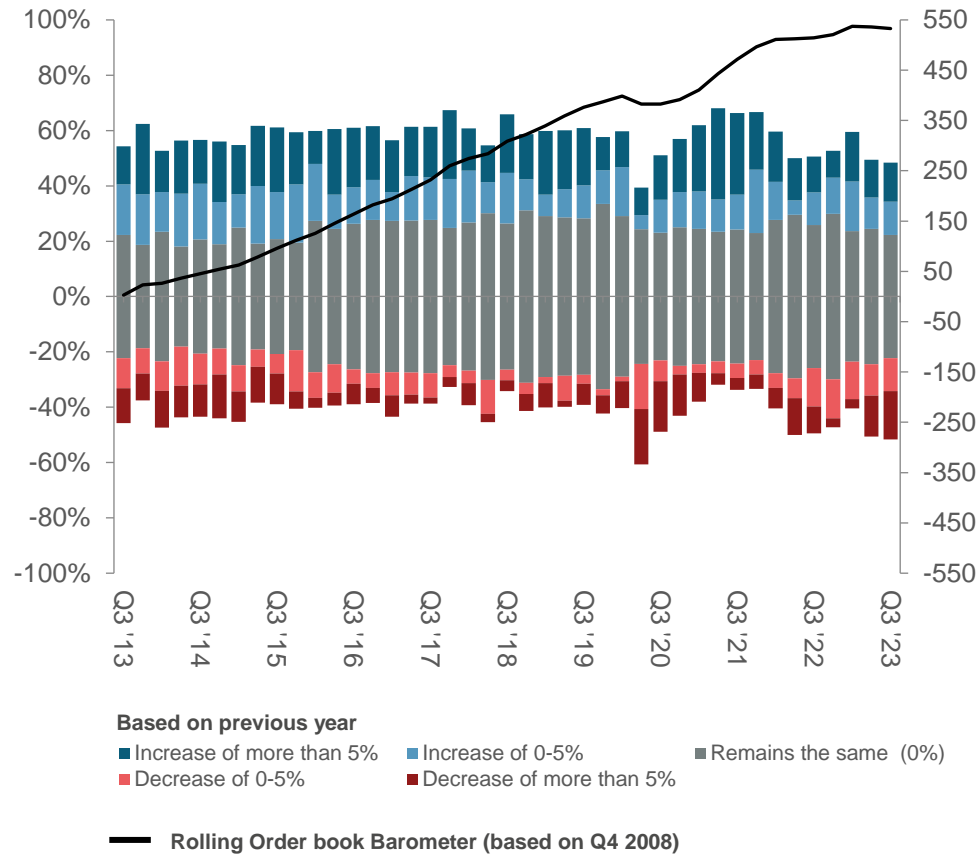— New construction
— Total

	2020	2021	2022	2023	2024
% change in total output		-5.3%	3.6%	-2.2%	0.0%

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BELGIUM

...conclusion

Development of order book

Based on previous year
- ■ Increase of more than 5%
- ■ Increase of 0-5%
- ■ Remains the same (0%)
- ■ Decrease of 0-5%
- ■ Decrease of more than 5%

— **Rolling Order book Barometer (based on Q4 2008)**

Expecting empty order book in 12 months

Other indicators for the Belgium market show mixed signals
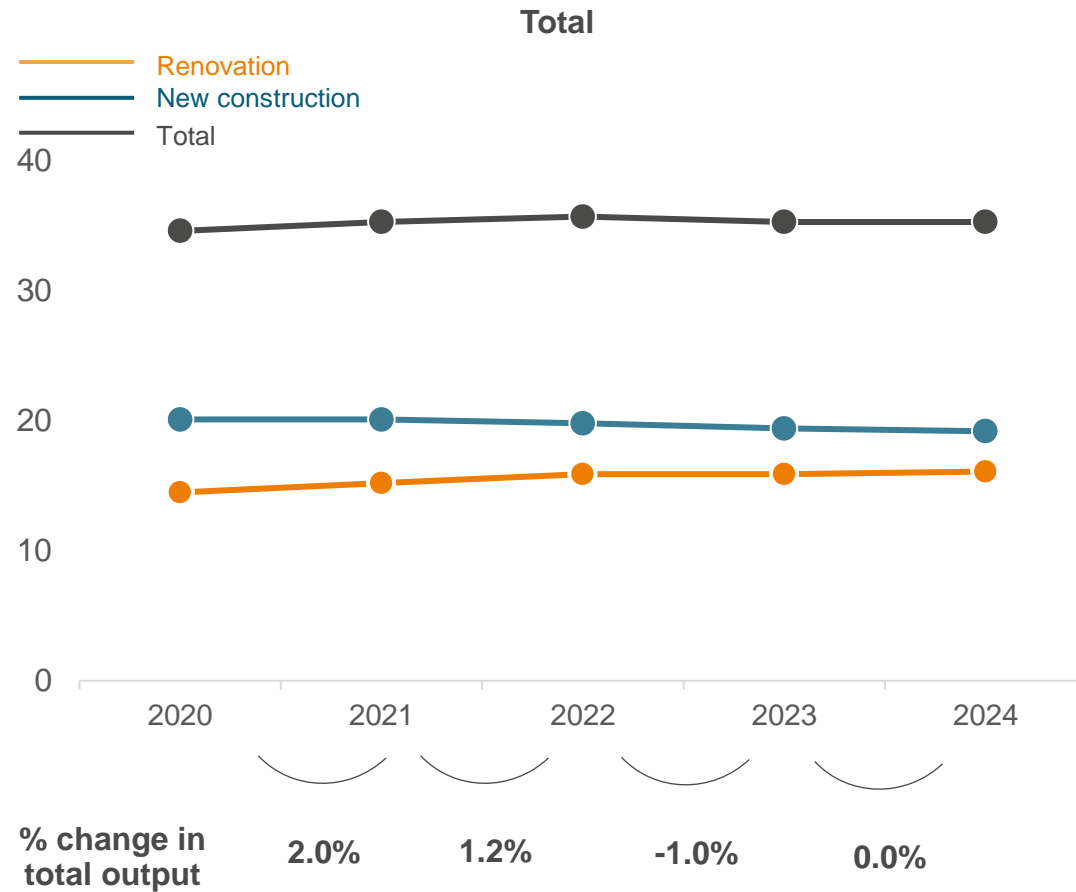
Development building permits
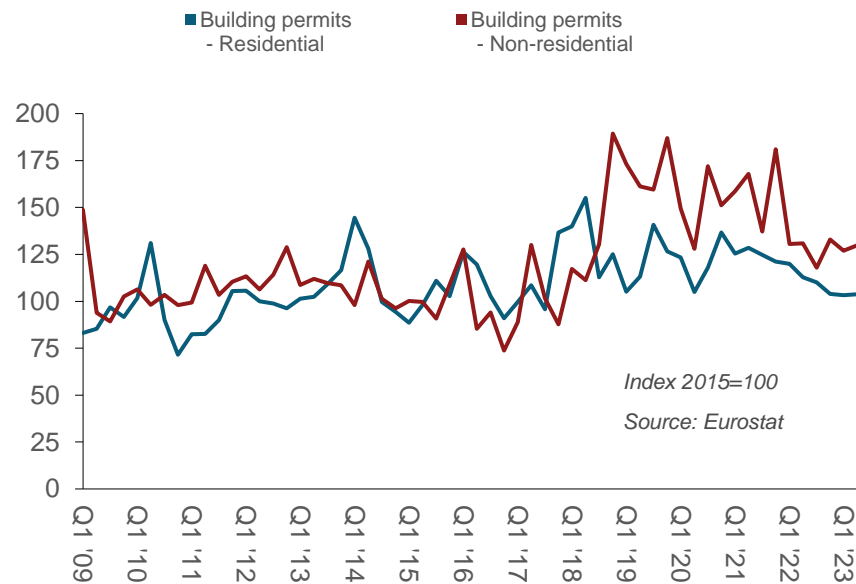
■ Building permits - Residential   ■ Building permits - Non-residential

Index 2015=100

Source: Eurostat

Economic and construction related indicators	Value Q3 2022	Value Q2 2023	Value Q3 2023	Q-2-Q development
GDP (quarterly growth rate) (%)*	0.2	0.3	0.5	Positive
Consumer confidence indicator**	-22.5	-13.7	-11.7	Positive
Industrial confidence indicator**	-11.4	-17.7	-20.5	Negative
Construction confidence indicator**	3.5	0.2	-4.5	Negative
Production value buildings (index 2015=100)**	95.9	96.7	96.8	Same
Architects with postponed projects (%)***	48	47	42	Positive
Architects with cancelled projects (%)***	33	32	30	Positive
Building permits residential (index 2015=100)**	112.6	103.3	103.8	Positive
Building permits non-residential (index 2015=100)**	130.5	127.0	129.9	Positive

*Source: * Country statistical office; ** Eurostat, *** Arch-Vision*

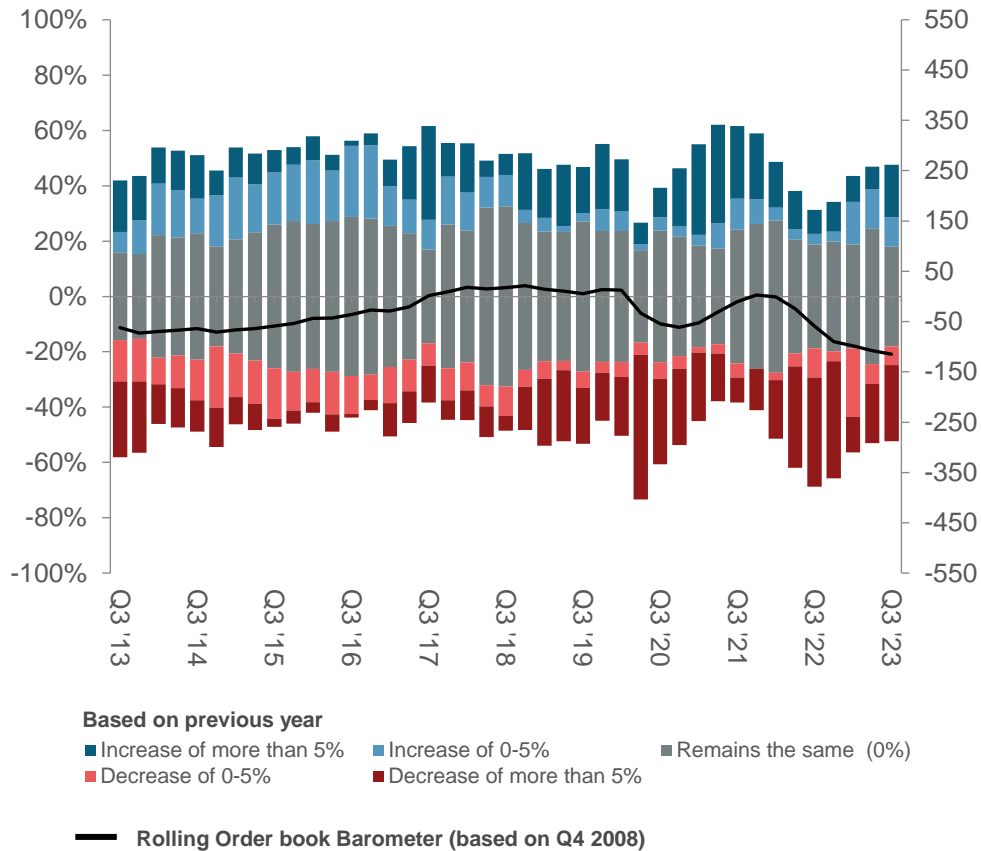# Forecast of building volumes in billion euros

(% change year over year)

Total

| % change in total output | 2.0% | 1.2% | -1.0% | 0.0% |

Index

| Economic developments |
| Poland |
| Prefab |
| Appendix |

POLAND

...conclusion

Development of order book

Based on previous year

- Increase of more than 5%
- Increase of 0-5%
- Remains the same (0%)
- Decrease of 0-5%
- Decrease of more than 5%

— **Rolling Order book Barometer (based on Q4 2008)**

Expecting empty order book in 12 months
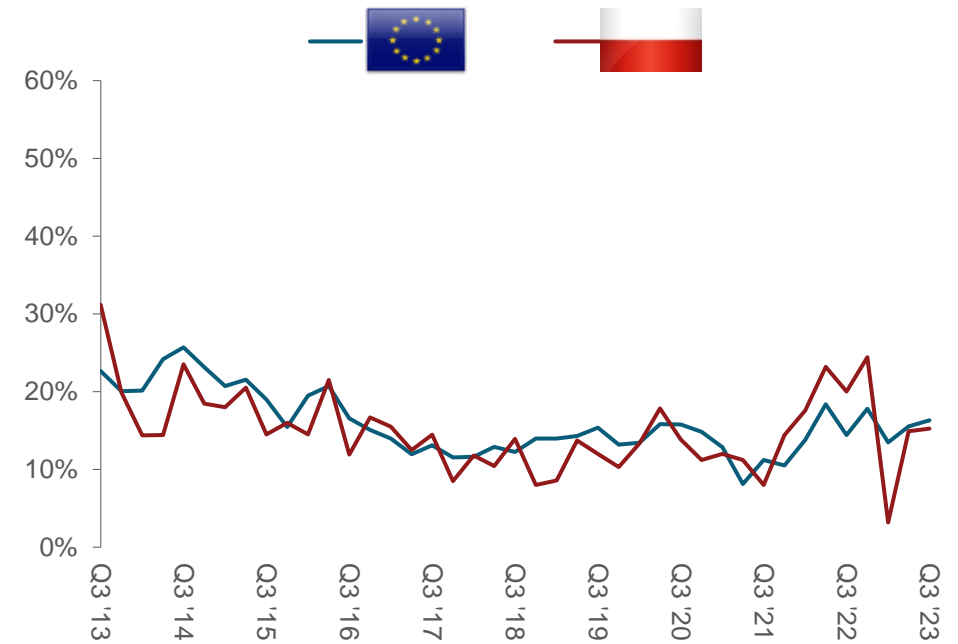
The declining building permits are a serious indication of a declining construction market in Poland.
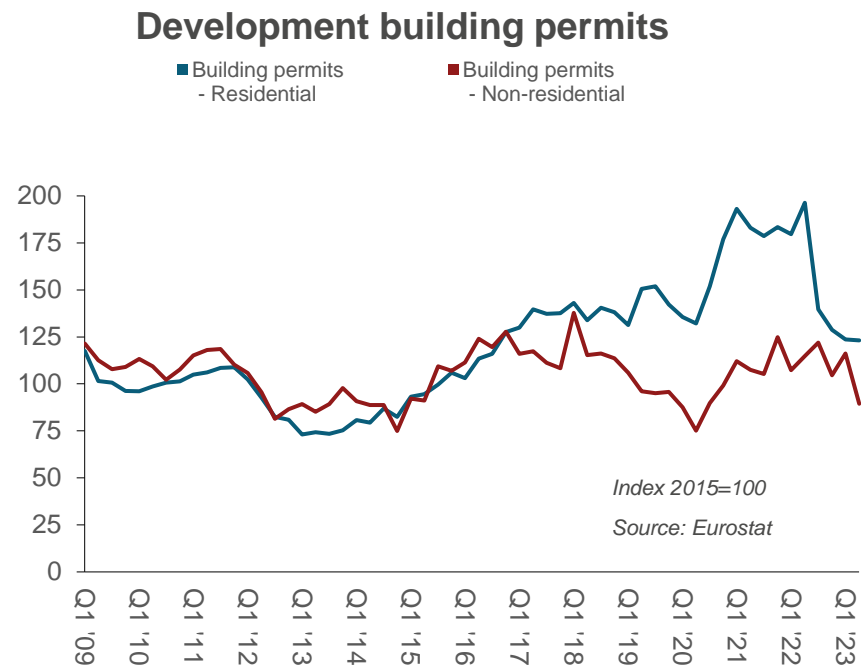
Development building permits

■ Building permits - Residential   ■ Building permits - Non-residential

Index 2015=100

Source: Eurostat

Economic and construction related indicators	Value Q3 2022	Value Q2 2023	Value Q3 2023	Q-2-Q development
GDP (quarterly growth rate) (%)*	1.0	0.3	1.4	Positive
Consumer confidence indicator**	-18.5	-8.4	-4.2	Positive
Industrial confidence indicator**	-20.5	-20.4	-19.4	Positive
Construction confidence indicator**	-23.5	-22.4	-20.5	Positive
Production value buildings (index 2015=100)**	122.9	123.7	122.7	Negative
Architects with postponed projects (%)***	39	29	36	Negative
Architects with cancelled projects (%)***	28	25	24	Positive
Building permits residential (index 2015=100)**	196.9	123.6	123.1	Negative
Building permits non-residential (index 2015=100)**	117.4	116.2	89.4	Negative

*Source: * Country statistical office; ** Eurostat, *** Arch-Vision*

Forecast of building volumes in billion euros
(% change year over year)

Total

— Renovation
— New construction
— Total

% change in total output: 4.7%   -4.3%   -7.1%   -2.0%

Index

...conclusion

Share of Prefab users in Europe
What percentage of your projects (in past 2 years) contained some form of prefab building elements or off-site construction? [SPONTANEOUS]
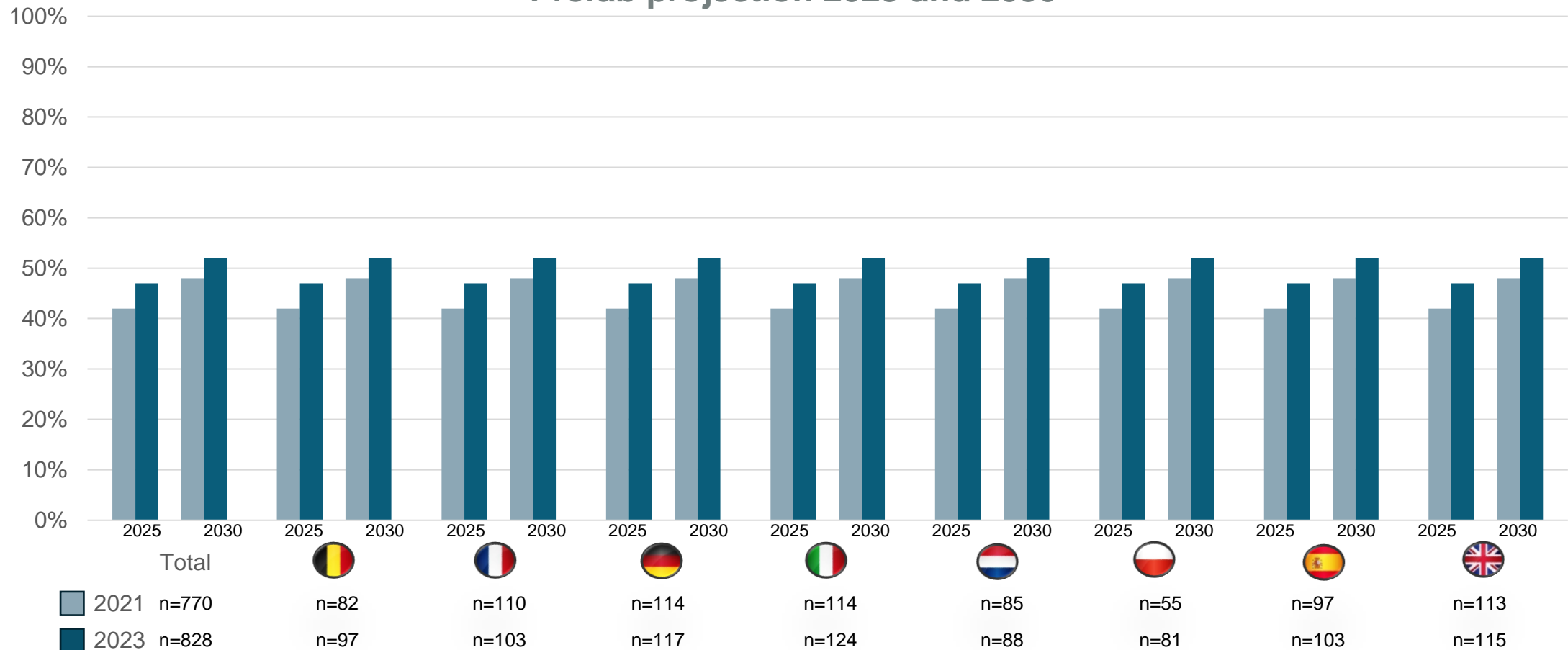

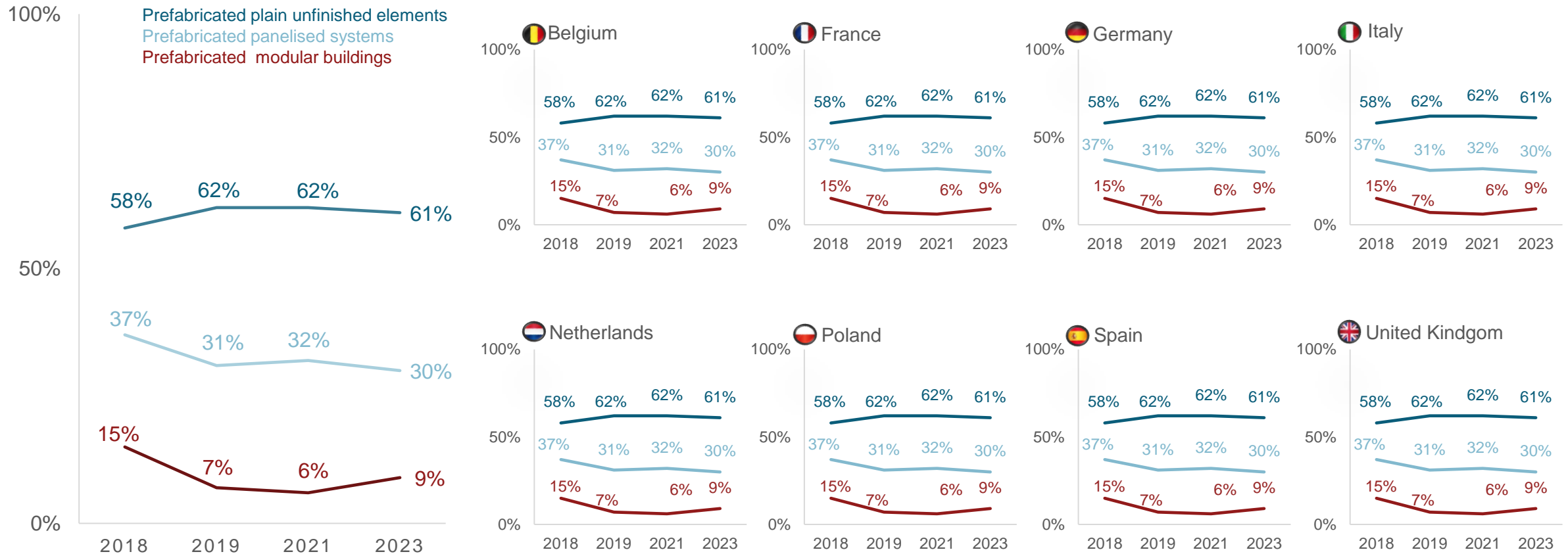| Country	Prefab ranking 2018	Prefab ranking 2019	Prefab ranking 2021	Prefab ranking 2023
Belgium	60%	60%	1st (60%)	1st (60%)
France	40%	40%	2nd (40%)	2nd (40%)
Germany	29%	29%	3rd (29%)	3rd (29%)
Italy	23%	23%	4th (23%)	4th (23%)
Netherlands	19%	19%	5th (19%)	5th (19%)
Poland	16%	16%	6th (16%)	6th (16%)
Spain	13%	13%	7th (13%)	7th (13%)
United Kingdom	10%	10%	8th (10%)	8th (10%)

...conclusion

A potential jump in Prefab usage
What are your projections for using Prefab in your 2025 and 2030 projects? [SPONTANEOUS]

Prefab projection 2025 and 2030

	Total	🇧🇪	🇫🇷	🇩🇪	🇮🇹	🇳🇱	🇵🇱	🇪🇸	🇬🇧
■ 2021	n=770	n=82	n=110	n=114	n=114	n=85	n=55	n=97	n=113
■ 2023	n=828	n=97	n=103	n=117	n=124	n=88	n=81	n=103	n=115

...conclusion

Percentage of projects containing prefabricated elements compared with 2021, 2019 and 2018
When you look at your projects which included any prefab from the past 2 years, what percentage of your projects contained the following types of prefabrication?

Prefabricated plain unfinished elements
Prefabricated panelised systems
Prefabricated modular buildings

Belgium

France

Germany

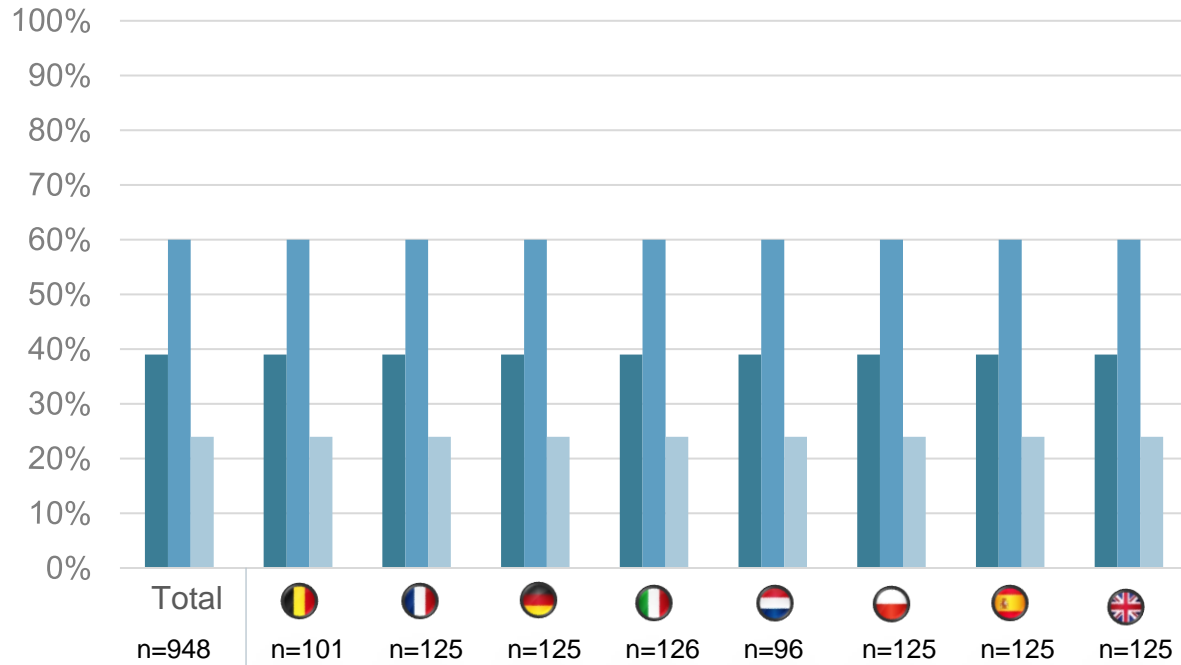Italy

Netherlands

Poland

Spain
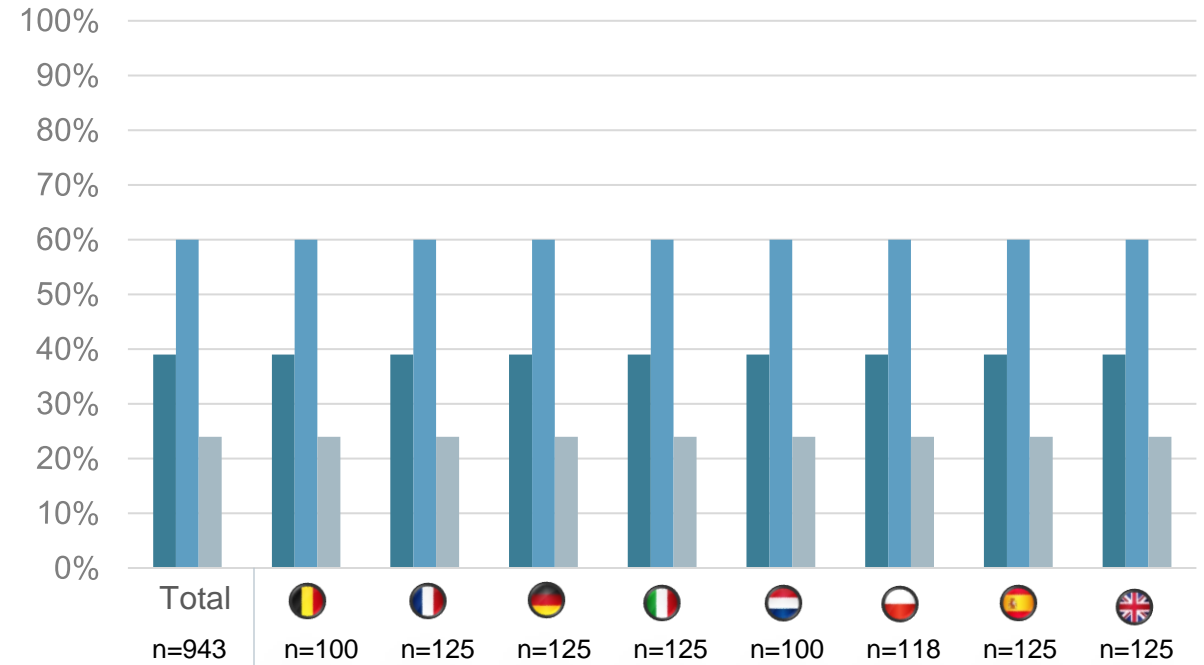
United Kingdom

...conclusion

Expected growth of prefabricated elements in 2021 and 2023
Which type of prefabrication do you expect to grow the most in the coming years?

Prefabricated plain unfinished elements
Prefabricated panelised systems
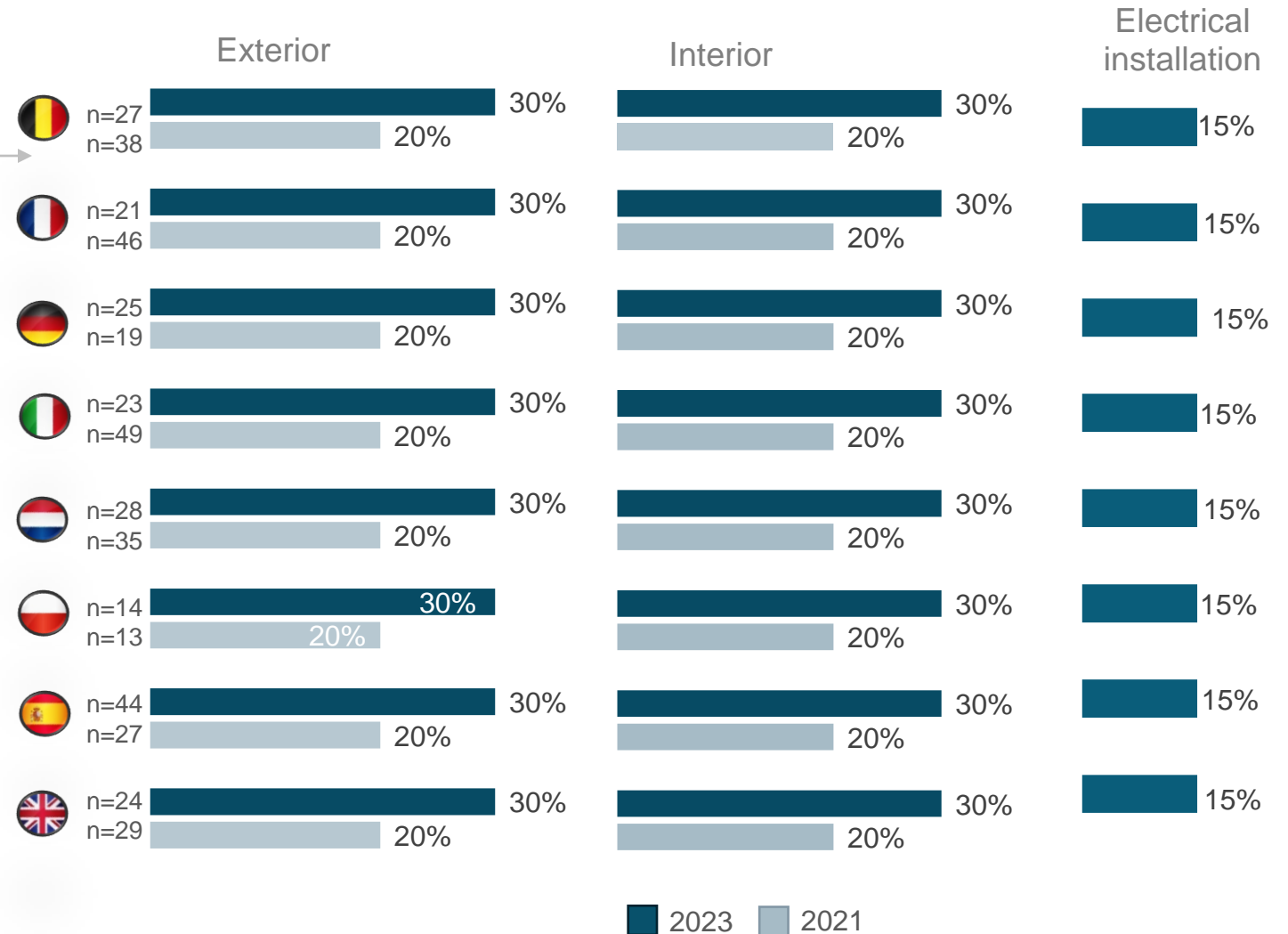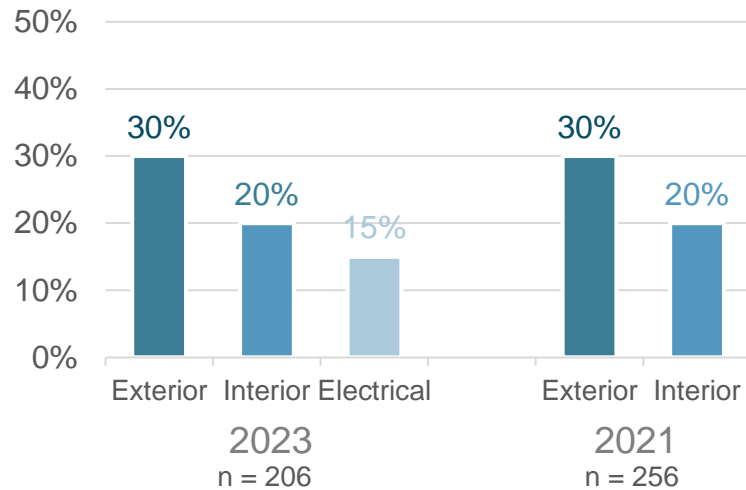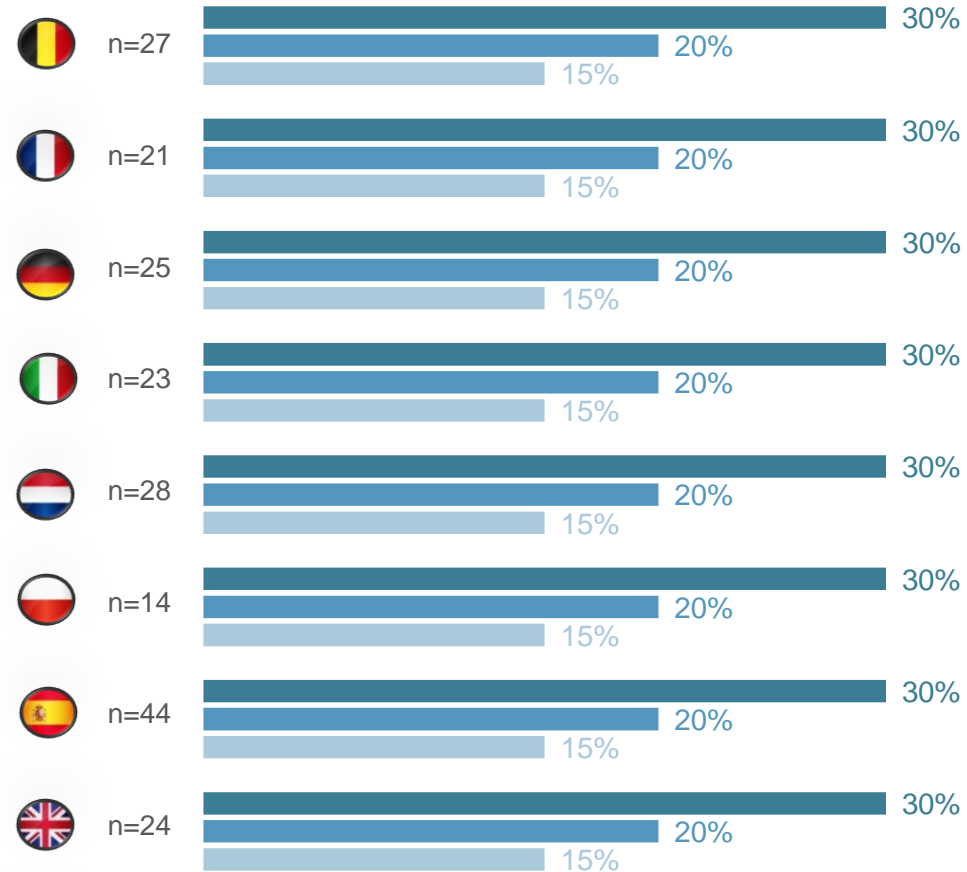Prefabricated modular buildings

2021

	Total	🇧🇪	🇫🇷	🇩🇪	🇮🇹	🇳🇱	🇵🇱	🇪🇸	🇬🇧
	n=948	n=101	n=125	n=125	n=126	n=96	n=125	n=125	n=125

2023

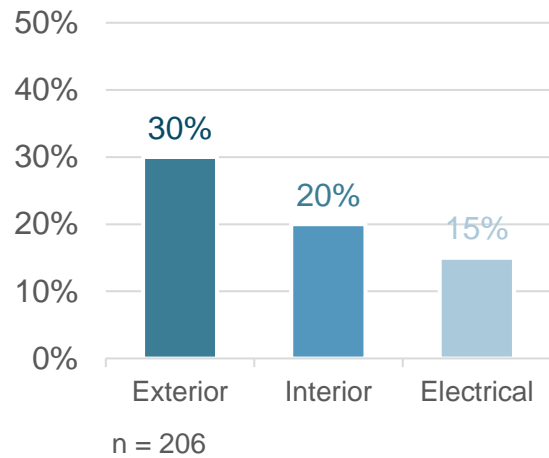|	Total	🇧🇪	🇫🇷	🇩🇪	🇮🇹	🇳🇱	🇵🇱	🇪🇸	🇬🇧
	n=943	n=100	n=125	n=125	n=125	n=100	n=118	n=125	n=125

...conclusion

The share of exterior and interior finishing
What share of your prefabricated panels had:
...exterior finishing or cladding applied off-site?
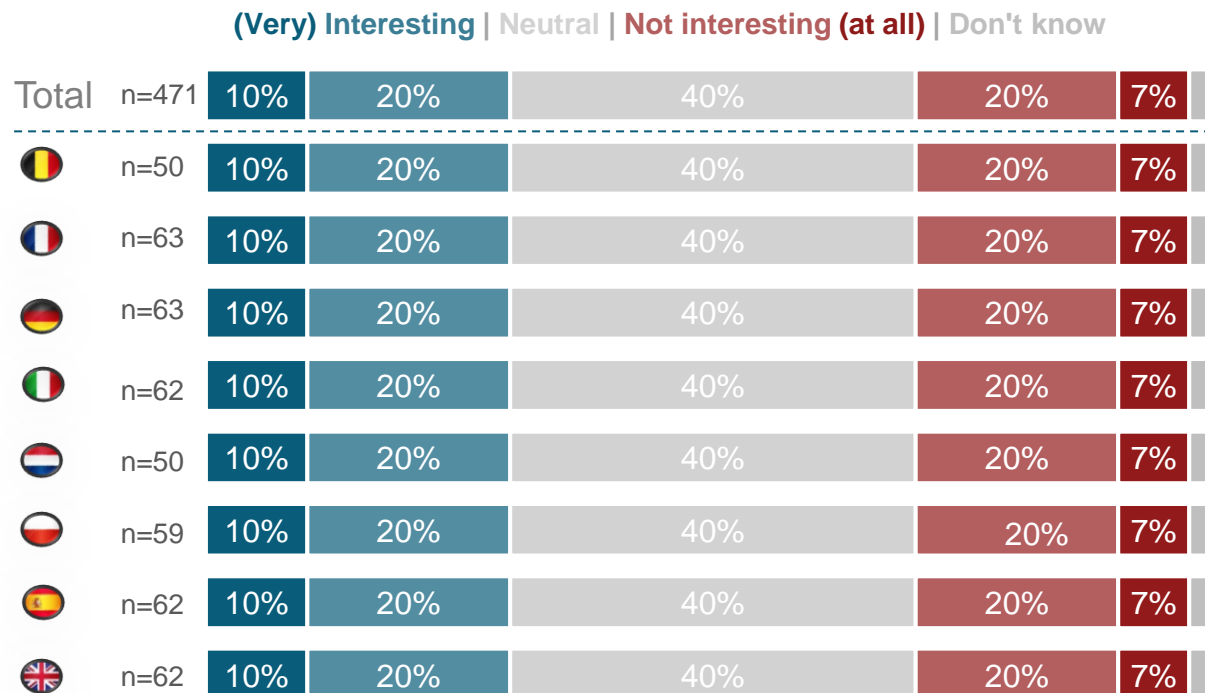*...interior finishing* applied off-site?

Exterior | Interior | Electrical installation

	Exterior	Interior	Electrical installation
🇧🇪 n=27 / n=38	30% / 20%	30% / 20%	15%
🇫🇷 n=21 / n=46	30% / 20%	30% / 20%	15%
🇩🇪 n=25 / n=19	30% / 20%	30% / 20%	15%
🇮🇹 n=23 / n=49	30% / 20%	30% / 20%	15%
🇳🇱 n=28 / n=35	30% / 20%	30% / 20%	15%
🇵🇱 n=14 / n=13	30% / 20%	30% / 20%	15%
🇪🇸 n=44 / n=27	30% / 20%	30% / 20%	15%
🇬🇧 n=24 / n=29	30% / 20%	30% / 20%	15%

Left chart:
- 2023 (n = 206): Exterior 30%, Interior 20%, Electrical 15%
- 2021 (n = 256): Exterior 30%, Interior 20%

Legend: 2023 | 2021

While it is not unusual for exterior and/or interior finishing products to be pre-applied when using prefabricated elements, the average share of such practices in 2023 is notably lower compared to 2021. The sole exceptions to this decline are the increases in exterior finishing for France and Belgium.

The share of exterior and interior finishing
What share of your prefabricated panels had:
...*exterior finishing* or cladding applied off-site?
...*interior finishing* applied off-site?

n = 206

Belgium n=27 — Exterior 30%, Interior 20%, Electrical 15%
France n=21 — Exterior 30%, Interior 20%, Electrical 15%
Germany n=25 — Exterior 30%, Interior 20%, Electrical 15%
Italy n=23 — Exterior 30%, Interior 20%, Electrical 15%
Netherlands n=28 — Exterior 30%, Interior 20%, Electrical 15%
Poland n=14 — Exterior 30%, Interior 20%, Electrical 15%
Spain n=44 — Exterior 30%, Interior 20%, Electrical 15%
UK n=24 — Exterior 30%, Interior 20%, Electrical 15%

*Results are only indicative due to a low number of observations.

Exterior   Interior   Electrical

52

...conclusion

Interest in prefabricated construction
How interesting is it that these fully finished prefabricated elements are already coated or pre-painted?

(Very) Interesting | Neutral | **Not interesting (at all)** | Don't know

		(Very) Interesting		Neutral	Not interesting	Don't know
Total	n=471	10%	20%	40%	20%	7%
🇧🇪	n=50	10%	20%	40%	20%	7%
🇫🇷	n=63	10%	20%	40%	20%	7%
🇩🇪	n=63	10%	20%	40%	20%	7%
🇮🇹	n=62	10%	20%	40%	20%	7%
🇳🇱	n=50	10%	20%	40%	20%	7%
🇵🇱	n=59	10%	20%	40%	20%	7%
🇪🇸	n=62	10%	20%	40%	20%	7%
🇬🇧	n=62	10%	20%	40%	20%	7%

The most dominant project size in Prefab
What was the most dominant size of the projects that contained prefab building elements?

		Low rise (up to 4 floors)	Mid rise (5 up to 10 floors)	High rise (more than 10 floors)	Not one specific
Total	n=688	25%	25%	25%	25%
🇧🇪	n=86	25%	25%	25%	25%
🇫🇷	n=74	25%	25%	25%	25%
🇩🇪	n=90	25%	25%	25%	25%
🇮🇹	n=77	25%	25%	25%	25%
🇳🇱	n=91	25%	25%	25%	25%
🇵🇱	n=94	25%	25%	25%	25%
🇪🇸	n=100	25%	25%	25%	25%
🇬🇧	n=76	25%	25%	25%	25%

...conclusion

The most dominant project size in Prefab
And in which size segment do you expect the biggest growth of prefab?

	Total n=310	Belgium n=33	France n=41	Germany n=41	Italy n=42	Netherlands n=30	Poland n=39	Spain n=42	United Kingdom n=42
Low rise (up to 4 floors)	25%	25%	25%	25%	25%	25%	25%	25%	25%
Mid-rise (5 up to 10 floors)	25%	25%	25%	25%	25%	25%	25%	25%	25%
High rise (more than 10 floors)	25%	25%	25%	25%	25%	25%	25%	25%	25%
Not one specific	10%	10%	10%	10%	10%	10%	10%	10%	10%
Other	10%	10%	10%	10%	10%	10%	10%	10%	10%
Don't know/no opinion	5%	5%	5%	5%	5%	5%	5%	5%	5%

...conclusion

Prefab in different building types
What kind of projects/ buildings contained prefab building elements? [SPONTANEOUS]

	Total 2023 n=688	Total 2021 n=709	Belgium 2023 n=86	France 2023 n=74	Germany 2023 n=90	Italy 2023 n=77	Netherlands 2023 n=91	Poland 2023 n=94	Spain 2023 n=100	United kingdom 2023 n=76
Detached houses	40%	**40%**	40%	40%	40%	40%	40%	40%	40%	40%
Semi-detached houses	30%	**30%**	30%	30%	30%	30%	30%	30%	30%	30%
Terraced-/row-houses	20%	**20%**	20%	20%	20%	20%	20%	20%	20%	20%
Storage/ warehousing	20%	**20%**	20%	20%	20%	20%	20%	20%	20%	20%
...	12%	**12%**	12%	12%	12%	12%	12%	12%	12%	12%
...	12%	**12%**	12%	12%	12%	12%	12%	12%	12%	12%
...	12%	**12%**	12%	12%	12%	12%	12%	12%	12%	12%
...	12%	**12%**	12%	12%	12%	12%	12%	12%	12%	12%
...	7%	**7%**	7%	7%	7%	7%	7%	7%	7%	7%
...	5%	**5%**	5%	5%	5%	5%	5%	5%	5%	5%

*The numbers highlighted in green represent a growth of over 10% compared to 2021, while red highlights a decrease of more than 10%.

...conclusion

Prefab in different building types
In which building types do you expect the biggest growth of prefab?
[SPONTANEOUS]

	Total 2023 n=319	Total 2021 n=444	Belgium 2023 n=34	France 2023 n=42	Germany 2023 n=43	Italy 2023 n=42	Netherlands 2023 n=35	Poland 2023 n=40	Spain 2023 n=41	United kingdom 2023 n=42
Detached houses	40%	40%	40%	40%	40%	40%	40%	40%	40%	40%
Semi-detached houses	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%
Terraced-/row-houses	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%
Storage/ warehousing	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%
...	12%	12%	12%	12%	12%	12%	12%	12%	12%	12%
...	12%	12%	12%	12%	12%	12%	12%	12%	12%	12%
...	12%	12%	12%	12%	12%	12%	12%	12%	12%	12%
...	12%	12%	12%	12%	12%	12%	12%	12%	12%	12%
...	7%	7%	7%	7%	7%	7%	7%	7%	7%	7%
...	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%

*The numbers highlighted in green represent a growth of over 10% compared to 2021, while red highlights a decrease of more than 10%.

Prefab in future construction parts
For which parts of the building do you expect the usage of prefab solutions to grow most? [SPONTANEOUS]

	Total 2023 n=315	Total 2021 n=445	Belgium n=33	France n=43	Germany n=41	Italy n=41	Netherlands n=35	Poland n=39	Spain n=42	United kingdom n=41
Facades/ external walls	40%	40%	40%	40%	40%	40%	40%	40%	40%	40%
Pitched roofs	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%
Flat roofs	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%
…	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%
…	12%	12%	12%	12%	12%	12%	12%	12%	12%	12%
…	12%	12%	12%	12%	12%	12%	12%	12%	12%	12%
…	12%	12%	12%	12%	12%	12%	12%	12%	12%	12%
…	12%	12%	12%	12%	12%	12%	12%	12%	12%	12%
…	7%	7%	7%	7%	7%	7%	7%	7%	7%	7%
…	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%

...conclusion

The reasons for switching to Prefab
Why do you see a shift towards more usage of prefabricated elements?
[SPONTANEOUS]

	Total 2023	Belgium	France	Germany	Italy	Netherlands	Poland	Spain	United kingdom
	n=425	n=46	n=50	n=55	n=62	n=49	n=48	n=61	n=54
Constant quality of products	40%	40%	40%	40%	40%	40%	40%	40%	40%
Constant quality of products	30%	30%	30%	30%	30%	30%	30%	30%	30%
More profitable	20%	20%	20%	20%	20%	20%	20%	20%	20%
...	20%	20%	20%	20%	20%	20%	20%	20%	20%
...	12%	12%	12%	12%	12%	12%	12%	12%	12%
...	12%	12%	12%	12%	12%	12%	12%	12%	12%
...	12%	12%	12%	12%	12%	12%	12%	12%	12%
...	12%	12%	12%	12%	12%	12%	12%	12%	12%
...	7%	7%	7%	7%	7%	7%	7%	7%	7%
...	5%	5%	5%	5%	5%	5%	5%	5%	5%
Others	11%	10%	10%	10%	10%	10%	10%	10%	10%
Don't know/no opinion	3%	3%	3%	3%	3%	3%	3%	3%	3%

...conclusion

Prefab in future construction works
What structural basic materials do you expect to be dominant for fully finished prefabricated facades/inner walls/pitched roofs?
[SPONTANEOUS]
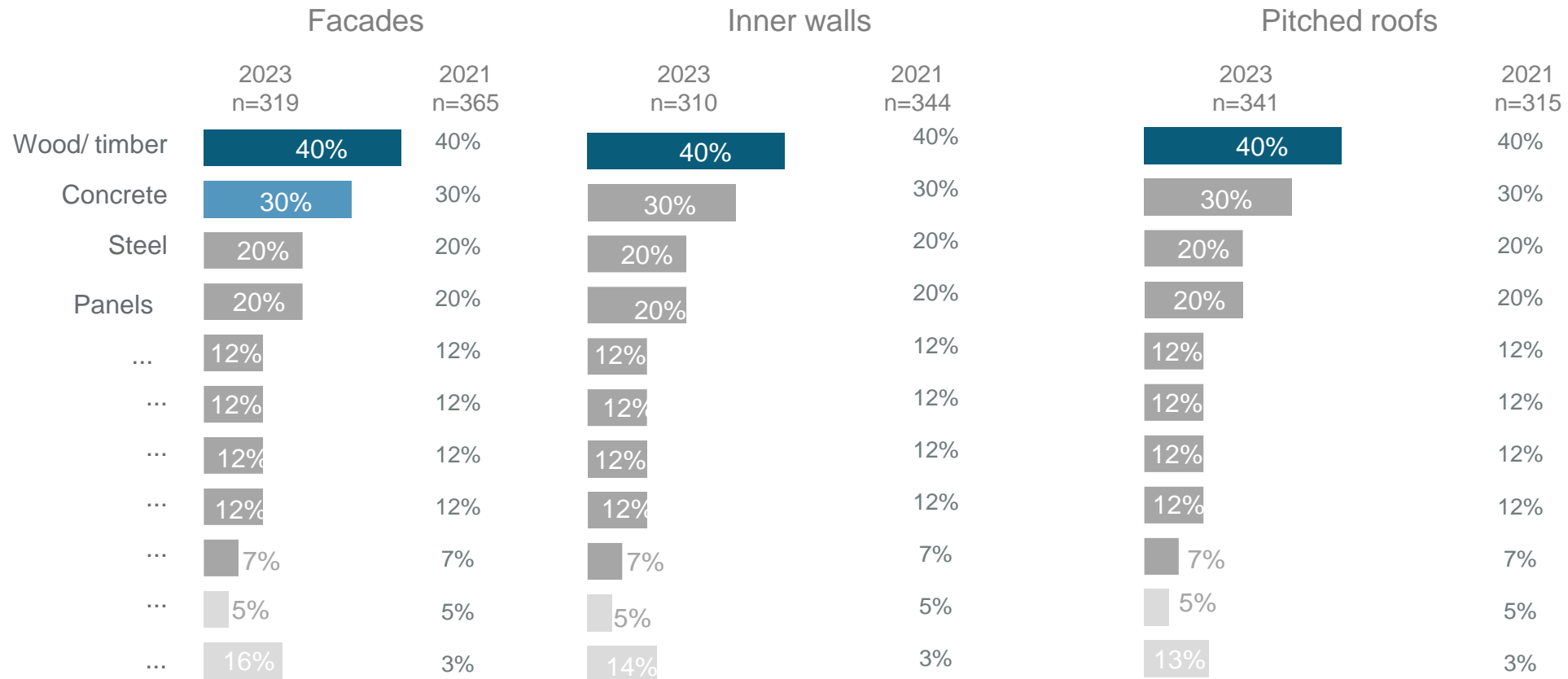
	Facades		Inner walls		Pitched roofs	
	2023 n=319	2021 n=365	2023 n=310	2021 n=344	2023 n=341	2021 n=315
Wood/ timber	40%	40%	40%	40%	40%	40%
Concrete	30%	30%	30%	30%	30%	30%
Steel	20%	20%	20%	20%	20%	20%
Panels	20%	20%	20%	20%	20%	20%
...	12%	12%	12%	12%	12%	12%
...	12%	12%	12%	12%	12%	12%
...	12%	12%	12%	12%	12%	12%
...	12%	12%	12%	12%	12%	12%
...	7%	7%	7%	7%	7%	7%
...	5%	5%	5%	5%	5%	5%
...	16%	3%	14%	3%	13%	3%

...conclusion

Expected growth of prefabricated elements

What structural basic materials do you expect to be dominant for fully finished prefabricated **Facades?** *[SPONTANEOUS]*

Building parts: Facades	Total	🇧🇪	🇫🇷	🇩🇪	🇮🇹	🇳🇱	🇵🇱	🇪🇸	🇬🇧
	n= 319	n=34	n=42	n=43	n=42	n=35	n=40	n=41	n=42
Wood/ timber	40%	40%	40%	40%	40%	40%	40%	40%	40%
Concrete	30%	30%	30%	30%	30%	30%	30%	30%	30%
Steel	20%	20%	20%	20%	20%	20%	20%	20%	20%
Panels	20%	20%	20%	20%	20%	20%	20%	20%	20%
...	12%	12%	12%	12%	12%	12%	12%	12%	12%
...	12%	12%	12%	12%	12%	12%	12%	12%	12%
...	12%	12%	12%	12%	12%	12%	12%	12%	12%
...	12%	12%	12%	12%	12%	12%	12%	12%	12%
...	7%	7%	7%	7%	7%	7%	7%	7%	7%
...	5%	5%	5%	5%	5%	5%	5%	5%	5%
...	16%	16%	16%	16%	16%	16%	16%	16%	16%

...conclusion

Expected growth of prefabricated elements
What structural basic materials do you expect to be dominant for fully finished prefabricated **Inner walls?** *[SPONTANEOUS]*

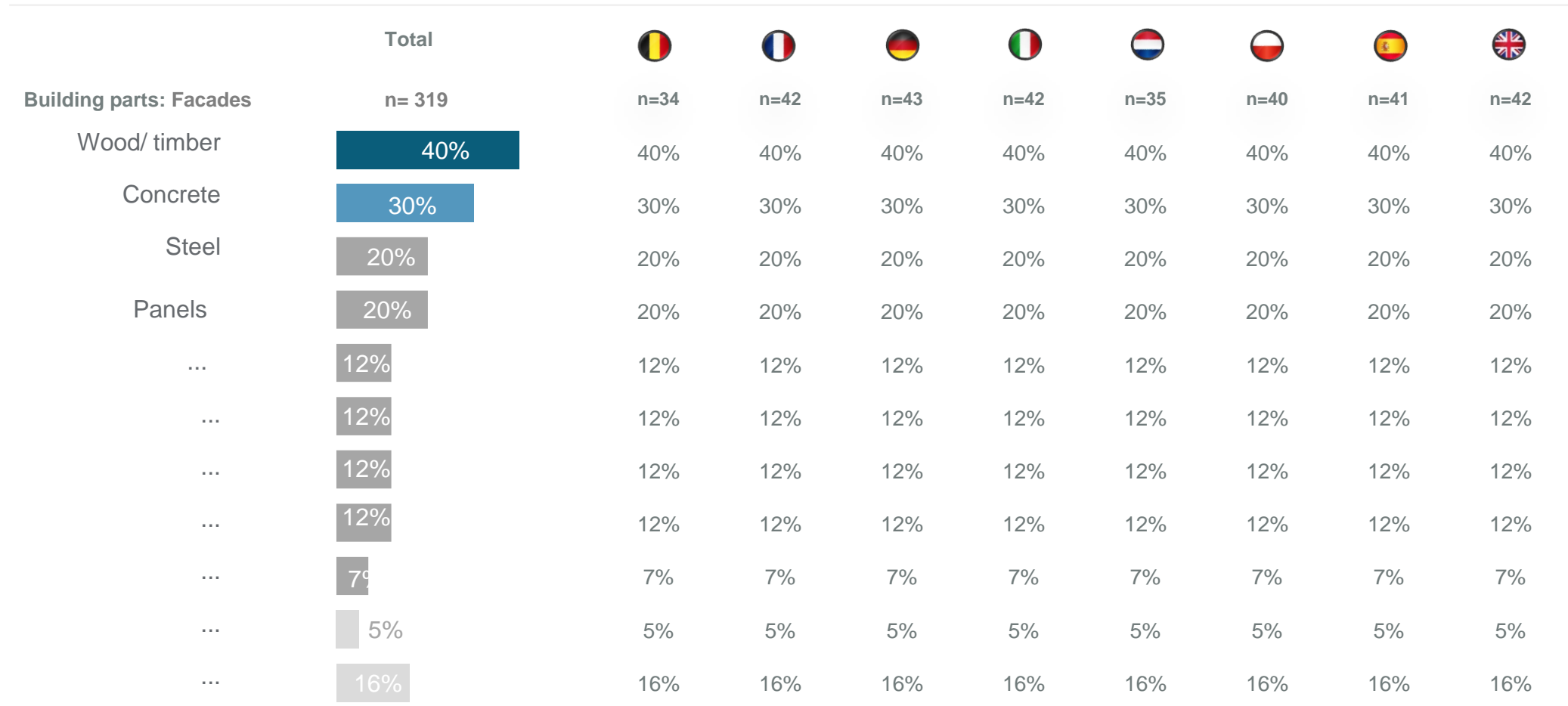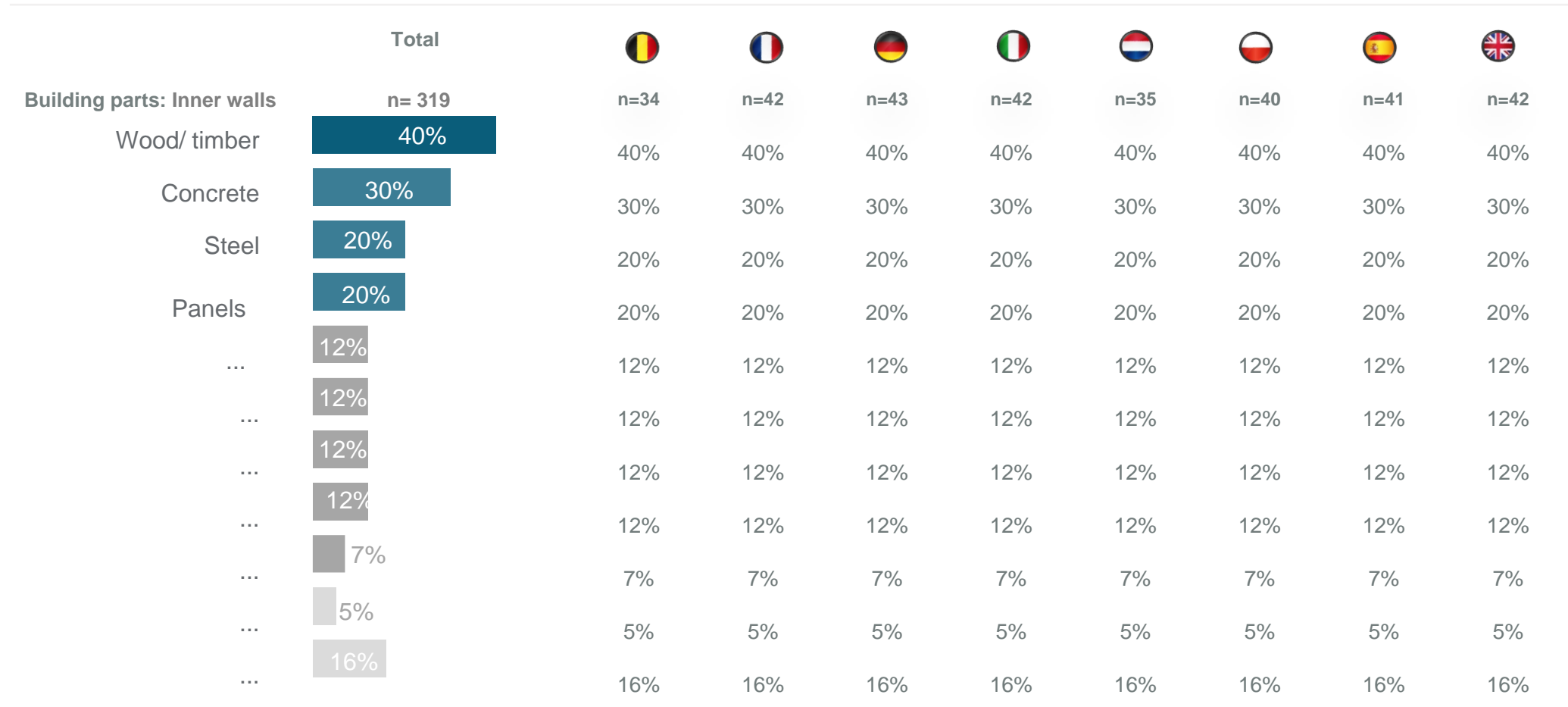| Building parts: Inner walls	Total n= 319	🇧🇪 n=34	🇫🇷 n=42	🇩🇪 n=43	🇮🇹 n=42	🇳🇱 n=35	🇵🇱 n=40	🇪🇸 n=41	🇬🇧 n=42
Wood/ timber	40%	40%	40%	40%	40%	40%	40%	40%	40%
Concrete	30%	30%	30%	30%	30%	30%	30%	30%	30%
Steel	20%	20%	20%	20%	20%	20%	20%	20%	20%
Panels	20%	20%	20%	20%	20%	20%	20%	20%	20%
...	12%	12%	12%	12%	12%	12%	12%	12%	12%
...	12%	12%	12%	12%	12%	12%	12%	12%	12%
...	12%	12%	12%	12%	12%	12%	12%	12%	12%
...	12%	12%	12%	12%	12%	12%	12%	12%	12%
...	7%	7%	7%	7%	7%	7%	7%	7%	7%
...	5%	5%	5%	5%	5%	5%	5%	5%	5%
...	16%	16%	16%	16%	16%	16%	16%	16%	16%

...conclusion

Expected growth of prefabricated elements
What structural basic materials do you expect to be dominant for fully finished prefabricated **Pitched roofs?** *[SPONTANEOUS]*

Building parts: Pitched roofs	Total	🇧🇪	🇫🇷	🇩🇪	🇮🇹	🇳🇱	🇵🇱	🇪🇸	🇬🇧
	n= 319	n=34	n=42	n=43	n=42	n=35	n=40	n=41	n=42
Wood/ timber	40%	40%	40%	40%	40%	40%	40%	40%	40%
Concrete	30%	30%	30%	30%	30%	30%	30%	30%	30%
Steel	20%	20%	20%	20%	20%	20%	20%	20%	20%
Panels	20%	20%	20%	20%	20%	20%	20%	20%	20%
...	12%	12%	12%	12%	12%	12%	12%	12%	12%
...	12%	12%	12%	12%	12%	12%	12%	12%	12%
...	12%	12%	12%	12%	12%	12%	12%	12%	12%
...	12%	12%	12%	12%	12%	12%	12%	12%	12%
...	7%	7%	7%	7%	7%	7%	7%	7%	7%
...	5%	5%	5%	5%	5%	5%	5%	5%	5%
...	16%	16%	16%	16%	16%	16%	16%	16%	16%
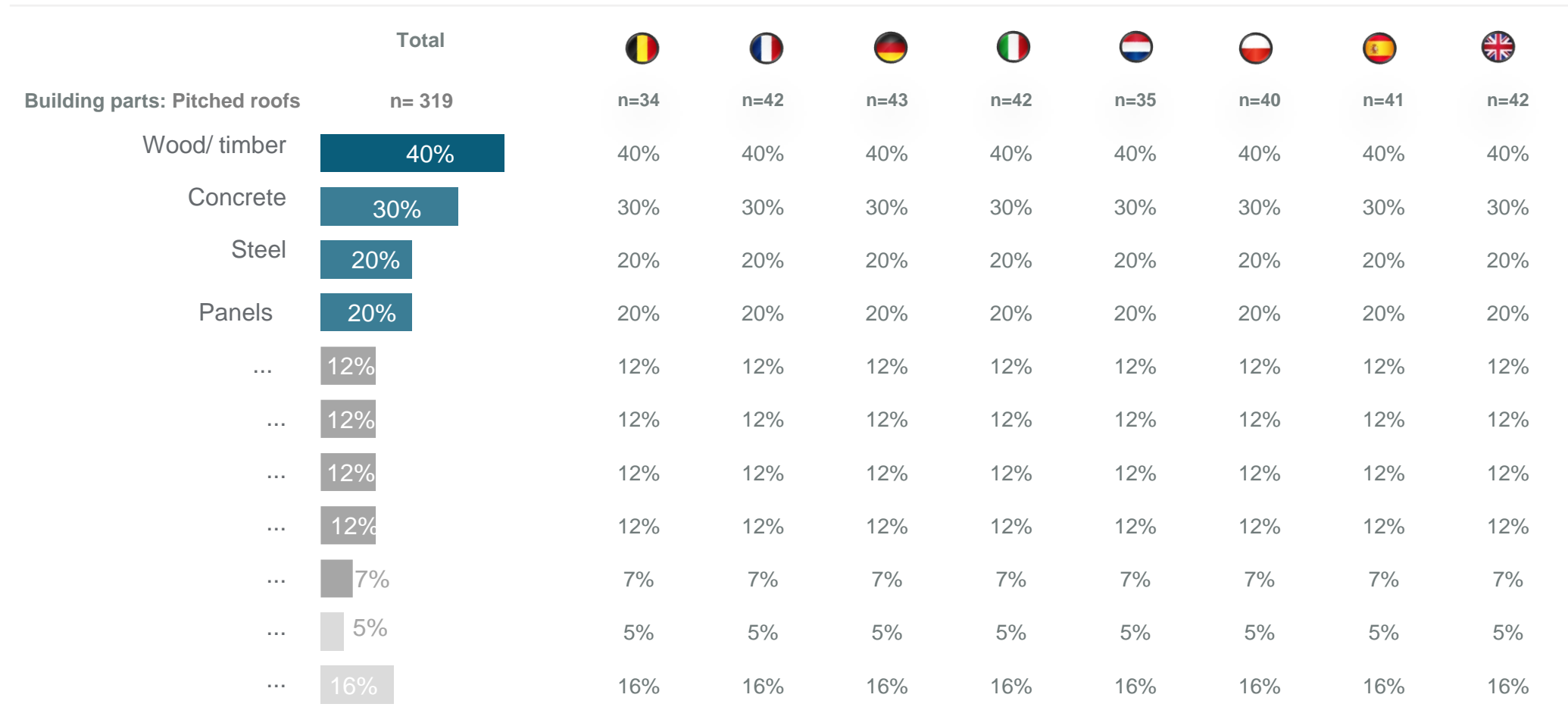
...conclusion

Decision makers
Who makes the final decision whether prefabricated modular buildings are used?

Decision maker	Total 2023 n=473	Belgium n=50	France n=63	Germany n=62	Italy n=63	Netherlands n=50	Poland n=59	Spain n=63	United kingdom n=63
Client	30%	40%	40%	40%	40%	40%	40%	40%	40%
Architects	25%	30%	30%	30%	30%	30%	30%	30%	30%
Investor	20%	20%	20%	20%	20%	20%	20%	20%	20%
...	20%	20%	20%	20%	20%	20%	20%	20%	20%
...	12%	12%	12%	12%	12%	12%	12%	12%	12%
...	12%	12%	12%	12%	12%	12%	12%	12%	12%
...	12%	12%	12%	12%	12%	12%	12%	12%	12%
...	12%	12%	12%	12%	12%	12%	12%	12%	12%
...	7%	7%	7%	7%	7%	7%	7%	7%	7%
...	5%	5%	5%	5%	5%	5%	5%	5%	5%
Other	16%	16%	16%	16%	16%	16%	16%	16%	16%
Don't know/no opinion	1%	1%	1%	1%	1%	1%	1%	1%	1%

...conclusion

Design makers in prefabricated construction
Who determines the final design of the prefabricated elements?

Design maker	Total 2023 n=471	Belgium n=50	France n=63	Germany n=63	Italy n=62	Netherlands n=50	Poland n=59	Spain n=62	United kingdom n=62
Client	30%	40%	40%	40%	40%	40%	40%	40%	40%
Architects	25%	30%	30%	30%	30%	30%	30%	30%	30%
Investor	20%	20%	20%	20%	20%	20%	20%	20%	20%
...	20%	20%	20%	20%	20%	20%	20%	20%	20%
...	12%	12%	12%	12%	12%	12%	12%	12%	12%
...	12%	12%	12%	12%	12%	12%	12%	12%	12%
...	12%	12%	12%	12%	12%	12%	12%	12%	12%
...	12%	12%	12%	12%	12%	12%	12%	12%	12%
...	7%	7%	7%	7%	7%	7%	7%	7%	7%
...	5%	5%	5%	5%	5%	5%	5%	5%	5%
...	16%	16%	16%	16%	16%	16%	16%	16%	16%
Other	1%	1%	1%	1%	1%	1%	1%	1%	1%
Don't know/no opinion	4 %	4%	4%	4%	4%	4%	4%	4%	4%

...conclusion

Degree of agreement with Prefab claims
To what degree do you disagree or agree with the following statements about prefab?

	Belgium	France	Germany	Italy	Netherlands	Poland	Spain	United kingdom
	n=25	n=32	n=31	n=32	n=24	n=29	n=31	n=32

Total 2023   n=236

(Strongly) Agree | Neutral | Disagree (Strongly) | Don't know

Statement	(Strongly) Agree	Neutral	Disagree (Strongly)	Don't know	Belgium	France	Germany	Italy	Netherlands	Poland	Spain	United kingdom
Prefab is the best solution for labor shortage	10% 20%	40%	20%	7%	30%	30%	30%	30%	30%	30%	30%	30%
Prefab limits the freedom of design	10% 20%	40%	20%	7%	30%	30%	30%	30%	30%	30%	30%	30%
Prefab reduces the duration of a project	10% 20%	40%	20%	7%	30%	30%	30%	30%	30%	30%	30%	30%
Failure costs will be reduced to a minimum with prefab	10% 20%	40%	20%	7%	30%	30%	30%	30%	30%	30%	30%	30%
I like to work with prefab elements in my design	10% 20%	40%	20%	7%	30%	30%	30%	30%	30%	30%	30%	30%
Using prefab elements reduces liability and risks for our company	10% 20%	40%	20%	7%	30%	30%	30%	30%	30%	30%	30%	30%
Prefab elements are equally suited for high- and low-end projects	10% 20%	40%	20%	7%	30%	30%	30%	30%	30%	30%	30%	30%
Exterior prefab lose aesthetic value quick due to environmental influences	10% 20%	40%	20%	7%	30%	30%	30%	30%	30%	30%	30%	30%
With prefab the quality of the building improves significantly	10% 20%	40%	20%	7%	30%	30%	30%	30%	30%	30%	30%	30%

Strongly agree + Agree

Index

Background of the architects

...conclusion

New development or renovation

|	0 - 30%	31 - 70%	71 - 100%
🇬🇧	60%	20%	20%
🇩🇪	60%	20%	20%
🇫🇷	60%	20%	20%
🇪🇸	60%	20%	20%
🇮🇹	60%	20%	20%
🇳🇱	60%	20%	20%
🇧🇪	60%	20%	20%
🇵🇱	60%	20%	20%

■ 0 - 30%　　■ 31 - 70%　　■ 71 - 100%
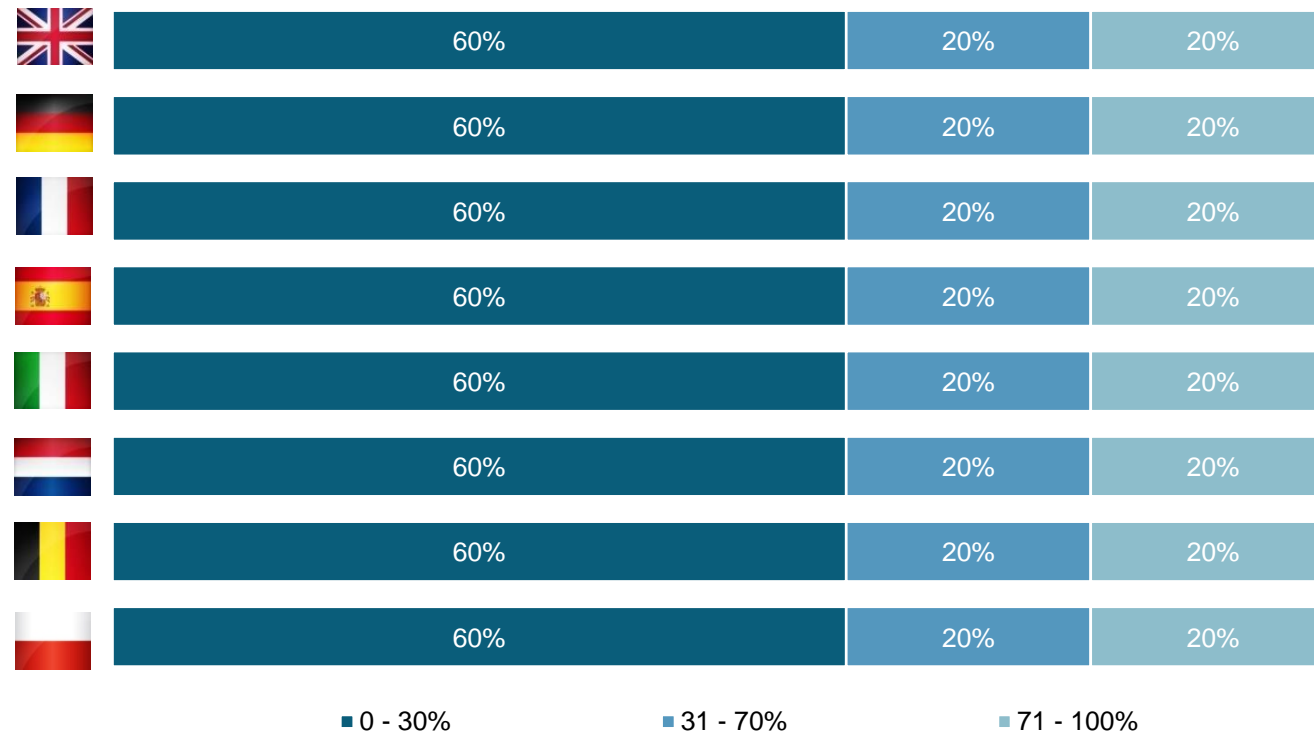
About European Architectural Barometer

European Architectural Barometer

Architects have already been monitored by several institutes in quite diverging ways in the different countries. USP launched this European Architectural Barometer for a more cohesive view. The European Architectural Barometer is extremely useful for organisations with a focus on Europe that also want to compare the activities of architects in different countries.

Interviews

All interviews are conducted by native speakers. From the third measurement onwards, two hundred interviews per country have been completed per measurement. The first two measurements were based on one hundred interviews per country. Later, for the Netherlands and Belgium, the measurements returned to one hundred interviews.
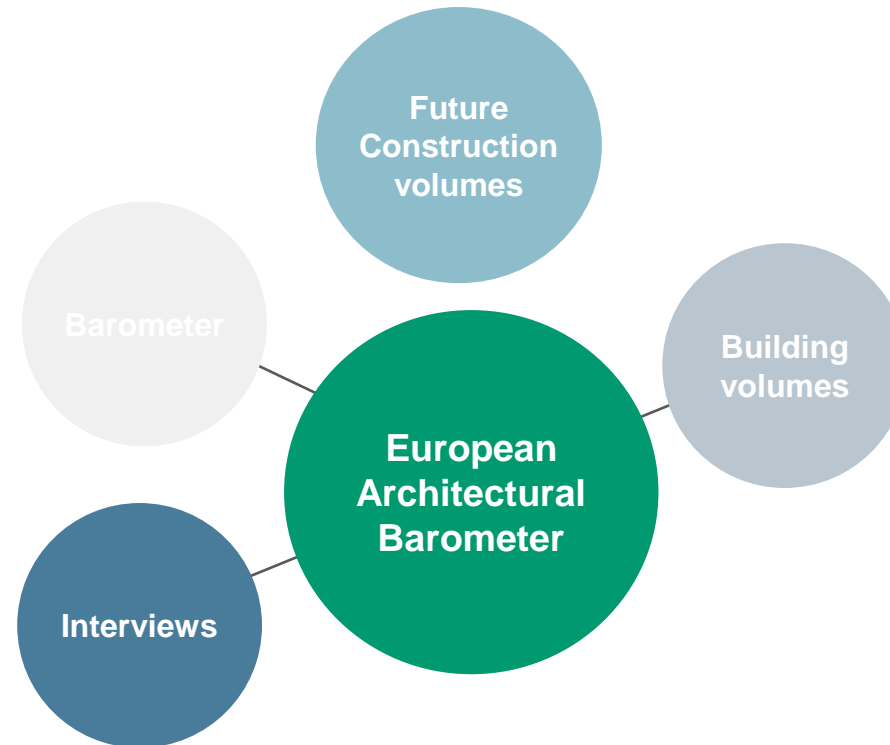
Future construction volumes

For decision makers charged with considerations of company resources, staffing and marketing strategy, a clear insight into future construction volumes is essential. However, economic indicators seldom provide an adequate picture of these volumes.
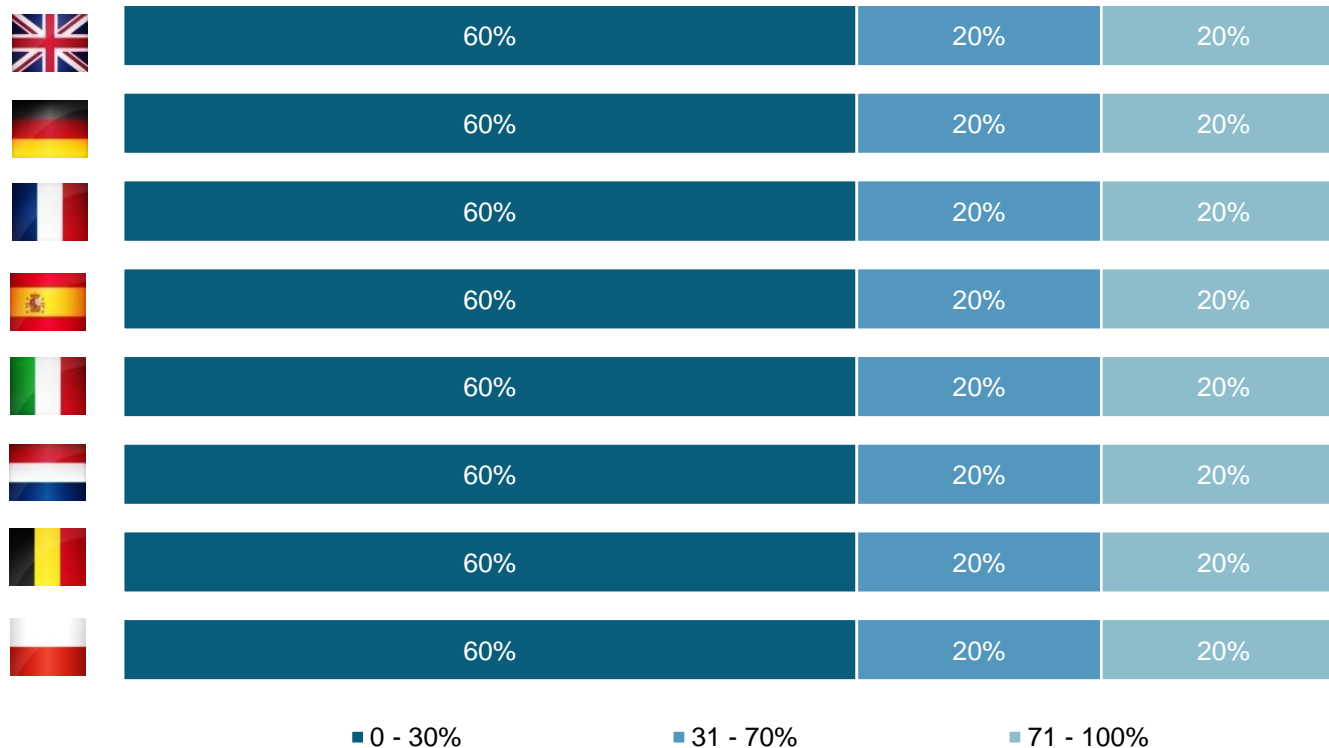
Building volumes

The construction industry operates in a delayed cyclical market, which means that buildings designed today will not be ready until at least two years from now. The economic activities of architectural firms provide a strong indication of the direction in which the construction sector will develop in terms of both building volumes and the way in which building volumes will be realised.

Future Construction volumes

Barometer

European Architectural Barometer

Building volumes

Interviews

Results per segment

For three key questions from the current measurement of the European Architectural Barometer, the results are divided by architects that realise most of their sales in the residential segment (0% – 30% non-residential), by architects that realise sales in both segments (31% - 70% non-residential), and by architects that realise most of their sales in the non-residential segment (71% - 100% non-residential).
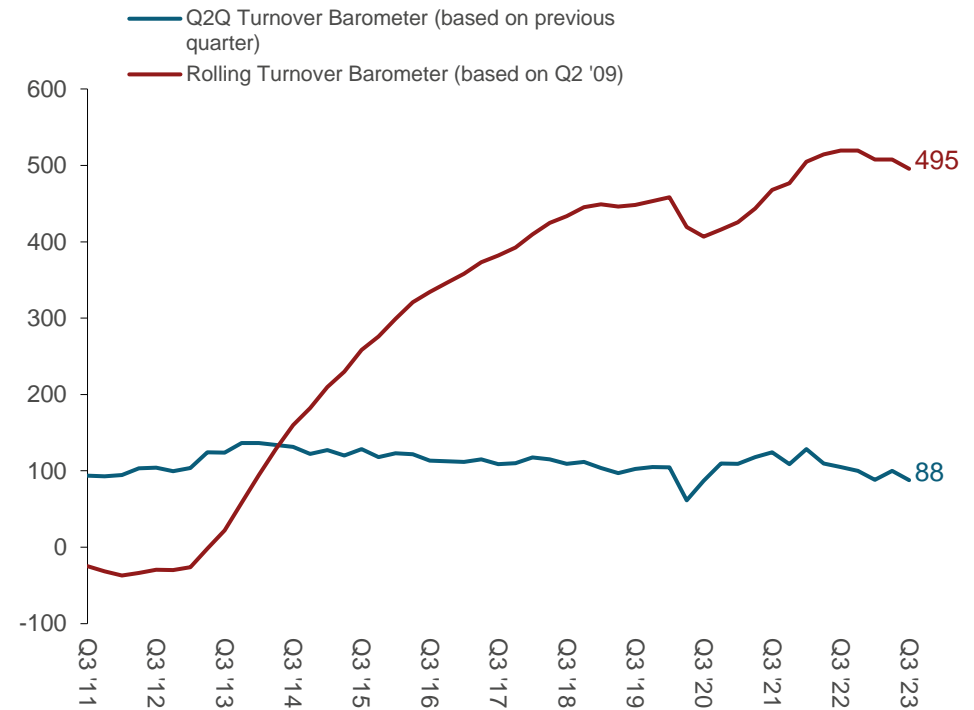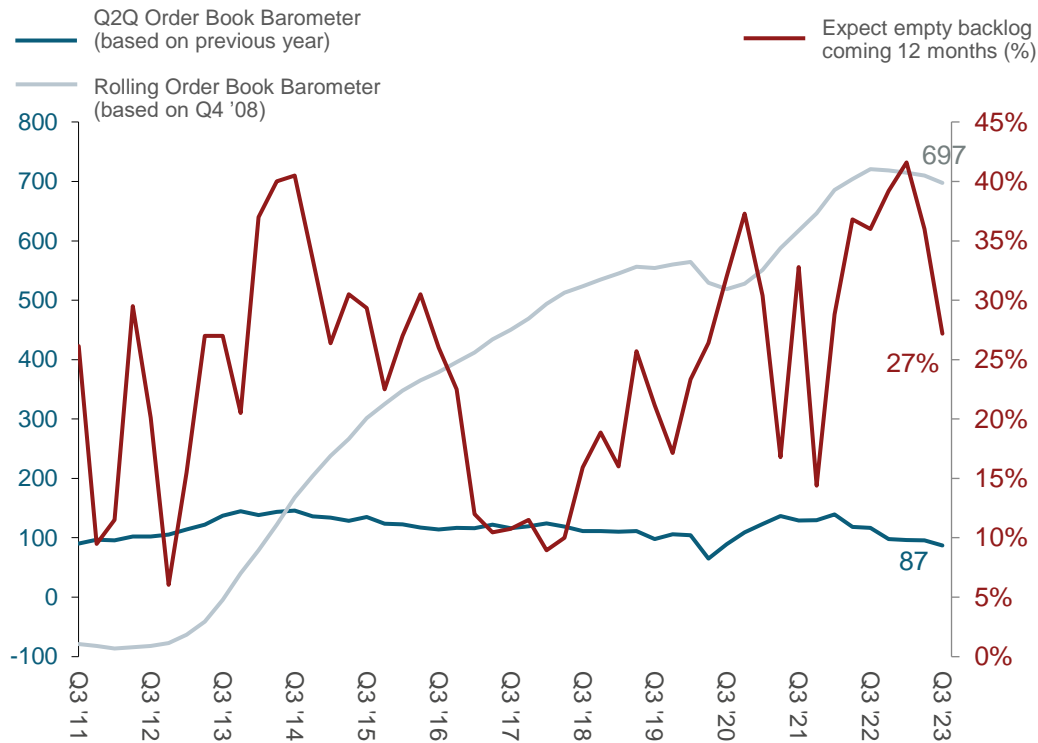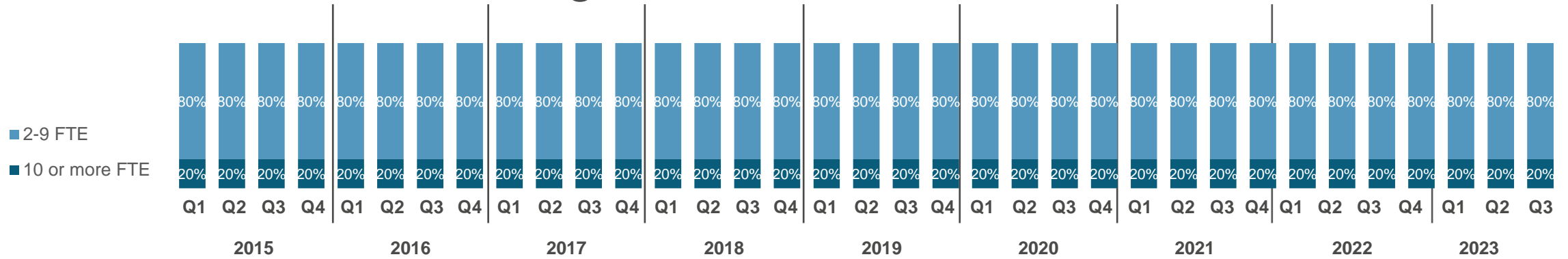
Segment most active

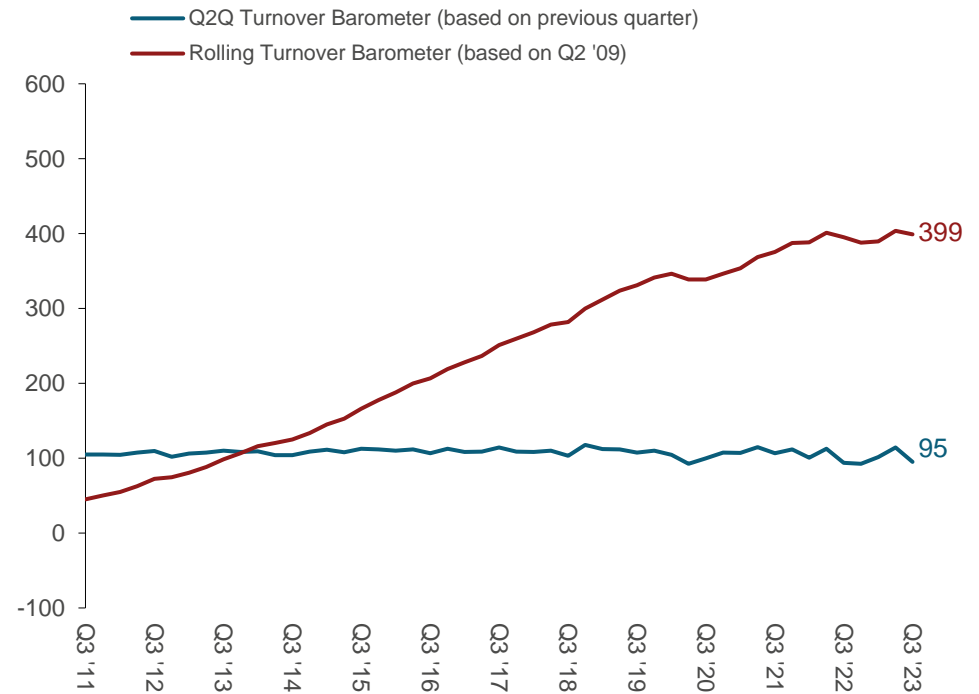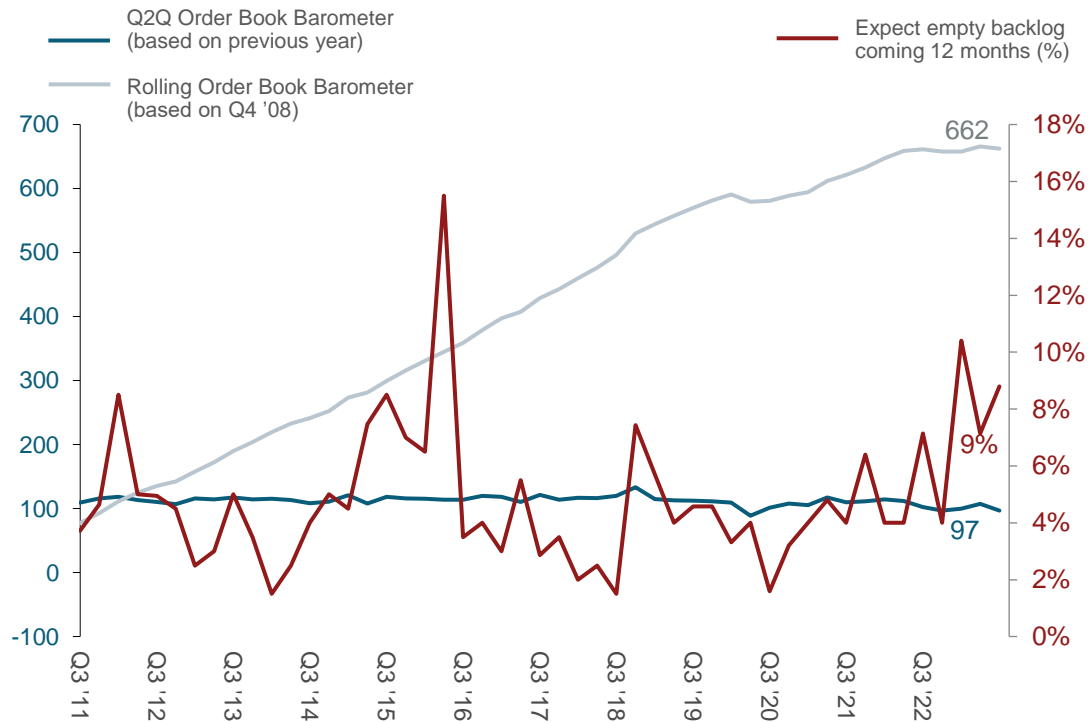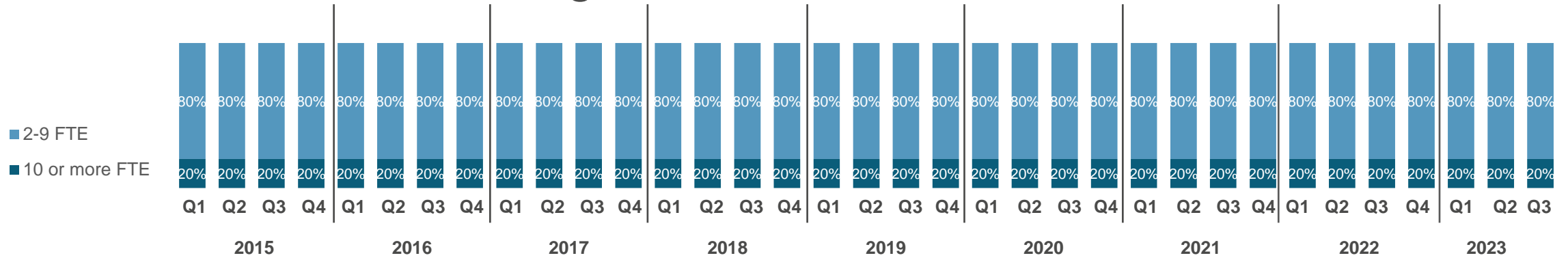| Country	0 - 30%	31 - 70%	71 - 100%
UK	60%	20%	20%
Germany	60%	20%	20%
France	60%	20%	20%
Spain	60%	20%	20%
Italy	60%	20%	20%
Netherlands	60%	20%	20%
Belgium	60%	20%	20%
Poland	60%	20%	20%

■ 0 - 30%   ■ 31 - 70%   ■ 71 - 100%

The tables on the following pages show the abovementioned split with regard to the following questions:
- **How did the turnover develop in this quarter compared to the previous quarter?**
- **How did your order book develop in this quarter compared to the same quarter last year?**
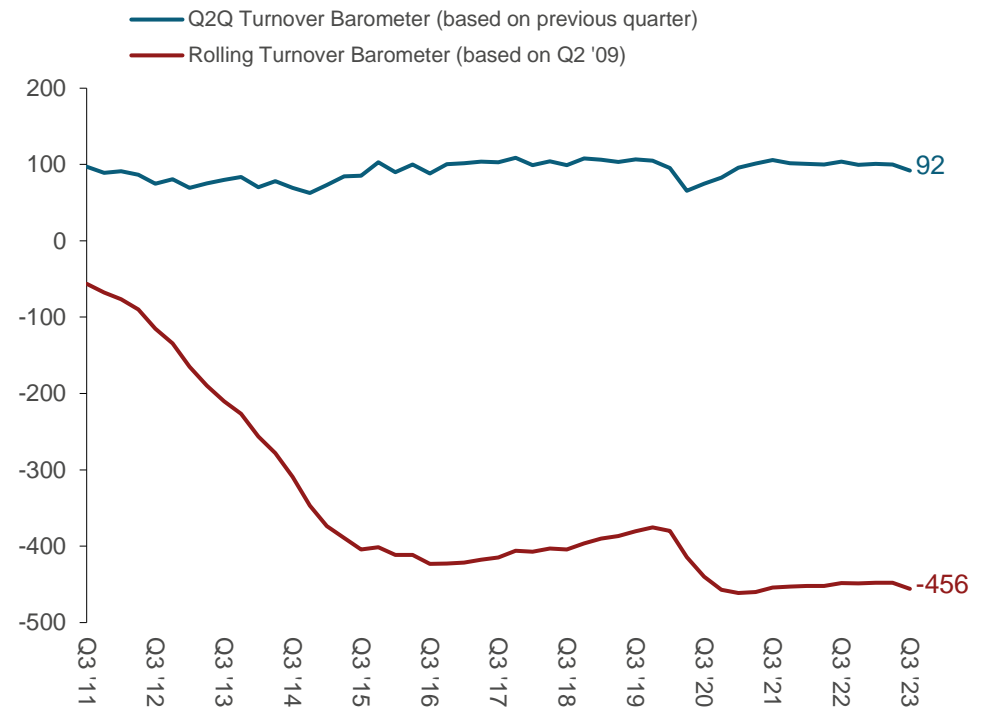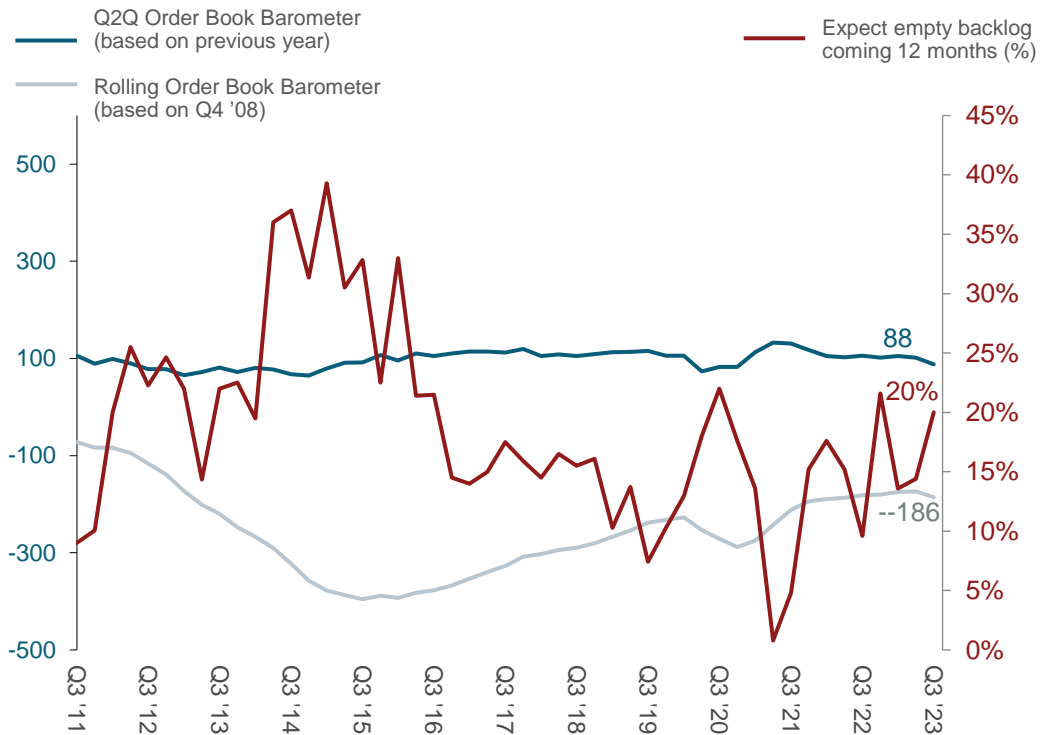- **Do you expect that your order book might be empty these coming 12 months?**

Short-term outlook among British architects

Short-term outlook among German architects

2-9 FTE

10 or more FTE

Q1 Q2 Q3 Q4 | Q1 Q2 Q3 Q4 | Q1 Q2 Q3 Q4 | Q1 Q2 Q3 Q4 | Q1 Q2 Q3 Q4 | Q1 Q2 Q3 Q4 | Q1 Q2 Q3 Q4 | Q1 Q2 Q3 Q4 | Q1 Q2 Q3

2015 **2016** **2017** **2018** **2019** **2020** **2021** **2022** **2023**

Q2Q Order Book Barometer (based on previous year)

Rolling Order Book Barometer (based on Q4 '08)

Expect empty backlog coming 12 months (%)

Q2Q Turnover Barometer (based on previous quarter)

Rolling Turnover Barometer (based on Q2 '09)

Short-term outlook among French architects

Legend:
- 2-9 FTE
- 10 or more FTE

Stacked bars (2015–2023, Q1–Q3): each bar shows 80% (2-9 FTE) and 20% (10 or more FTE)

Left chart legend:
- Q2Q Order Book Barometer (based on previous year)
- Rolling Order Book Barometer (based on Q4 '08)
- Expect empty backlog coming 12 months (%)

Left chart end values: 88, 20%, --186

Right chart legend:
- Q2Q Turnover Barometer (based on previous quarter)
- Rolling Turnover Barometer (based on Q2 '09)

Right chart end values: 92, -456

Short-term outlook among Spanish architects
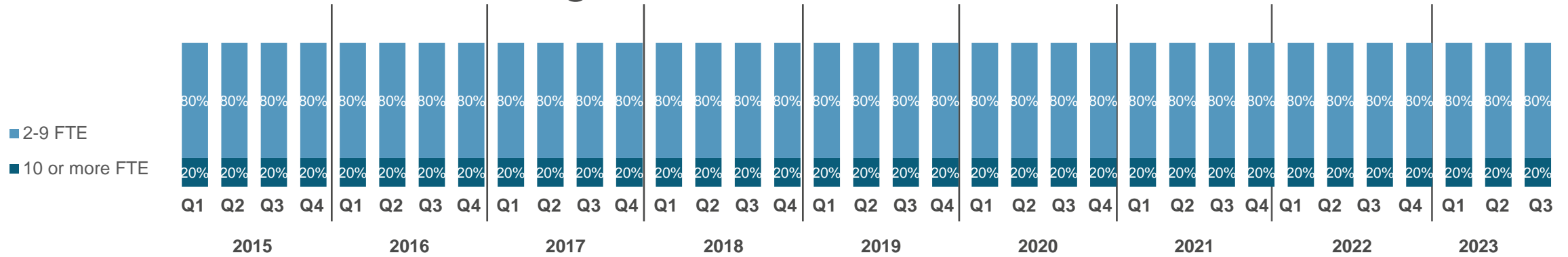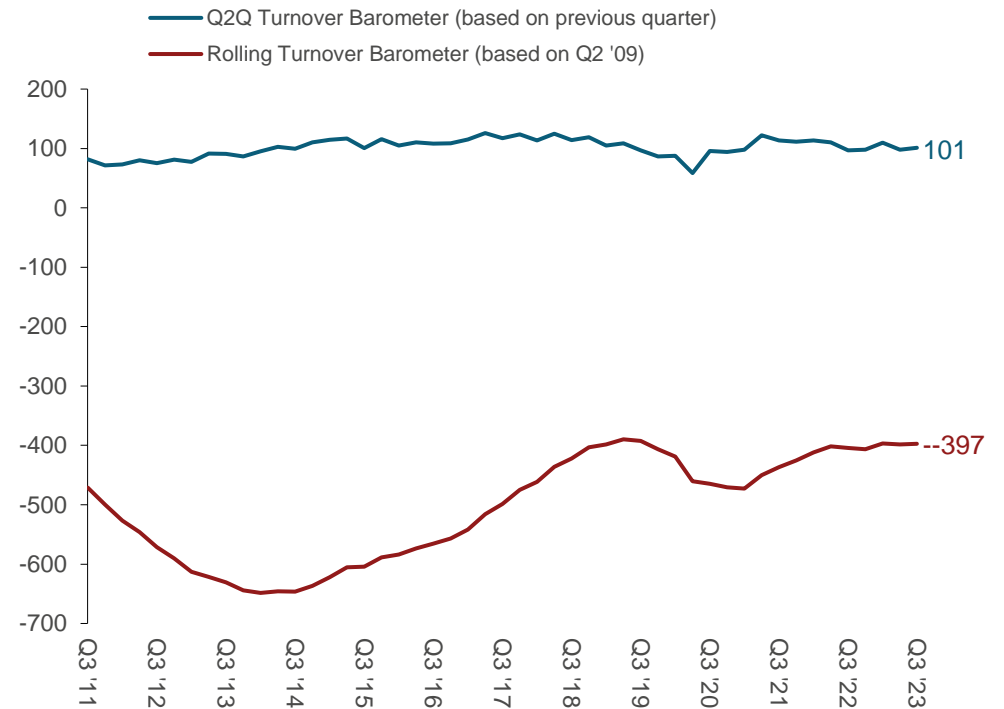
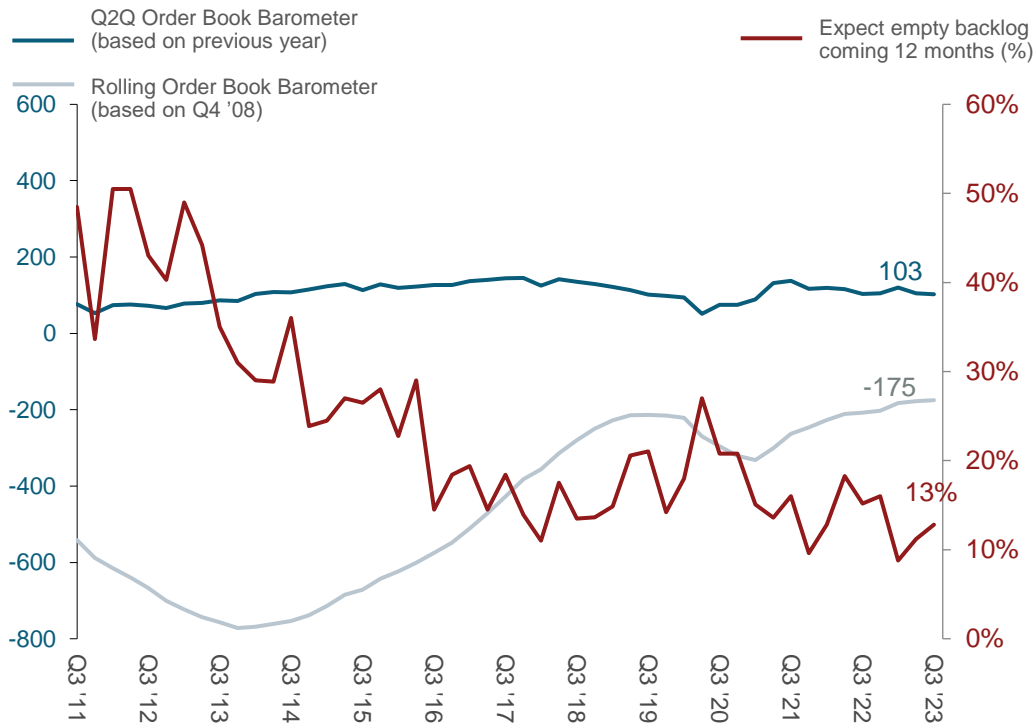# Short-term outlook among Italian architects
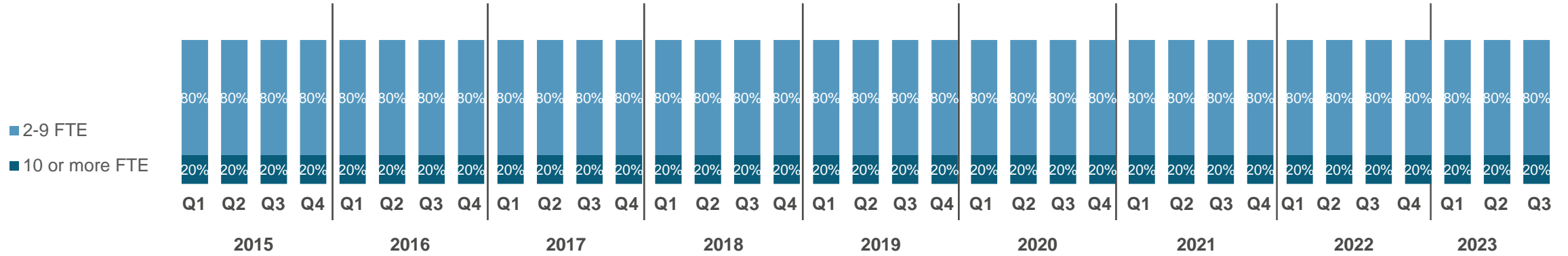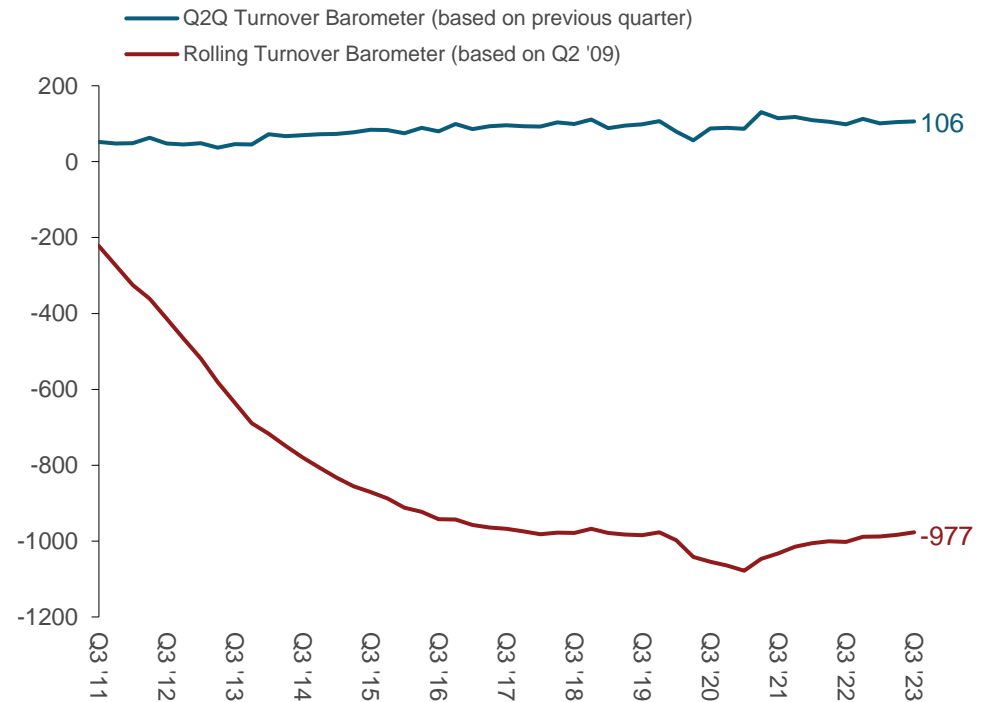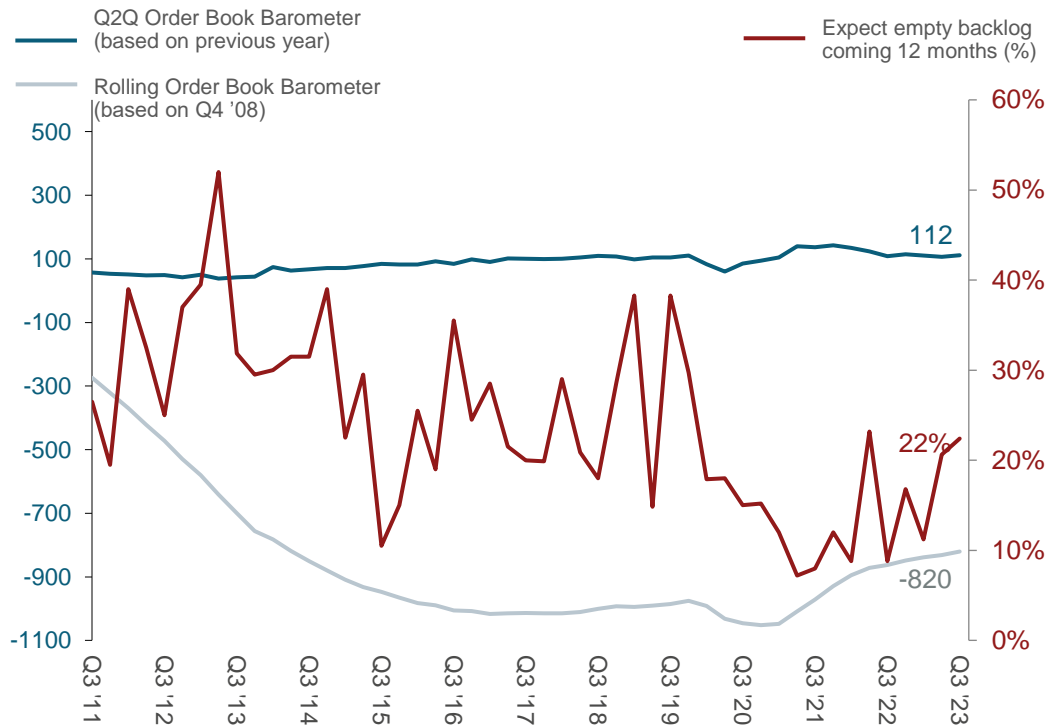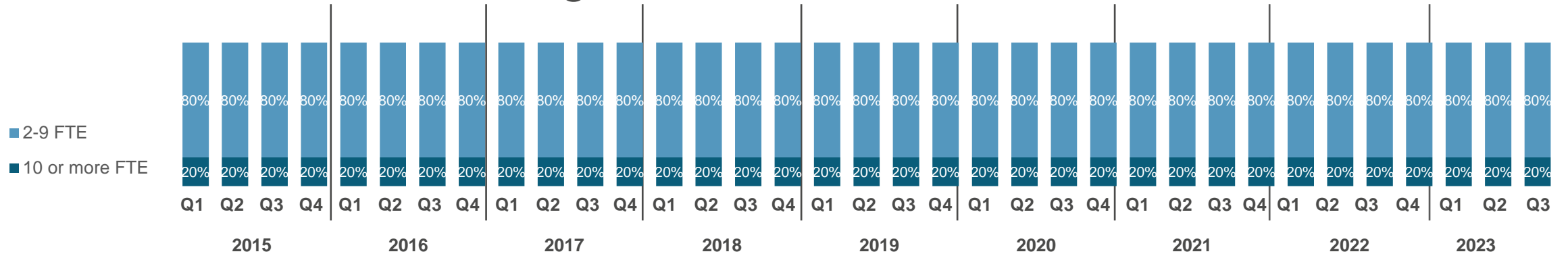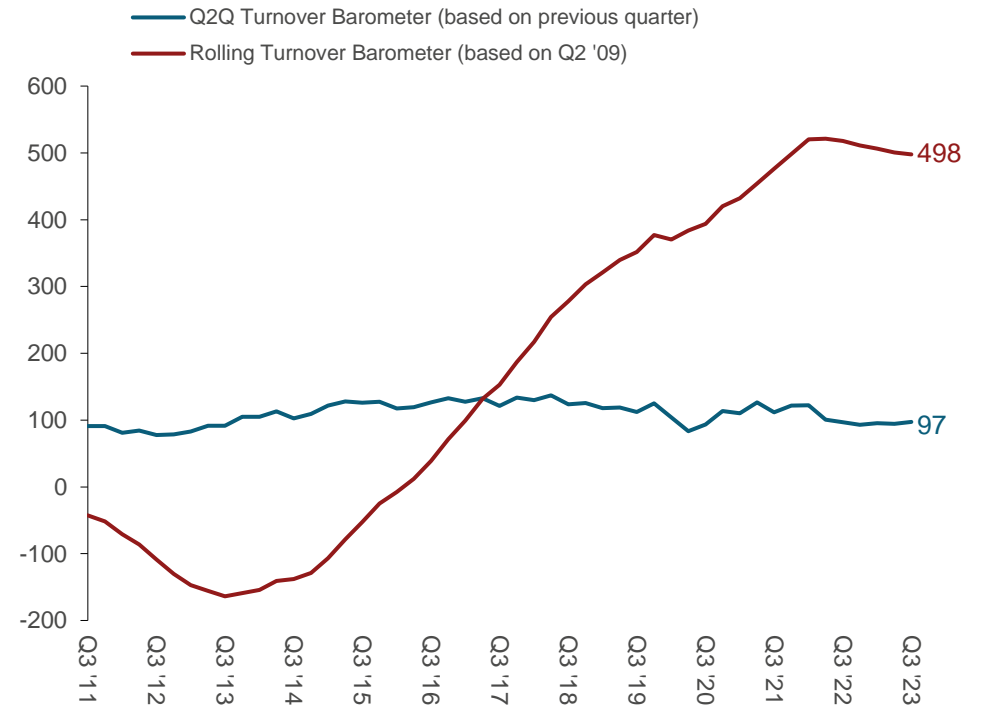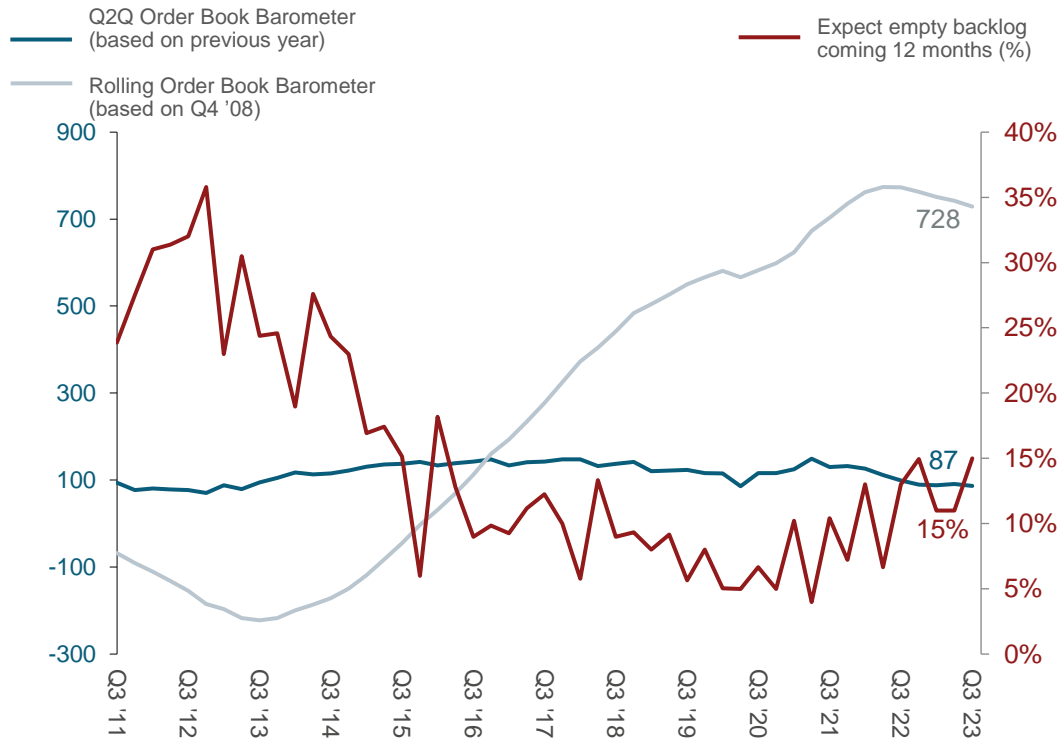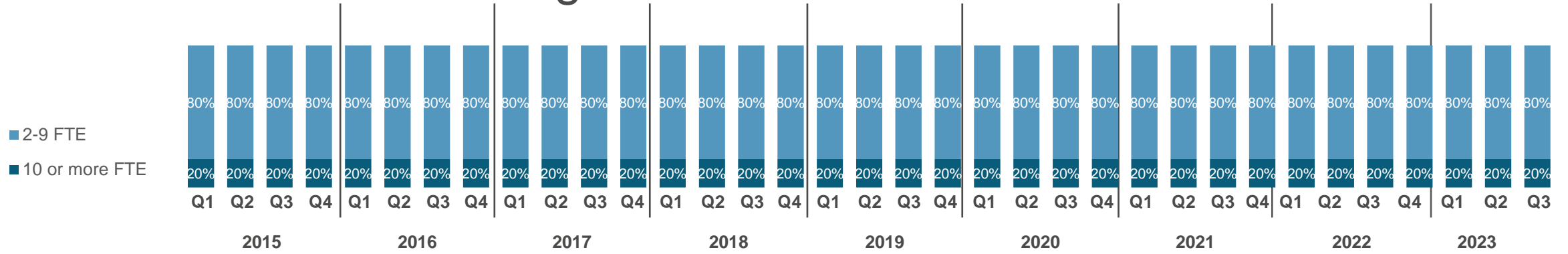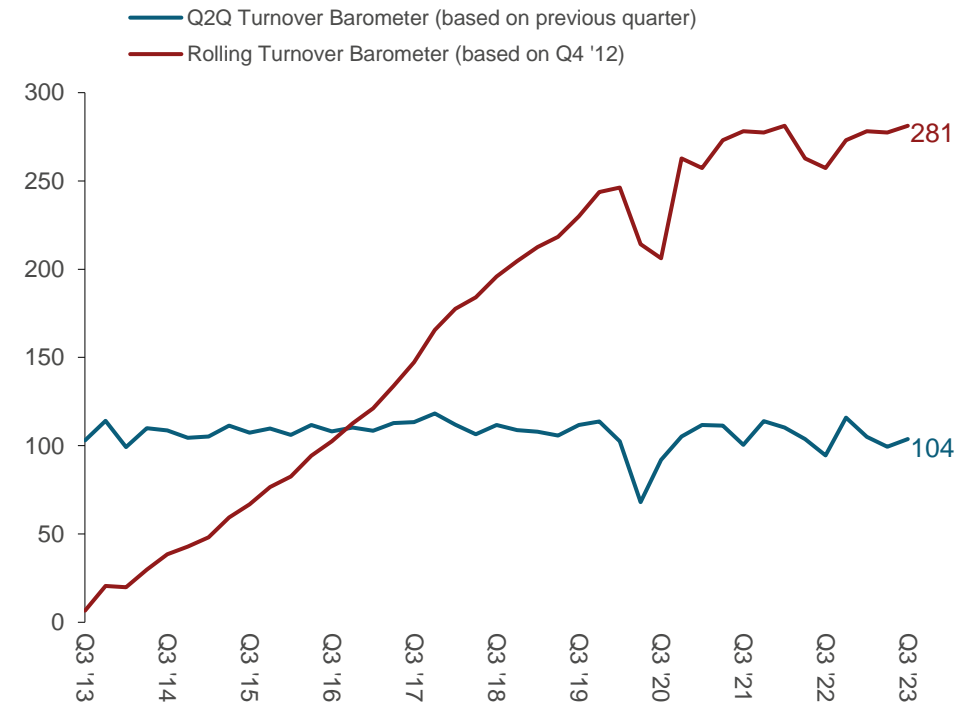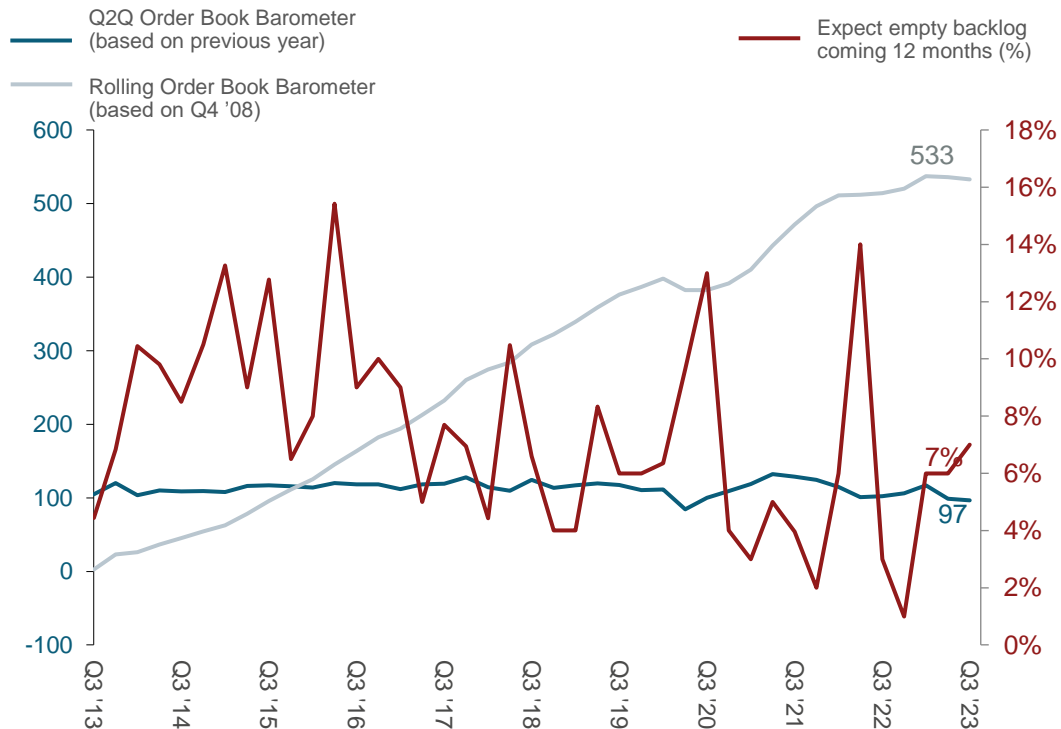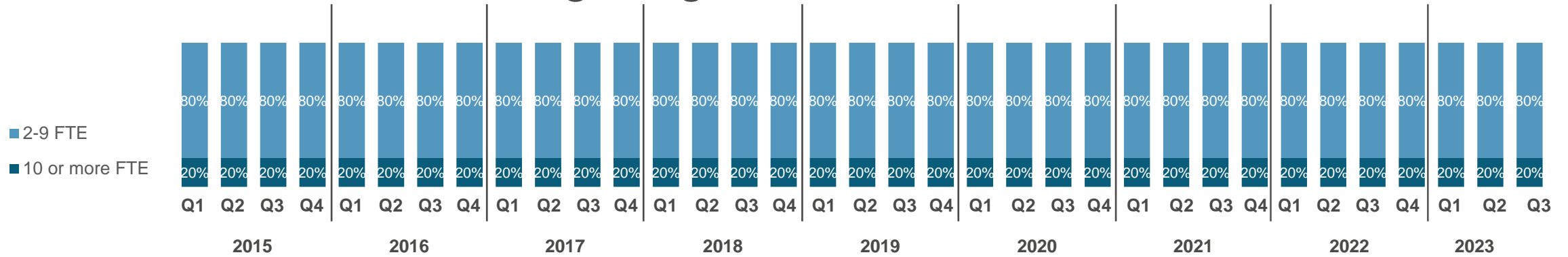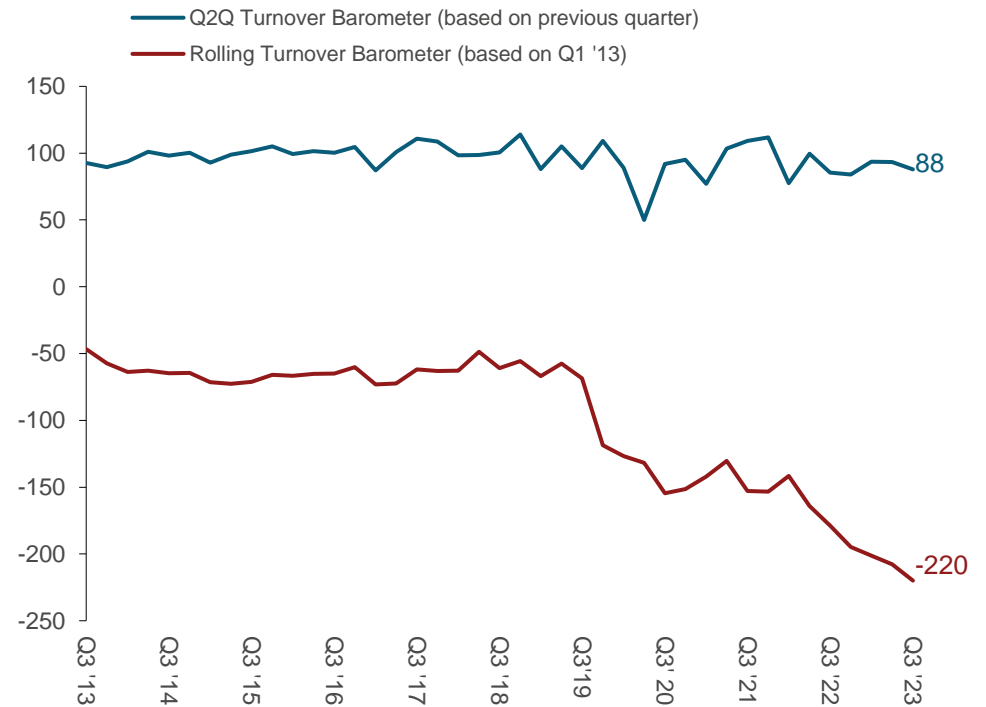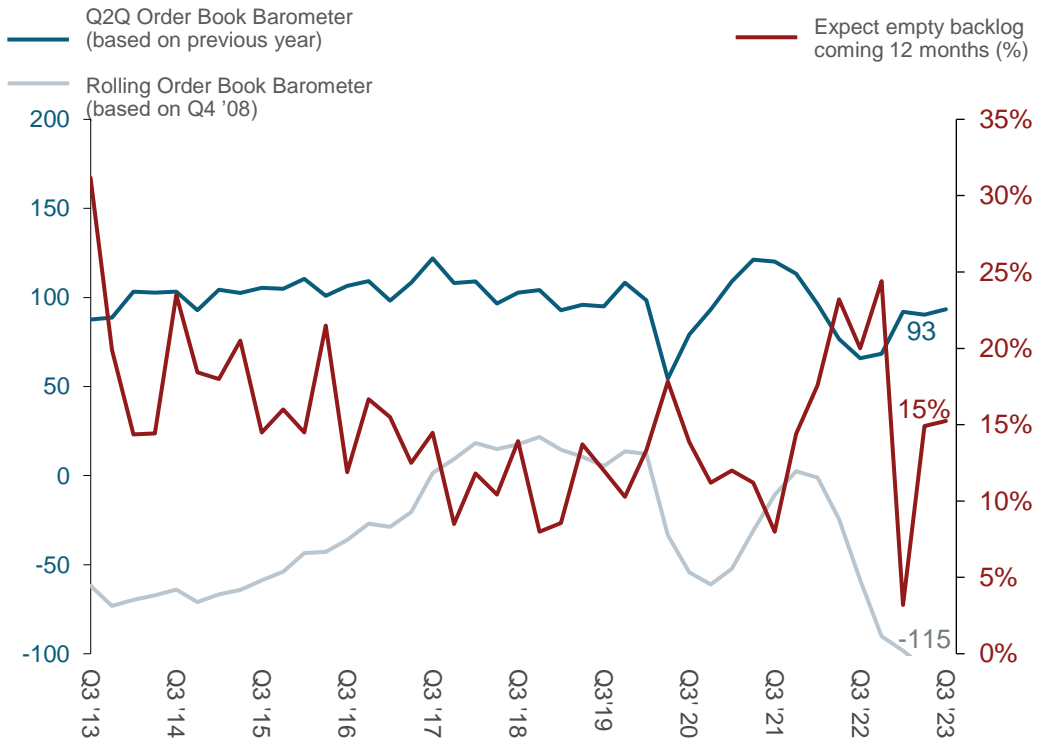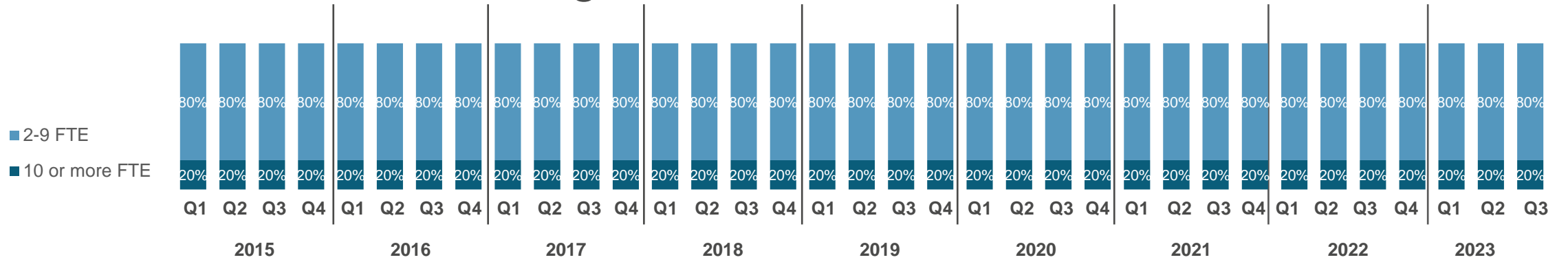
Short-term outlook among Dutch architects

Short-term outlook among Belgian architects

Short-term outlook among Polish architects

Development turnover and order book

Development turnover (based on previous quarter)

% sales in non-residential	🇬🇧 0-30	🇬🇧 31-70	🇬🇧 71-100	🇩🇪 0-30	🇩🇪 31-70	🇩🇪 71-100	🇫🇷 0-30	🇫🇷 31-70	🇫🇷 71-100	🇪🇸 0-30	🇪🇸 31-70	🇪🇸 71-100	🇮🇹 0-30	🇮🇹 31-70	🇮🇹 71-100	🇳🇱 0-30	🇳🇱 31-70	🇳🇱 71-100	🇧🇪 0-30	🇧🇪 31-70	🇧🇪 71-100	🇵🇱 0-30	🇵🇱 31-70	🇵🇱 71-100
Strongly increased (>5%)	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%
Slightly increased (0-5%)	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%
Stayed the same (0%)	52%	52%	52%	52%	52%	52%	52%	52%	52%	52%	52%	52%	52%	52%	52%	52%	52%	52%	52%	52%	52%	52%	52%	52%
Slightly decreased (0-5%)	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%
Strongly decreased (>5%)	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%
Barometer turnover	**98**	**98**	**98**	**98**	**98**	**98**	**98**	**98**	**98**	**98**	**98**	**98**	**98**	**98**	**98**	**98**	**98**	**98**	**98**	**98**	**98**	**98**	**98**	**98**

Development order book (based on previous year)

% sales in non-residential	🇬🇧 0-30	🇬🇧 31-70	🇬🇧 71-100	🇩🇪 0-30	🇩🇪 31-70	🇩🇪 71-100	🇫🇷 0-30	🇫🇷 31-70	🇫🇷 71-100	🇪🇸 0-30	🇪🇸 31-70	🇪🇸 71-100	🇮🇹 0-30	🇮🇹 31-70	🇮🇹 71-100	🇳🇱 0-30	🇳🇱 31-70	🇳🇱 71-100	🇧🇪 0-30	🇧🇪 31-70	🇧🇪 71-100	🇵🇱 0-30	🇵🇱 31-70	🇵🇱 71-100
Strongly increased (>5%)	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%
Slightly increased (0-5%)	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%
Stayed the same (0%)	52%	52%	52%	52%	52%	52%	52%	52%	52%	52%	52%	52%	52%	52%	52%	52%	52%	52%	52%	52%	52%	52%	52%	52%
Slightly decreased (0-5%)	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%
Strongly decreased (>5%)	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%
Barometer order book	**98**	**98**	**98**	**98**	**98**	**98**	**98**	**98**	**98**	**98**	**98**	**98**	**98**	**98**	**98**	**98**	**98**	**98**	**98**	**98**	**98**	**98**	**98**	**98**

Expectation empty order book in the next 12 months

Expectation empty order book in the next 12 months

% sales in non-residential	🇬🇧 0-30	🇬🇧 31-70	🇬🇧 71-100	🇩🇪 0-30	🇩🇪 31-70	🇩🇪 71-100	🇫🇷 0-30	🇫🇷 31-70	🇫🇷 71-100	🇪🇸 0-30	🇪🇸 31-70	🇪🇸 71-100	🇮🇹 0-30	🇮🇹 31-70	🇮🇹 71-100	🇳🇱 0-30	🇳🇱 31-70	🇳🇱 71-100	🇧🇪 0-30	🇧🇪 31-70	🇧🇪 71-100	🇵🇱 0-30	🇵🇱 31-70	🇵🇱 71-100
Yes	44%	44%	44%	44%	44%	44%	44%	44%	44%	44%	44%	44%	44%	44%	44%	44%	44%	44%	44%	44%	44%	44%	44%	44%
No	47%	47%	47%	47%	47%	47%	47%	47%	47%	47%	47%	47%	47%	47%	47%	47%	47%	47%	47%	47%	47%	47%	47%	47%
Do not know	9%	9%	9%	9%	9%	9%	9%	9%	9%	9%	9%	9%	9%	9%	9%	9%	9%	9%	9%	9%	9%	9%	9%	9%

Sample and methodology of the research

Most architectural firms have less than two FTE. Nevertheless, the focus of the European Architectural Barometer is on the larger firms. Therefore, the research is only conducted among architectural firms with two FTE and more. As the study is focused on architects active in construction, architects that are solely active in interior or landscaping are excluded from the research.

The table below shows the number of successful interviews in each country. The difference between the gross sample of respondents that were reached (all reached numbers) and the net sample of respondents that were reached, was caused by those architects who could not be contacted or had an incorrect phone number, and those who did not meet the selection criteria (mostly due to the fact that the architectural firms had less than two FTE). The difference between the net sample of respondents reached and the response are the number of architects who refused to participate.

Response	🇬🇧	🇩🇪	🇫🇷	🇪🇸	🇮🇹	🇳🇱	🇧🇪	🇵🇱
Gross sample (all attempts to approach respondents)	1000	1000	1000	1000	1000	1000	1000	1000
Net sample (all approached respondents)	1000	1000	1000	1000	1000	1000	1000	1000
Completed interviews	1000	1000	1000	1000	1000	1000	1000	1000
Response percentage (interviews/ net sample)	100%	100%	100%	100%	100%	100%	100%	100%

Methodology calculation of the Q2Q Saldo and Barometer

The European Architectural Barometer for the order book development and turnover development is calculated in the following way:

1. Respondents with a strong increase (>5%) are multiplied by 100
2. Respondents with a slight increase are multiplied by 50
3. Respondents that remained the same are multiplied by 0
4. Respondents with a slight decrease are multiplied by –50
5. Respondents with a strong decrease (>5%) are multiplied by –100
6. The sum of these values divided by 100, results in the Q2Q saldo.
7. Adding 100 to this saldo results in the Barometer figures, where 0 is the strongest possible decrease, 100 is stabilisation and 200 is the strongest possible increase.

The Barometer values calculated this way are presented in the report as Quarter to Quarter Turnover and Order book Barometer.

Example of calculation Q2Q Barometer value:

Development Turnover Spain	Q2 '15		Calculated Values
Increased by more than 5%	25%	x 100	2500
Slightly increased (0-5%)	28%	x 50	1400
Stayed the same (0%)	36%	x 0	0
Slightly decreased (0-5%)	3%	x -50	-150
Decreased by more than 5%	8%	x -100	-800

Q2Q Saldo = (2500 + 1400 – 150 – 800) / 100 = 30

Q2Q Barometer value = 100 + 30 = **130**

Methodology calculation of the Q2Q Saldo and Barometer

To calculate the developments in the turnover and the order book with regard to the first measurement in 2009, USP has developed the so-called Rolling Barometer. The Rolling Barometer is calculated as the cumulative sum of the Q2Q saldos of every quarter. The Rolling Barometer can drop or rise by 100 points per quarter at maximum.

Example: The Rolling Order Book Barometer is -66 after twelve quarters. In the worst case (all architects reporting a decrease of over 5% every quarter) the Rolling Barometer would be -1200. In the best case it would be 1200. Therefore, a score of -66 in Q4 2011 means a slightly worse situation than in Q4 2008.

	Q1'09	Q2'09	Q3'09	Q4'09	Q1'10	Q2'10	Q3'10	Q4 '10	Q1 '11	Q2 '11	Q3 '11	Q4 '11
Barometer order book												
Q2Q Barometer values	71	75	100	85	100	110	94	94	111	102	94	99
Saldo Q2Q Values	-29	-25	0	-15	0	10	-6	-6	11	2	-6	-1
		+ (-25)	+ (0)	+ (-15)	+ etc.							
Rolling Barometer Values	-29	-54	-54	-69	-69	-59	-65	-71	-60	-59	-65	**-66**
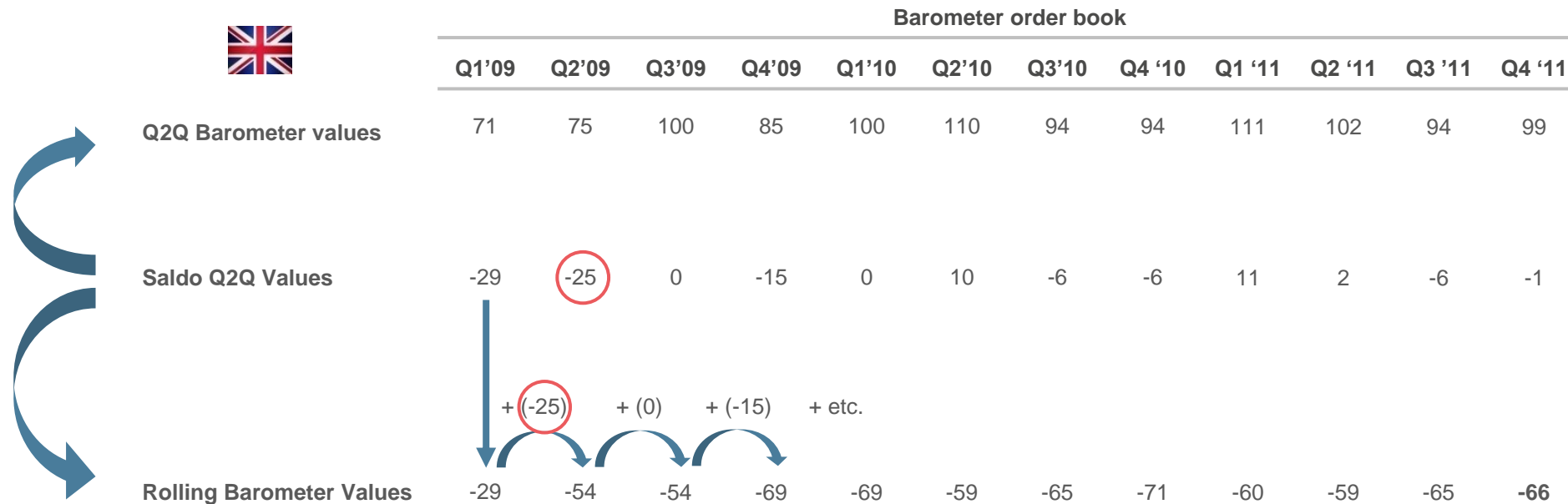
Future building volumes: building a model for prediction

Building volumes

Architects are at the front of the construction sector. They are the first to perceive positive and negative changes. The current developments of architectural firms have a strong predictive impact on the total market. USP publishes its predictions for the building volumes based on the developments experienced by architects.

The model

USP uses a model based on eleven market indicators and USPs own results. The model combines information about the economy, like construction requests and confidence figures, with data about the developments within architects' experience, such as changes in the turnover and the number of active architects. Only information that proved to have a strong correlative value on the building volume is used. Subsequently, every kind of data is weighed based on the predictive value.

High predictive value

To ensure the correctness of the predictive value, the model has been – with retroactive effects – compared to the actual growth and shrinkage of the construction volume since 2003 for the Dutch* market and since Q3 2009 for the remaining countries. The model turns out to possess a very high predictive value. Nevertheless, the forecast has to be interpreted with caution, as it remains a calculation. As with all predictions, the margin of error can be larger, comparable to the weather forecast: sometimes the USP model can be inaccurate.

Calculation predictive value

The predictive value is calculated based on the consistency of the market indicators with construction volumes, for the renovation, maintenance and the new build markets. The correlation is determined by a regression analysis, i.e. a statistical technique for analysing data in which there is a (possible) specific connection, known as regression.

* Since 2003, the developments of architects in the Netherlands have been monitored by USP's sister organisation BouwKennis. Therefore, it is possible for the Netherlands to calculate the connection between the architects and the building volume based on 10 years of data.

Future building volumes: Calculation

The Dutch market has been taken as a basis. The correlation between market volume regarding new build, maintenance and renovation on the one hand, and possible explanatory factors on the other hand, serves as a starting point.

The correlation with building volumes is tested for a total of eleven market indicators together with two outcomes of the European Architectural Barometer. The correlation of the following four indicators appeared to be strongest:
- Building permits – m² of useful floor area in non-residential buildings
- Building permits, number of dwellings
- Development of Turnover Barometer (European Architectural Barometer figures)
- Number of FTE working at architectural companies (European Architectural Barometer figures)

The predicting value of these indicators is between 54% and 91%. Because a longer history of data was not available for most countries, the development of these four indicators in the last four quarters and the four quarters before served as a guidance for this measurement. The used range of five indicators is not static and can be adjusted for future calculations. With the database becoming more complete, more reliable correlations can adjust the mix of indicators. A longer range of regression measurements shall replace the comparison of the last four quarters with the four quarters before.

The forecast is based on the market knowledge of USP Marketing Consultancy together with the market figures available, such as building permits and the developments among architects who are mainly active in renovation or new build as well as mainly active in residential or non-residential. Due to the limited number of quarters, a forecast based on a statistical model is not possible for now. The model that was used has a lower prediction value for this period. However, USP Marketing Consultancy aims at clarifying the general direction of the construction market development by publishing these data and the predictions will be updated in the coming reports.

Questionnaire – Standard
These questions are asked every measurement

1. How many employees (in FTE) does your company currently have, including yourself? [if less than 2 FTE, end of research]

2. As an architectural firm, are you mostly active in the segment housing, non-residential building, interior, or landscaping? [If interior or landscaping, end of research]

3. What is your position?

4. How many employees in FTE did your company have at the end of 2021?

5. How many employees in FTE did your company have at the end of 2020?

6. How many employees in FTE did your company have at the end of 2019?

7. If your turnover should relate to housing and non-housing, what percentage of your revenue do you get from housing-related jobs?

8. Are you mostly active in new build or renovation?

9. How did the turnover develop this quarter compared to the previous quarter? Decreased by more than 5%; slightly decreased (0-5%); stayed the same (0%); slightly increased (0-5%); strongly increased (more than 5%)

10. What are your expectations for the development of your turnover in the fourth quarter of 2022 in comparison to the turnover in the fourth quarter of 2021? Decreased by more than 5%; slightly decreased (0-5%); stayed the same (0%); slightly increased (0-5%); strongly increased (more than 5%)

11. How did your order book develop in this quarter compared to the same quarter previous year? Decreased by more than 5%; slightly decreased (0-5%); stayed the same (0%); slightly increased (0-5%); strongly increased (more than 5%)

12. How many new projects has your company scored/been commissioned in the past two months?

13. How many projects have been postponed in this quarter?

14. How many projects were not started and cancelled in this quarter?

15. Do you expect that your order book might be empty these coming 12 months?

Questionnaire – Theme questions

1. What describes sustainable construction best according to you?

2. And what do you think are the most important characteristics of circular economy in the construction sector?

3. How does your organization see the connection between circular construction, CO_2 reduction, energy efficiency and sustainability?

   - As separate topics with no connection

   - As separate topics but with some connection

   - As part of the bigger picture, one cannot see one topic without the other

4. To what extent do your clients ask for sustainability and are they willing to invest more in it?

5. How much more are clients willing to invest when presented with sustainable products or solutions?

6. What would be approximately the share of your projects where sustainability is taken into account?

7. Which other stakeholders besides architects are influential when it comes to promoting sustainable construction?

8. To what extent do you see the following issues as a problem for the transition to a sustainable and circular construction sector?

9. What actions do you take as a company to create a sustainable building project?

10. Which sustainability certifications (schemes) are most important in the construction industry?

Questionnaire – Theme questions

11. Are you familiar with the terms …?

- Material passport
- EPD (Environmental Product Declaration)
- Urban mining
- C2C certified products (C2C = Cradle to Cradle)

12. Does your organization make use of…?

- Material passport
- EPD (Environmental Product Declaration)
- Urban mining
- C2C certified products (C2C = Cradle to Cradle)

13. Why isn't your organisation working (more) with EPD's?

14. Do you think that … … offers added value for implementing in your own projects in a more circular way?

- Material passport
- EPD (Environmental Product Declaration)
- Urban mining
- C2C certified products (C2C = Cradle to Cradle)

15. What are innovative product solutions with regard to sustainable and circular construction that are already being used?

16. Which building components do you think contribute the most to create a sustainable building?

17. How can manufacturers of building and installation materials contribute to create a more sustainable and circular construction sector, both generic as and at a construction site specifically?

About USP

USP Marketing Consultancy

Head office   **Subsidiaries**

Rotterdam   **Düsseldorf**   **Zagreb**

Total
70

Research Analysts   Project managers

Consultants

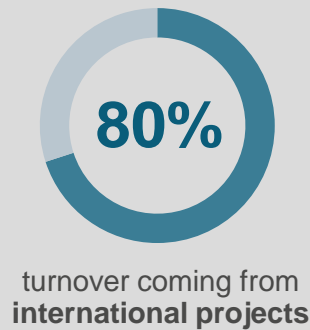**Market specialist**
installation, construction, home improvement and real estate

Dedicated and multi-client research

Active in the market for 29 years

250+ dedicated market research projects annually

Revenue distribution

80%
turnover coming from **international projects**

85%
turnover coming from **dedicated market research**, 15% from multi client

70%
turnover coming from **B2B**, 30% B2C

Research in
31
countries in 2021

43
focus groups

1,778
in-depth interviews

63,758
B2B CATI interviews

54,850
B2C online interviews

What we do

Examples

Segmentation

Customer journey

Branding

Concept/ product research

Customer satisfaction

Trends

Distribution research

Market exploration

Pricing

Market size

### Dedicated market research

- Tailor made
- Driven by your information needs
- Advice & consultancy based on facts and over 25 years of experience in the industry
- Worldwide coverage
- B2B, B2C, qualitative and quantitive research or a combination of both
- Within our market specialism, all types of researches can be conducted
- Targeting the right audience, with the right questions at the right time.

Our multi-client research monitors

	European **Architectural** Barometer	European **Contractor** Monitor	European **Mechanical Installation** Monitor	European **Electrical Installation** Monitor	European **Painter Insight** Monitor	European **Home Improvement** Monitor
Target group	Architects	Building contractors	HVAC installers	Electrical installers	Professional painters	Consumers
Methodology						
Annual sample size	3,400 interviews	2,050 interviews	2,600 interviews	3,000 interviews	2,300 interviews	26,400 interviews
Country scope	• Germany • United Kingdom • France • Netherlands • Belgium • Poland • Spain • Italy	• Germany • United Kingdom • France • Netherlands • Belgium • Poland • Spain • Italy	• Germany • United Kingdom • France • Netherlands • Belgium • Poland	• Germany • United Kingdom • France • Netherlands • Belgium • Poland • Spain	• Germany • United Kingdom • France • Netherlands • Belgium • Poland • Spain • Italy • Denmark • Sweden	• Germany • United Kingdom • France • Netherlands • Belgium • Poland • Spain • Italy • Denmark • Sweden • Austria
Way of reporting	Quarterly	Bi-annually	Quarterly	Quarterly	Annually	Quarterly
2022 Theme topics	• Q1: Sustainability • Q2: Trends in material usage • Q3: Decision making • Q4: Brand health scan	• H1: Prefabrication • H2: Digitalisation and BIM	• Q1: Digitalisation and BIM • Q2: Prefabrication • Q3: Smart buildings and products • Q4: Media orientation	• Q1: Sustainability • Q2: Smart buildings and products • Q3: Services in the installation market • Q4: Brand health scan	• Trend tracking • Sustainability • Labour shortage • Online buying • Media orientation	• Q1: Orientation; rise of digital natives • Q2: Purchase Channels; online leaders • Q3: Brand health check • Q4: DIY vs DIFM; outsourcing jobs

We are active globally
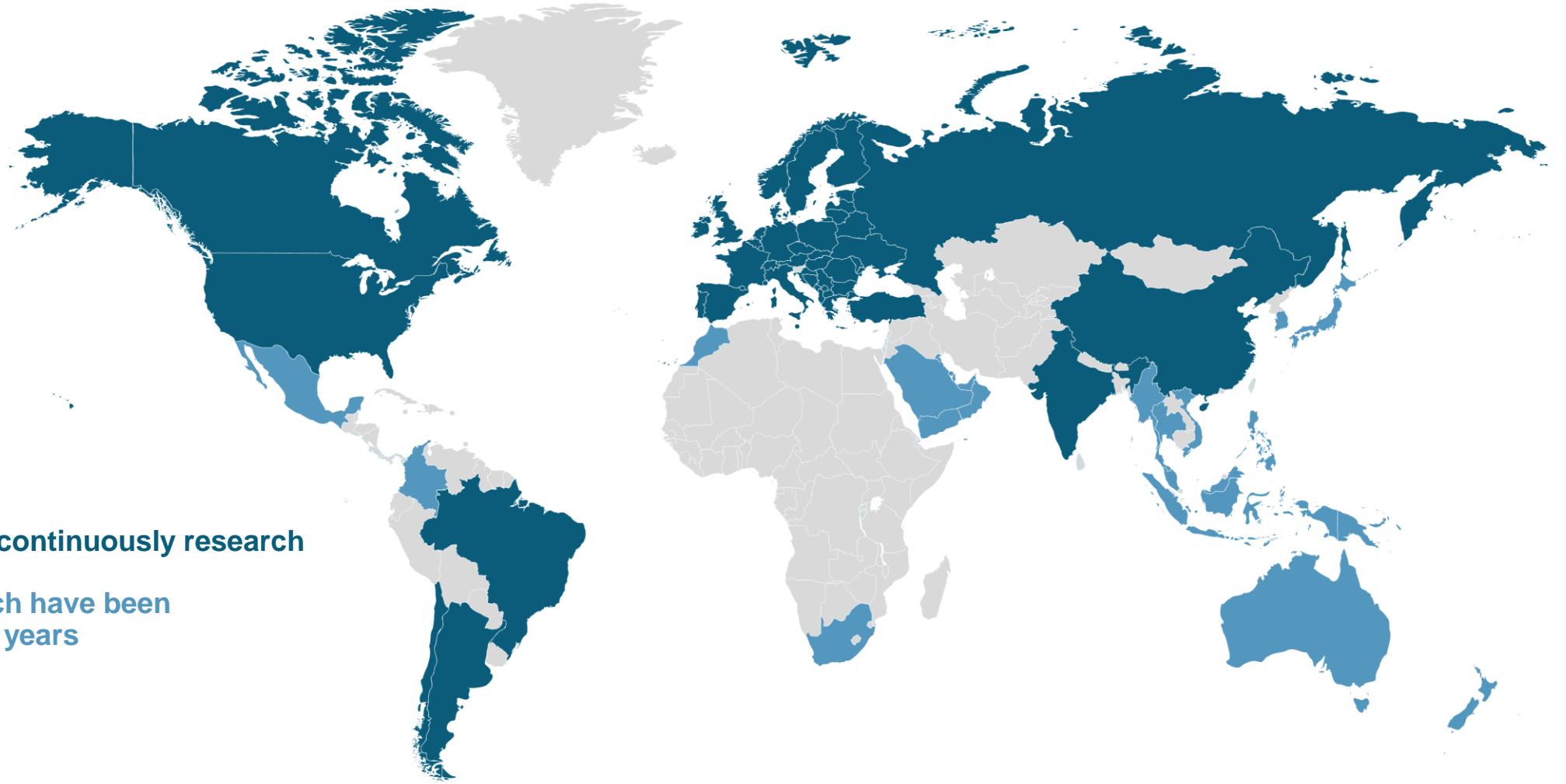
Countries which we continuously research

Other countries which have been researched in past 2 years

Principals of USP

Construction				DIY		Installation	
ASSA ABLOY	AkzoNobel	Wienerberger	HILTI	OBI	adeo	ABB	BOSCH
ArcelorMittal	DAW	3M	SAINT-GOBAIN	ALLEGION	maxeda DIY Group	GRUNDFOS	hager
etex inspiring ways of living	FESTOOL	Villeroy & Boch 1748	DSM	3V3	Ideal STANDARD	Schneider Electric	LG Life's Good
icopal	Interface	WD-40	fischer innovative solutions	BRIGGS&STRATTON	KOHLER	MITSUBISHI ELECTRIC	Panasonic
KNAUF	OWENS CORNING	UNILIN FOR SMART LIVING	PPG	Dulux	KÄRCHER	VIESMANN	Vaillant
ROCKWOOL	sto Building with conscience.	VELUX	stiho	WAGNER	GROHE	Signify	ShurTech Brands
Tarkett	TRESPA	tesa	DÖRKEN	Intergamma	Yale	sonepar	TTi

USP

Marketing Consultancy