European Architectural Barometer Q4 2023

BIM in construction

February 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)

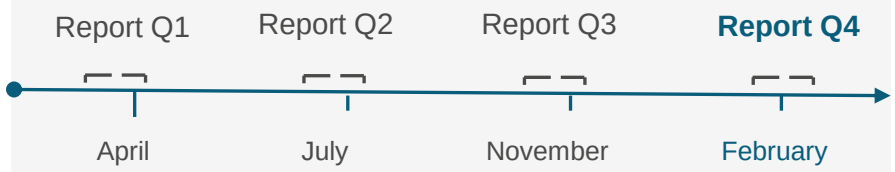
Quarterly theme topics in 2023:
Q1: Media Orientation
Q2: Sustainability
Q3: Prefab
Q4: BIM

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.

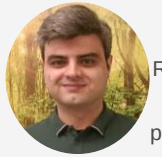
THE TIMELINE



PROJECT TEAM

Jeroen de Gruijl
Consultant
+31 6 83979041
deGruijl@usp-mc.nl

Yadi Huang
Research Analyst
huang@usp-mc.nl



Dino Pekeč
Research Analyst
pekec@usp-mc.nl

Dirk Hoogenboom
Research Consultant
+31 652098924
hoogenboom@usp-mc.nl

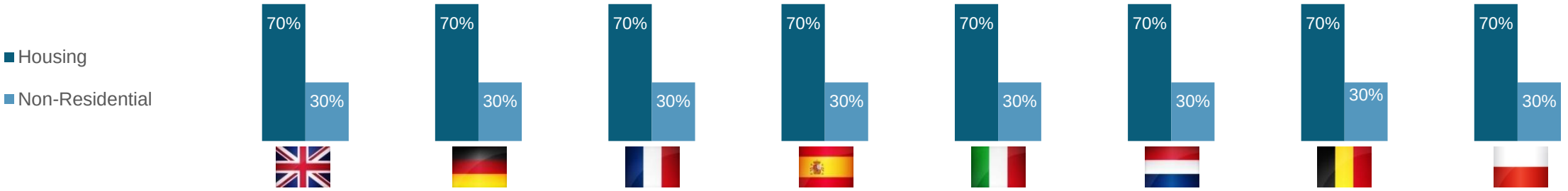
Background of the architects

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



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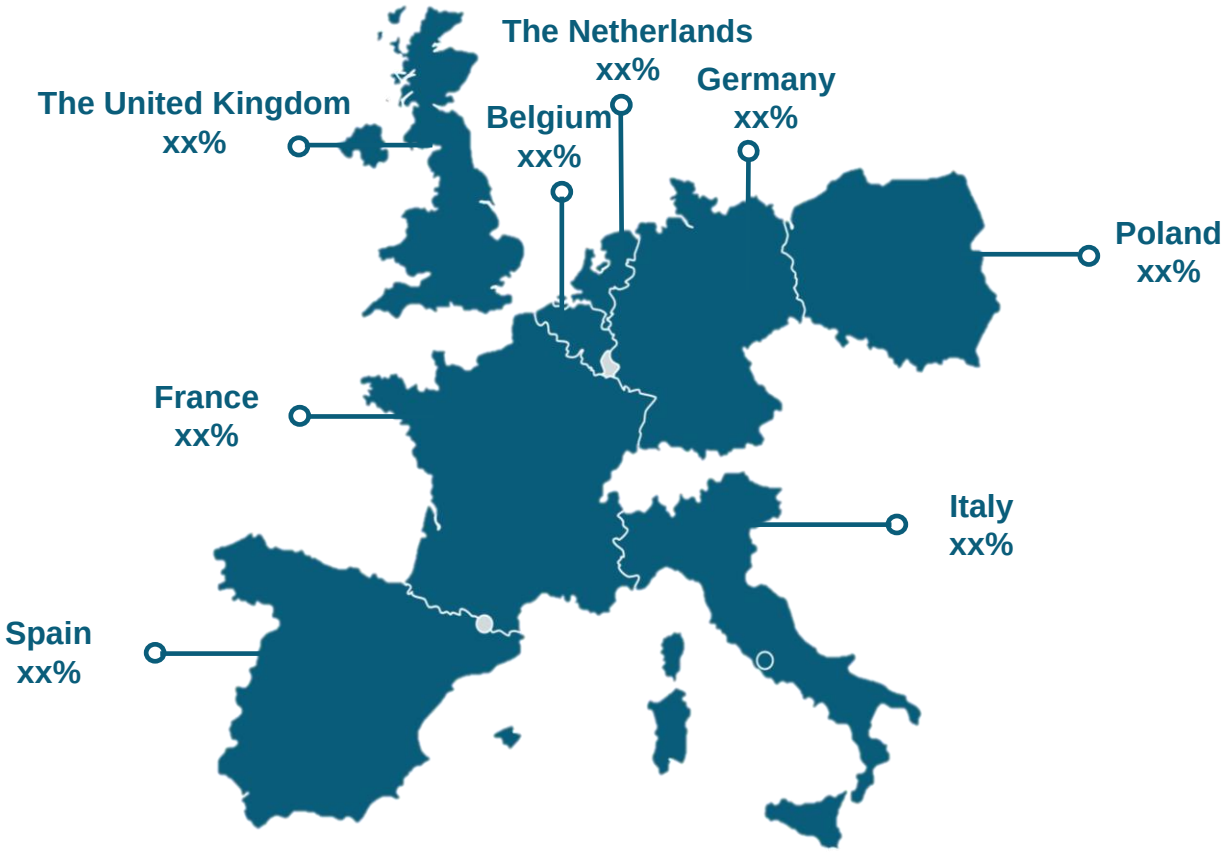
Share of BIM users in Europe

What is the share of BIM users?

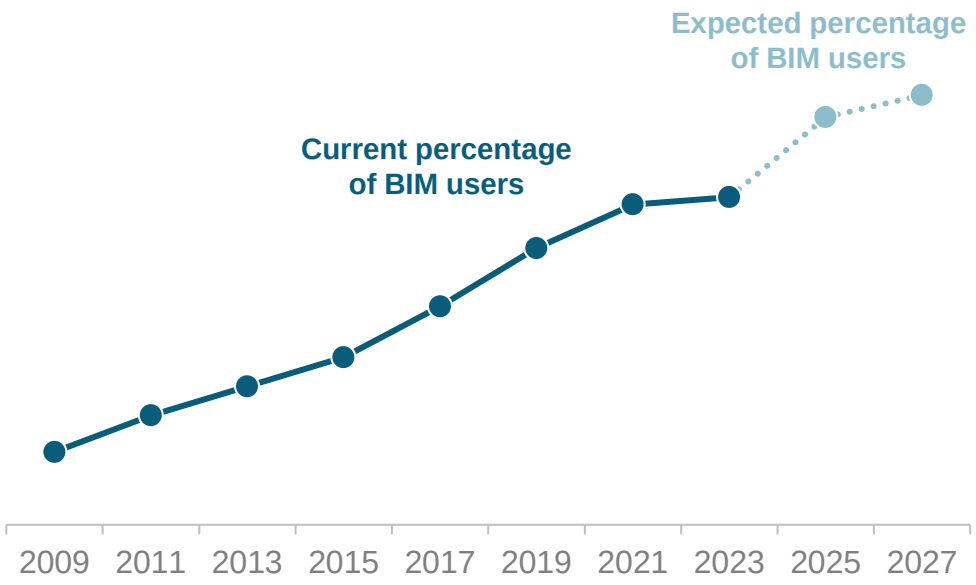


- In xxxxx

Conclusion

Current and expected number of BIM users

When do you expect to start using BIM?



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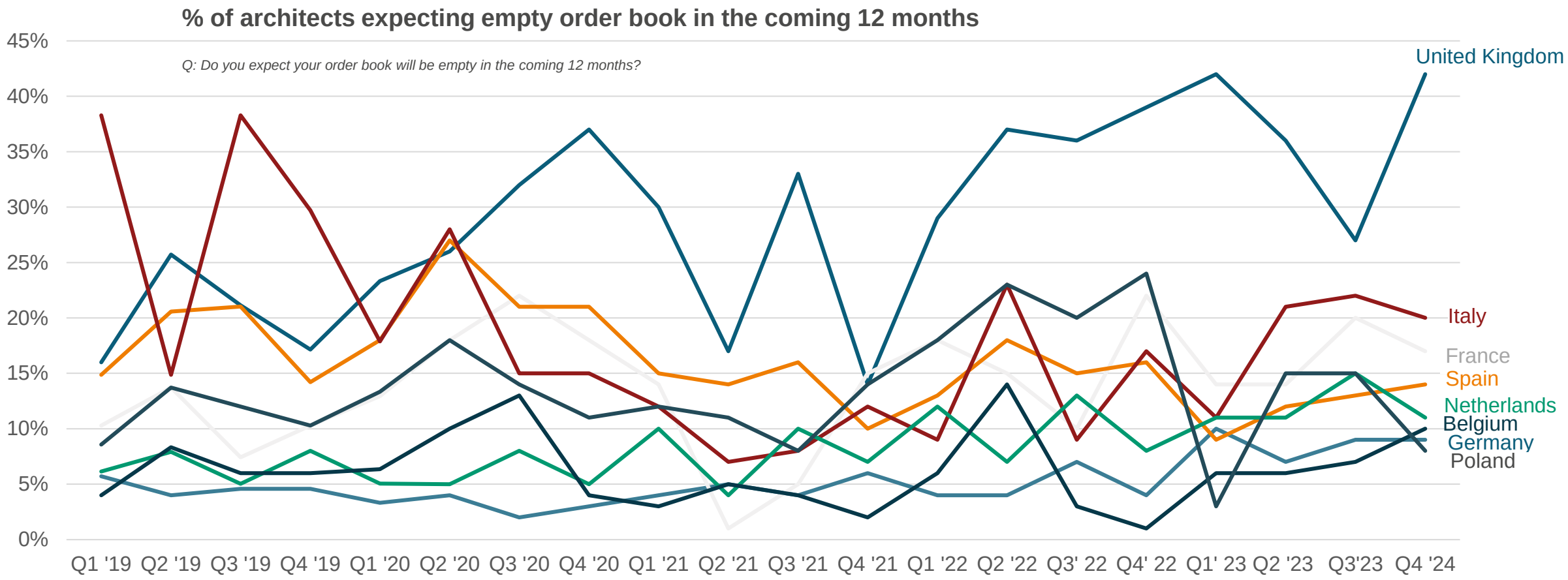
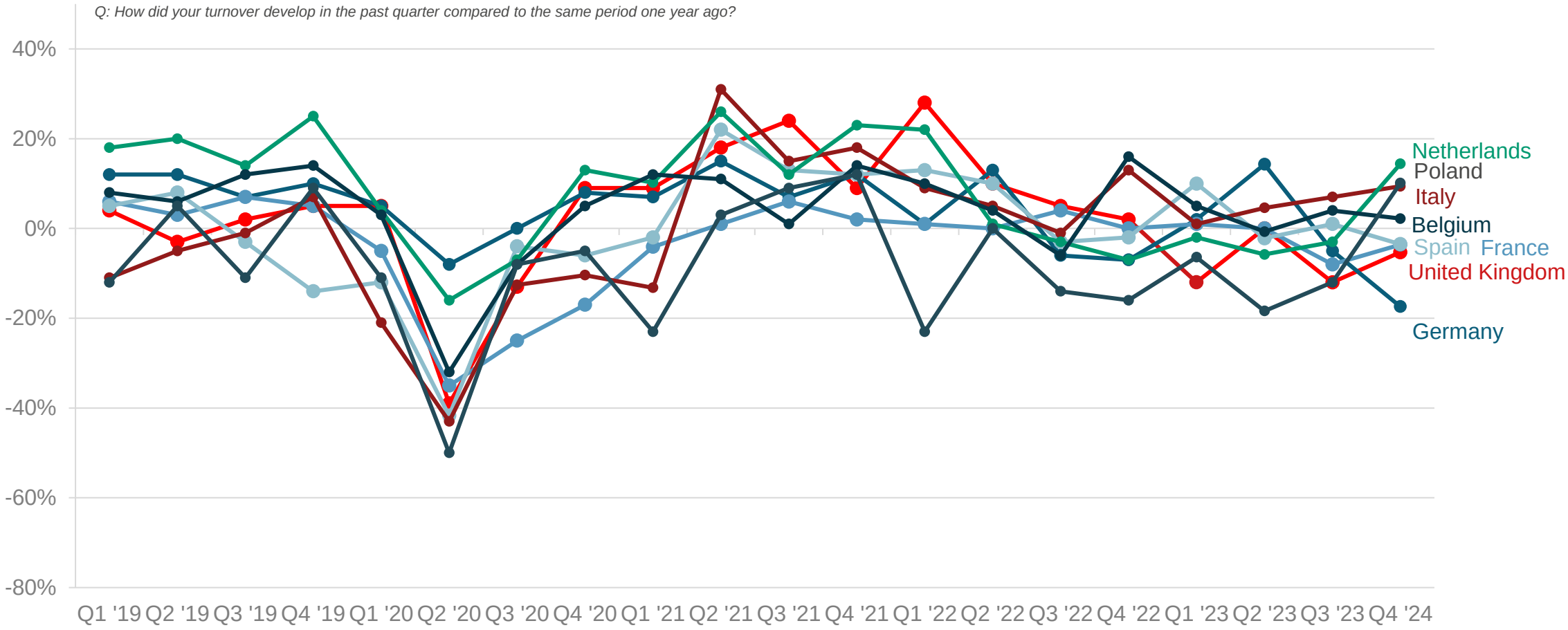

% of architects expecting empty order book in the coming 12 months
Q: Do you expect your order book will be empty in the coming 12 months?
45%
40%
35%
30%
25%
20%
15%
10%
5%
0%
Q1 '19
Q2 '19
Q3 '19
Q4 '19
Q1 '20
Q2 '20
Q3 '20
Q4 '20
Q1 '21
Q2 '21
Q3 '21
Q4 '21
Q1 '22
Q2 '22
Q3' 22
Q4' 22
Q1' 23
Q2 '23
Q3'23
Q4 '24
United Kingdom
Italy
France
Spain
Netherlands
Belgium
Germany
Poland

Conclusion

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

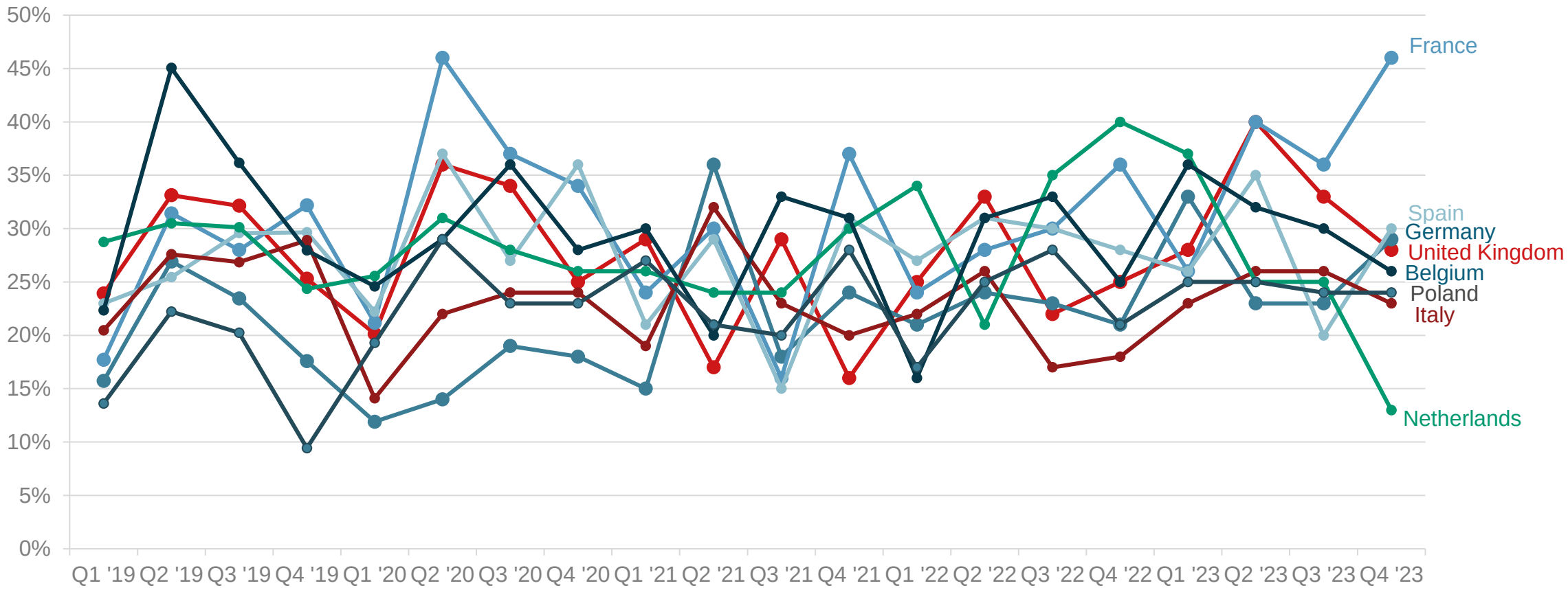
Q: How did your turnover develop in the past quarter compared to the same period one year ago?



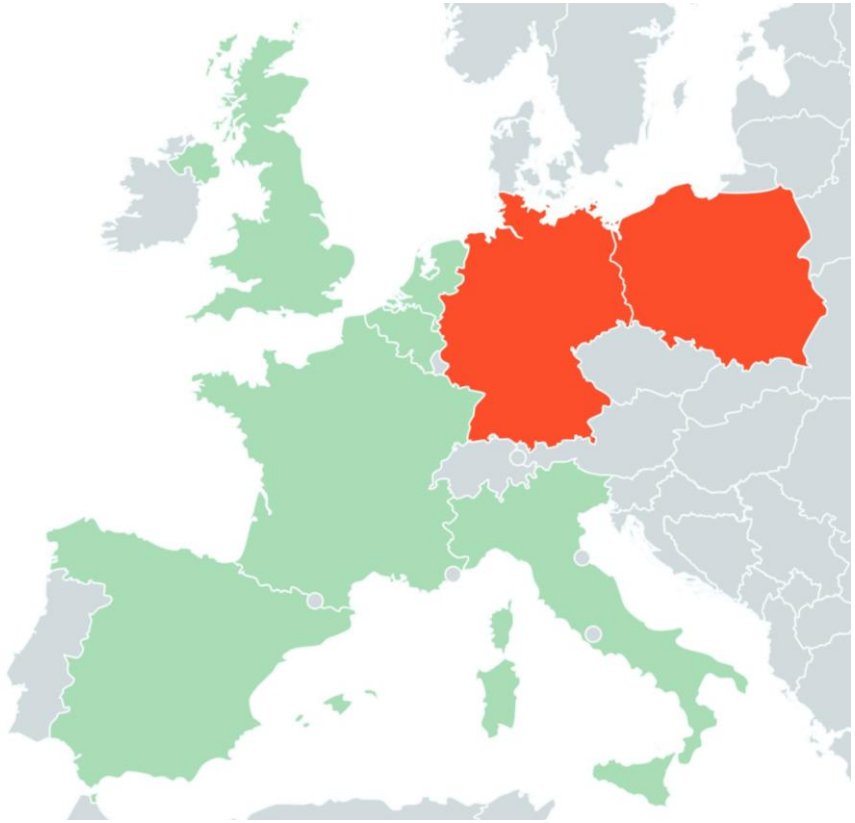
Conclusion

% of architects experiencing cancelled projects

Q: How many projects have been cancelled in the past quarter?



Conclusion



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

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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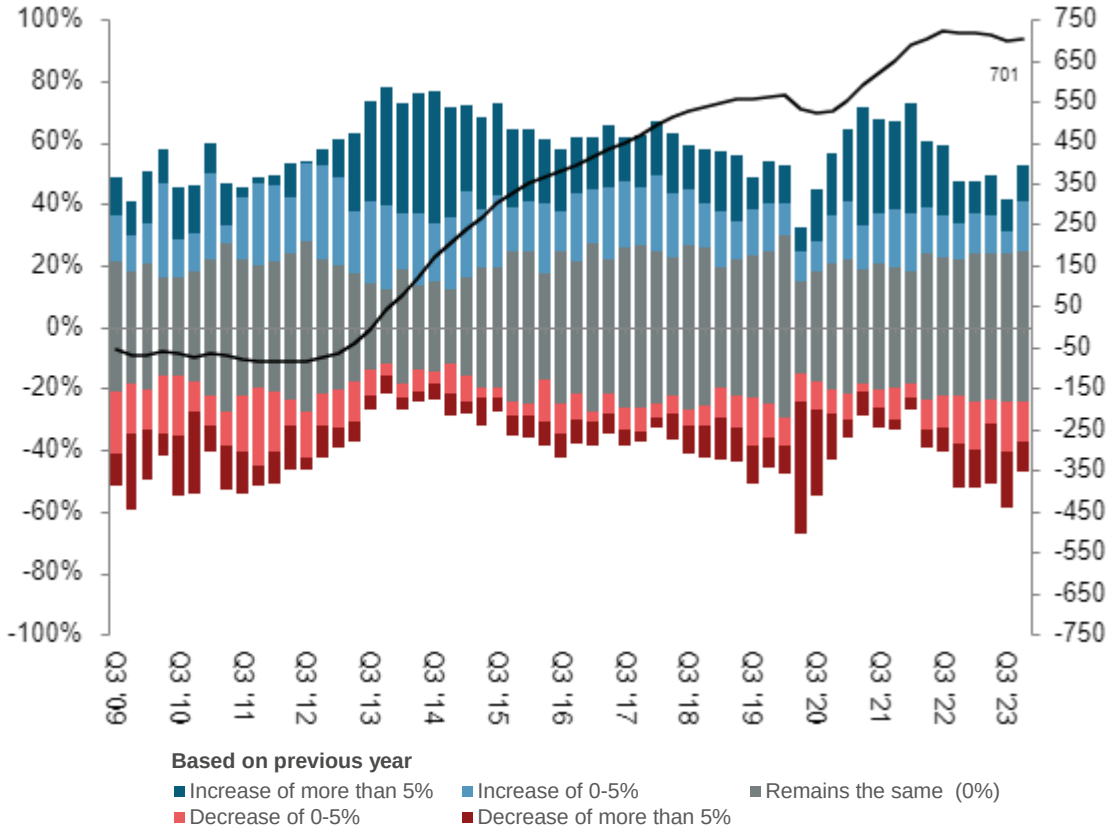
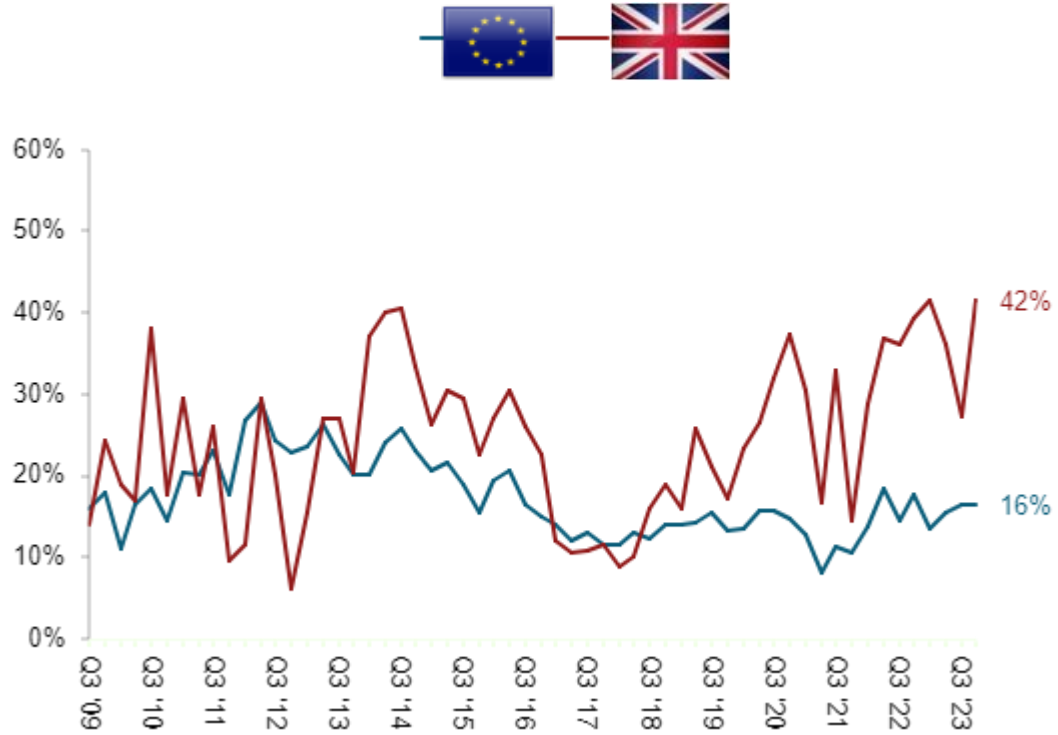
The share of British architects expecting an empty order book in the next twelve months remains exceptionally high.V

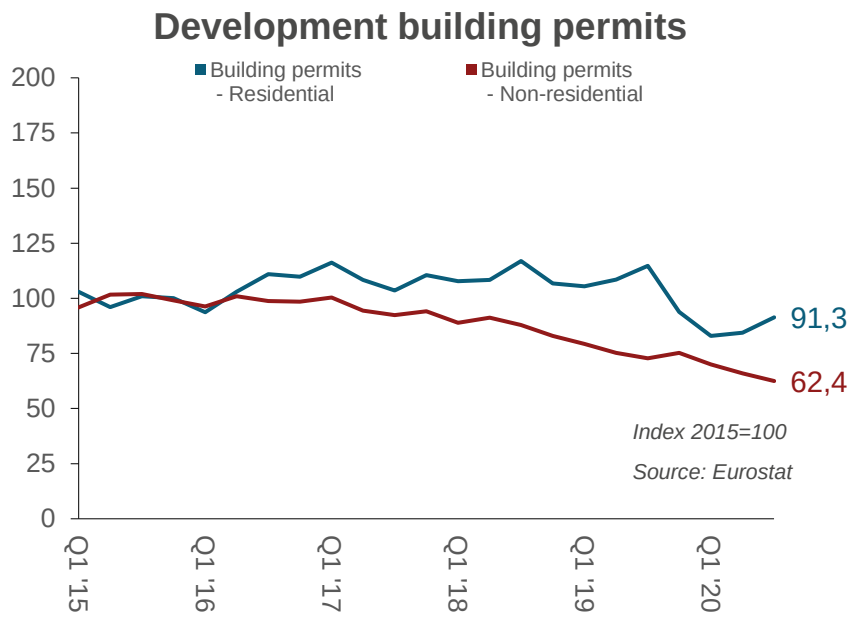
Development of order book



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.



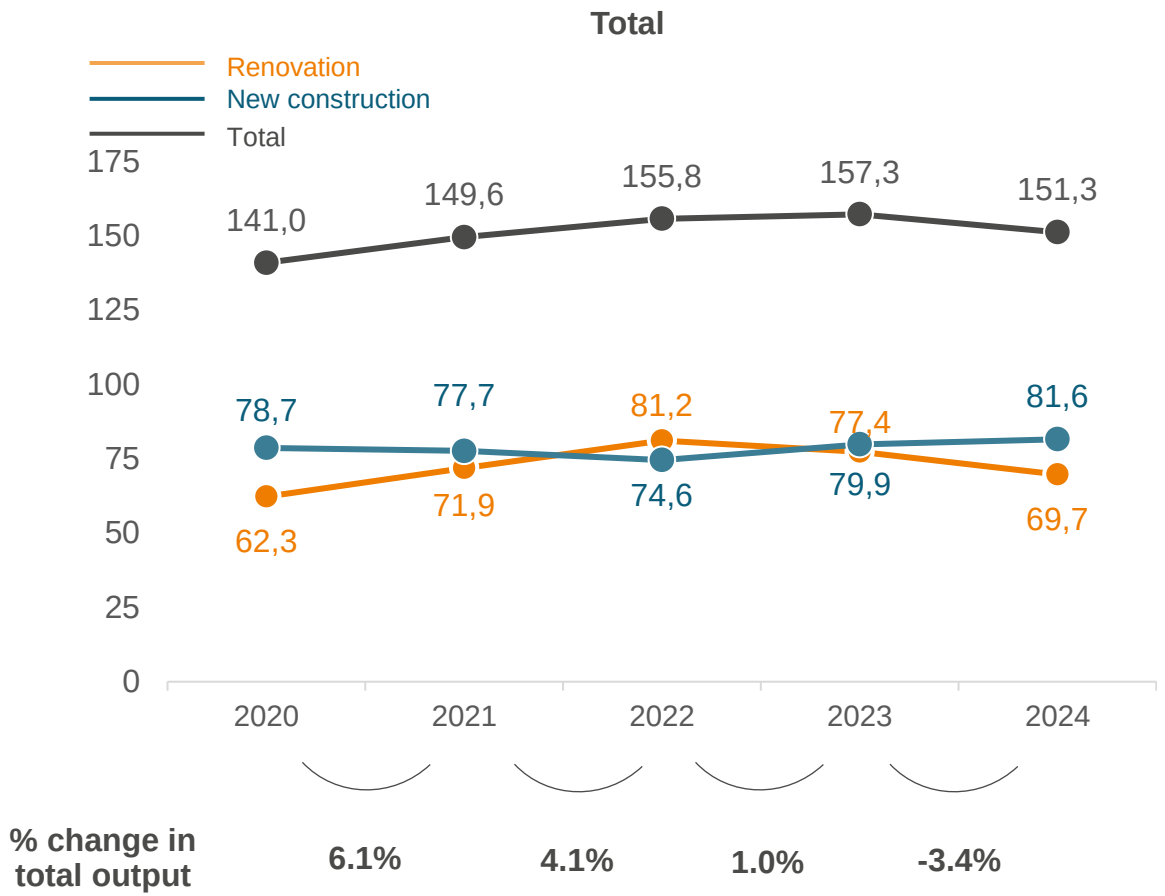
Economic and construction related indicators	Value Q4 2022	Value Q3 2023	Value Q4 2023	Q-2-Q development
GDP (quarterly growth rate) (%)*	0.1	-0.1	-0.3	Negative
Consumer confidence indicator**	n/a	n/a	n/a	
Industrial confidence indicator**	n/a	n/a	n/a	
Construction confidence indicator**	n/a	n/a	n/a	
Production value buildings (index 2015=100)**	n/a	n/a	n/a	
Architects with postponed projects (%)***	52	49	45	Positive
Architects with cancelled projects (%)***	25	33	28	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)



Data of the economic developments are available per country

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Conclusion

Top 5 types of software used

What is the name of the CAD software your firm uses?

	Q4 2023	2021	2019	2017
xx	40%	xx%	xx%	xx%
xx	40%	xx%	xx%	xx%
xx	40%	xx%	xx%	xx%
xx	40%	xx%	xx%	xx%
xx	40%	xx%	xx%	xx%
Other	40%	xx%	xx%	xx%
None/don't know	40%	xx%	xx%	xx%

Conclusion

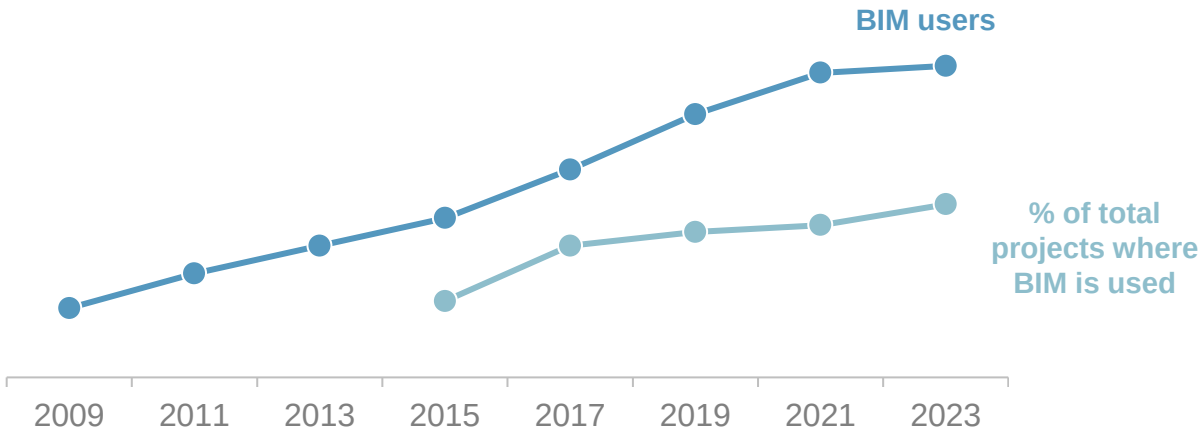
Top 5 types of software used

What is the name of the CAD software your firm uses?

	Country	xx	xx	xx	xx	xx
	United Kingdom	xx%	xx%	xx%	xx%	xx%
	Germany	xx%	xx%	xx%	xx%	xx%
	France	xx%	xx%	xx%	xx%	xx%
	Spain	xx%	xx%	xx%	xx%	xx%
	Italy	xx%	xx%	xx%	xx%	xx%
	Netherlands	xx%	xx%	xx%	xx%	xx%
	Belgium	xx%	xx%	xx%	xx%	xx%
	Poland	xx%	xx%	xx%	xx%	xx%

Conclusion

What is the share of BIM users?



Usage and turnover development in BIM projects

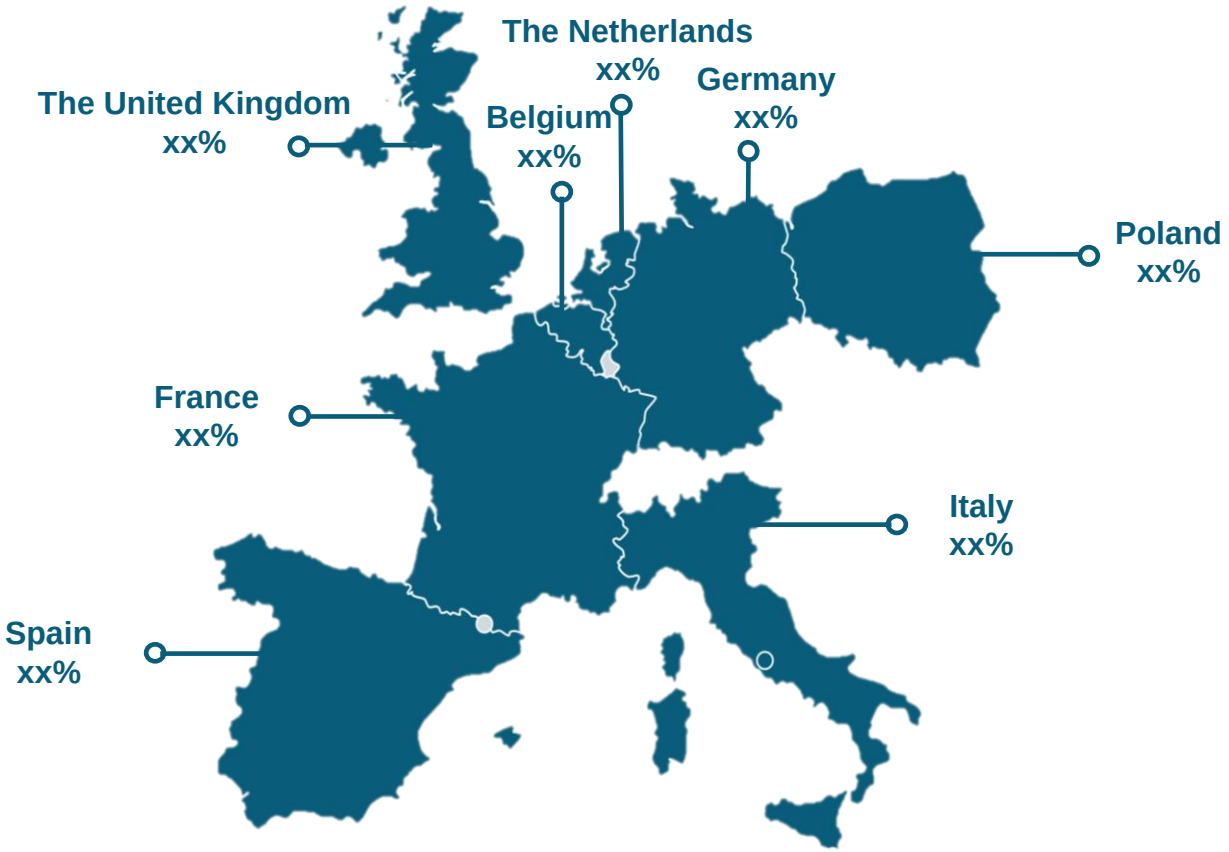
What is the share of projects in which BIM is used?
What percentage of the turnover/ revenue comes from BIM projects?

	Q4 2023	Q2 2021	Q4 2019	Q4 2017
Turnover from BIM projects as % of total turnover	20%	**xx%**	**xx%**	**xx%**
Projects in which BIM is used	20%	xx%	xx%	xx%

Conclusion

Share of BIM users in Europe

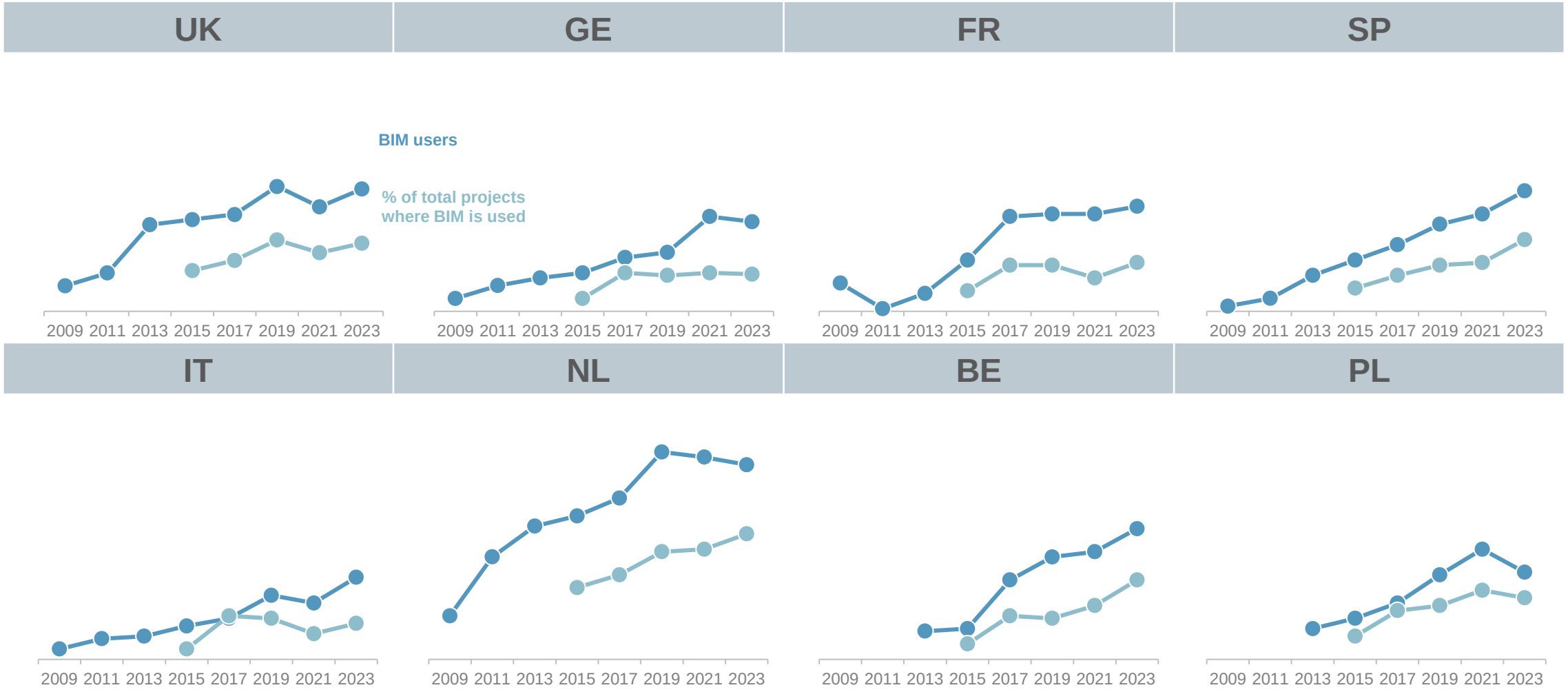
What is the share of BIM users?



Ranking of the countries

Country	Ranking of BIM users 2021	Ranking of BIM Users 2023
United Kingdom	1st	1st
Germany	1st	1st
France	1st	1st
Spain	1st	1st
Italy	1st	1st
Netherlands	1st	1st
Belgium	1st	1st
Poland	1st	1st

Conclusion


UK
GE
FR
SP
BIM users
% of total projects where BIM is used
2009 2011 2013 2015 2017 2019 2021 2023
IT
NL
BE
PL

Conclusion

When did your company start working with BIM?
When do you expect to start using BIM?

	Started using BIM	When do you expect to start using BIM?*					Projections of the beginning of the use of BIM
	AVERAGE	1 to 2 years	3 to 5 years	6 to 10 years	11 and later	Not planning	*AVERAGE
UK	xx years	20%	20%	20%	20%	20%	In xx years
Germany	xx years	20%	20%	20%	20%	20%	In xx years
France	xx years	20%	20%	20%	20%	20%	In xx years
Spain	xx years	20%	20%	20%	20%	20%	In xx years
Italy	xx years	20%	20%	20%	20%	20%	In xx years
Netherlands	xx years	20%	20%	20%	20%	20%	In xx years
Belgium	xx years	20%	20%	20%	20%	20%	In xx years
Poland	xx years	20%	20%	20%	20%	20%	In xx years

*Average of respondents who are planning to start using BIM
*The question is asked only to respondents who are not already using BIM

Conclusion

Leading reasons for not (yet) using BIM

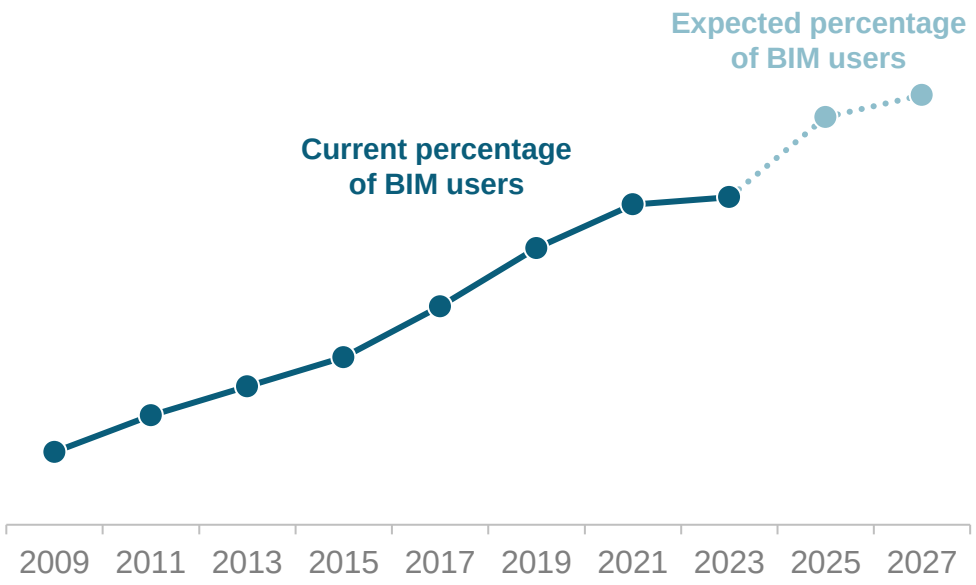
Why is your organization not (yet) started with using BIM?

	Total	United Kingdom	Germany	France	Spain	Italy	Netherlands	Belgium	Poland
xx	20%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%
xx	20%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%
xx	20%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%
They have not considered it yet	20%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%
It takes time	20%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%
xx	20%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%
xx	20%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%
We don't know how to implement BIM	20%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%

Conclusion

Current and expected number of BIM users

When do you expect to start using BIM?

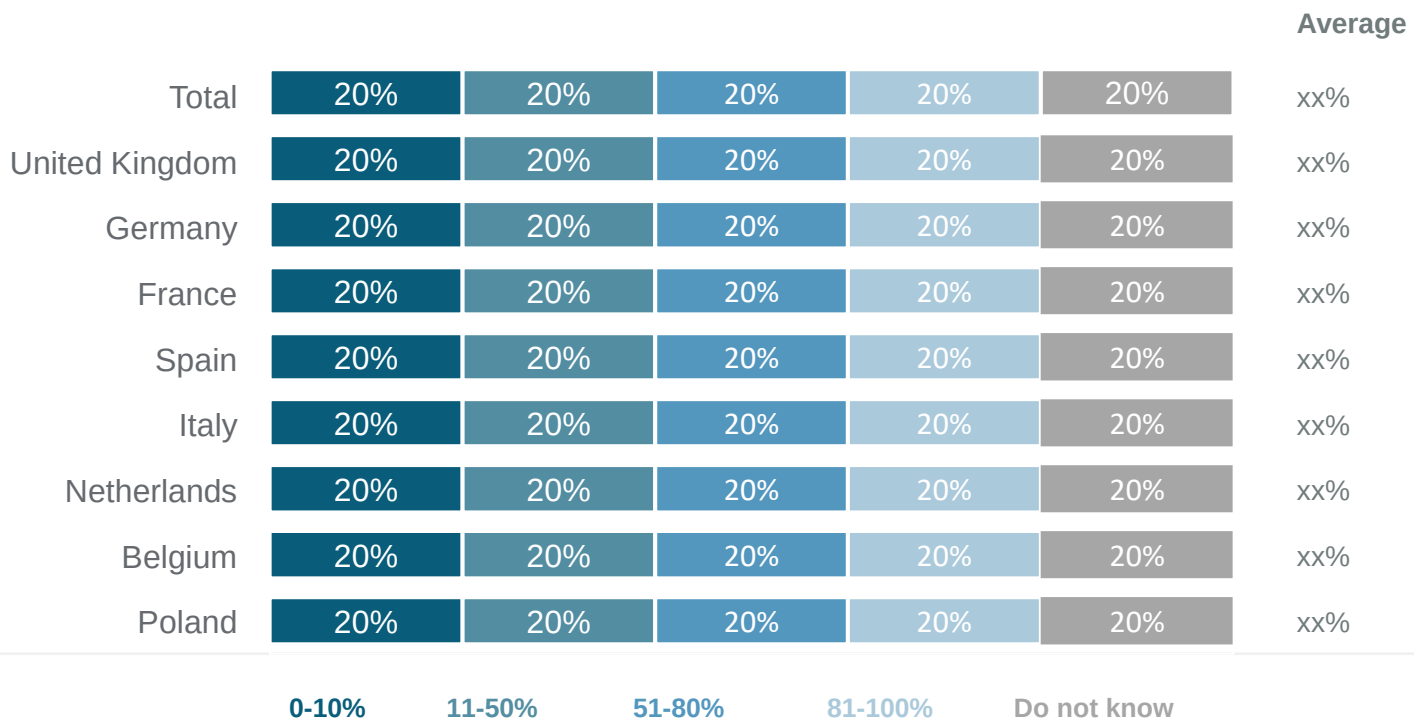


Expected share of BIM users in 2025 and 2027 per country

	2023 (now)	2025	2027
United Kingdom	xx%	xx%	xx%
Germany	xx%	xx%	xx%
France	xx%	xx%	xx%
Spain	xx%	xx%	xx%
Italy	xx%	xx%	xx%
Netherlands	xx%	xx%	xx%
Belgium	xx%	xx%	xx%
Poland	xx%	xx%	xx%

Conclusion

Can you give a rough estimation how much percent the failure costs are lower when BIM is used?



Conclusion

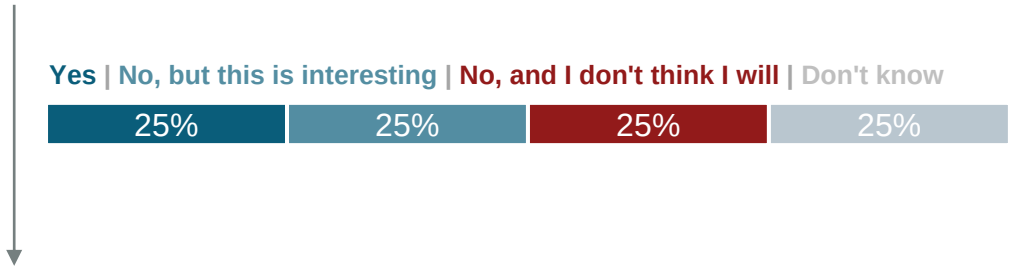
TOP BIM-related software used

What software is used to deliver your BIM projects?

	Q4 2023	Q2 2021	Q4 2019	Q4 2017
xx	20%	xx%	xx%	xx%
xx	20%	xx%	xx%	xx%
xx	20%	xx%	xx%	xx%
xx	20%	xx%	xx%	xx%
xx	20%	xx%	xx%	xx%
Other	20%	xx%	xx%	xx%
None/don't know	20%	xx%	xx%	xx%

Use of Plug-in tools

Some manufacturers offer plug-in tools compatible with BIM-software. Is this interesting for you or do you already use this?



Top 5 Manufacturer preference

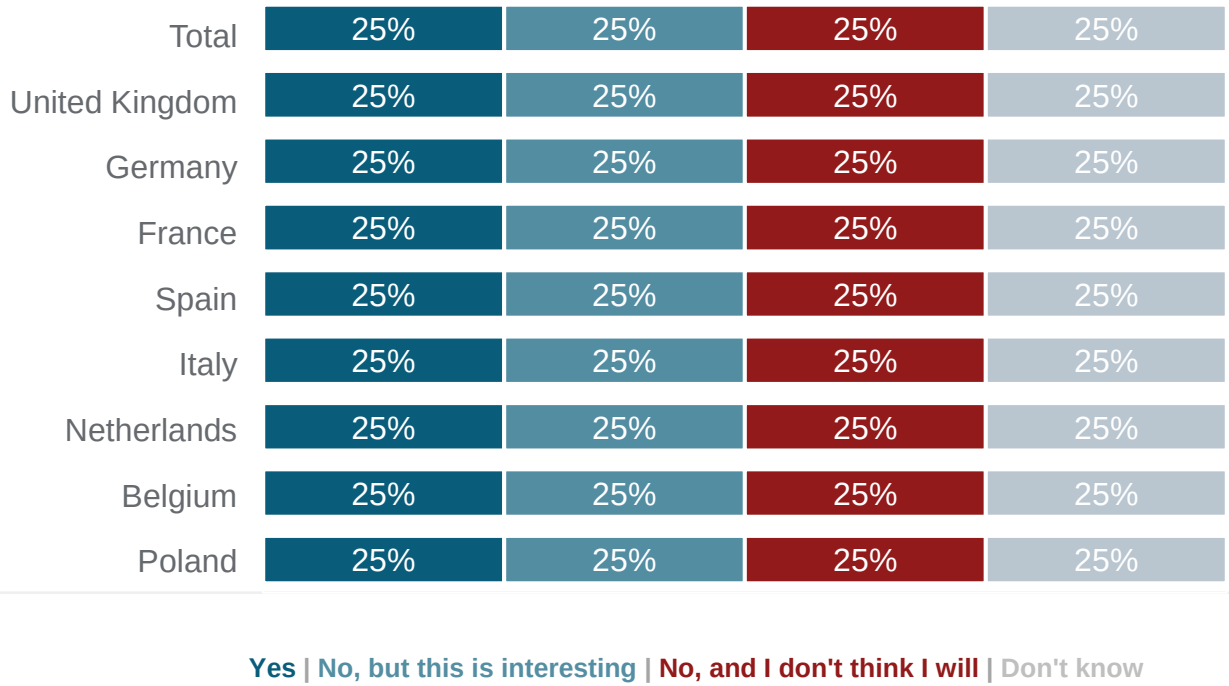
From which manufacturers do you use the plug-in tools?

The most mentioned examples:

Conclusion

Use of Plug-in tools

Some manufacturers offer plug-in tools compatible with BIM-software. Is this interesting for you or do you already use this?



Conclusion

TOP BIM-related software used

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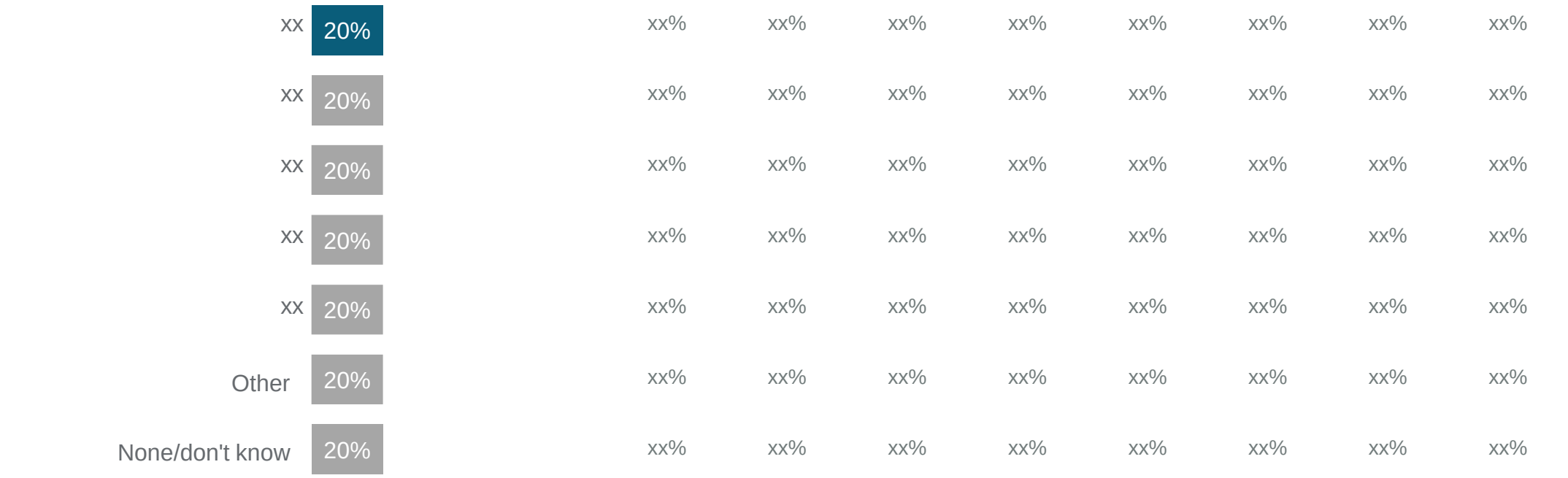
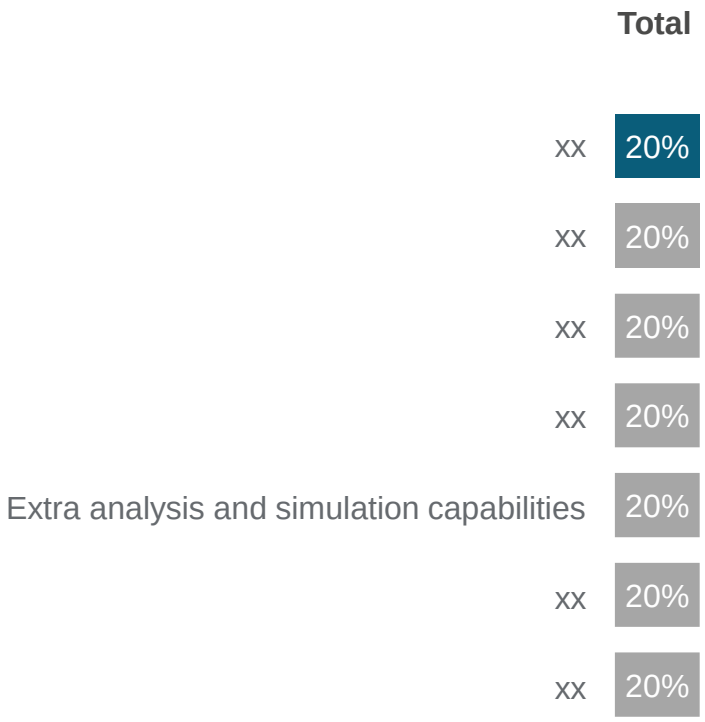


	Total	United Kingdom	Germany	France	Spain	Italy	Netherlands	Belgium	Poland
xx	20%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%
xx	20%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%
xx	20%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%
xx	20%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%
xx	20%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%
Other	20%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%
None/don't know	20%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%

Conclusion

BIM features used

Which of the following features of BIM do you use?



How long using BIM? (2023)			
1-2 y.	3-5 y.	6-10y.	>11 y.
xx%	xx%	xx%	xx%
xx%	xx%	xx%	xx%
xx%	xx%	xx%	xx%
xx%	xx%	xx%	xx%
xx%	xx%	xx%	xx%
xx%	xx%	xx%	xx%
xx%	xx%	xx%	xx%

Conclusion

BIM features used

Which of the following features of BIM do you use?

	Total	United Kingdom	Germany	France	Spain	Italy	Netherlands	Belgium	Poland
xx	20%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%
xx	20%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%
xx	20%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%
xx	20%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%
Extra analysis and simulation capabilities	20%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%
xx	20%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%
xx	20%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%

Conclusion

LOD level of BIM projects

To what level of detail or level of development (LOD level) do you specify in your BIM models?

		How long using BIM?			
		1-2 y.	3-5 y.	6-10y.	>11 y.
LOD 100	20%	xx%	xx%	xx%	xx%
LOD 200	20%	xx%	xx%	xx%	xx%
LOD 300	20%	xx%	xx%	xx%	xx%
LOD 400	20%	xx%	xx%	xx%	xx%
LOD 500	20%	xx%	xx%	xx%	xx%
I don't know (LOD levels)	20%	xx%	xx%	xx%	xx%

Conclusion

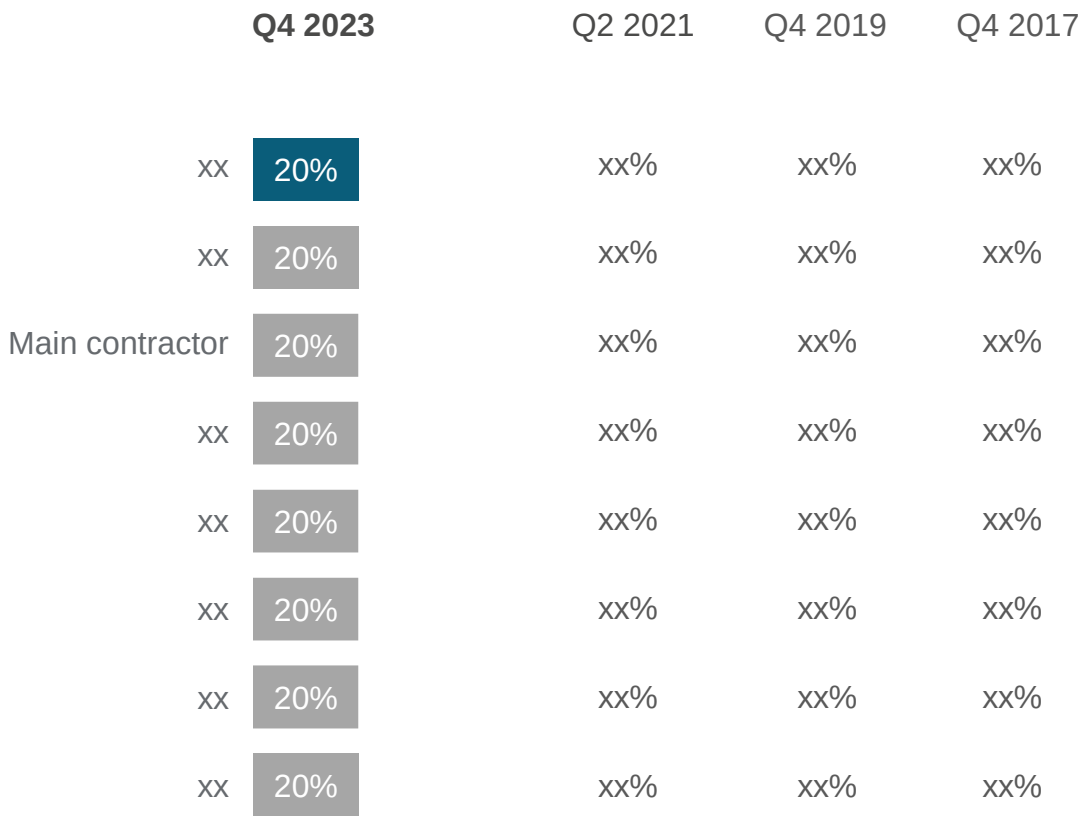
LOD level of BIM projects

To what level of detail or level of development (LOD level) do you specify in your BIM models?

	Total	United Kingdom	Germany	France	Spain	Italy	Netherlands	Belgium	Poland
LOD 100	20%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%
LOD 200	20%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%
LOD 300	20%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%
LOD 400	20%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%
LOD 500	20%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%
I don't know (LOD levels)	20%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%

Conclusion

Which other parties do you already cooperate with using BIM processes in your projects?



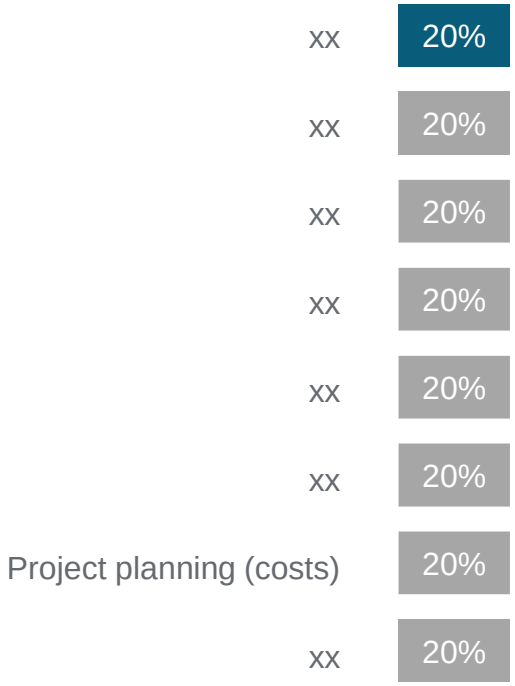
Conclusion

Which other parties do you already cooperate with using BIM processes in your projects?

	Total	United Kingdom	Germany	France	Spain	Italy	Netherlands	Belgium	Poland
xx	20%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%
xx	20%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%
Main contractor	20%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%
xx	20%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%
xx	20%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%
xx	20%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%
xx	20%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%
xx	20%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%

Conclusion

What kind of information/ data do you share with these parties using BIM software?



Who is responsible for the data within the model?

Conclusion

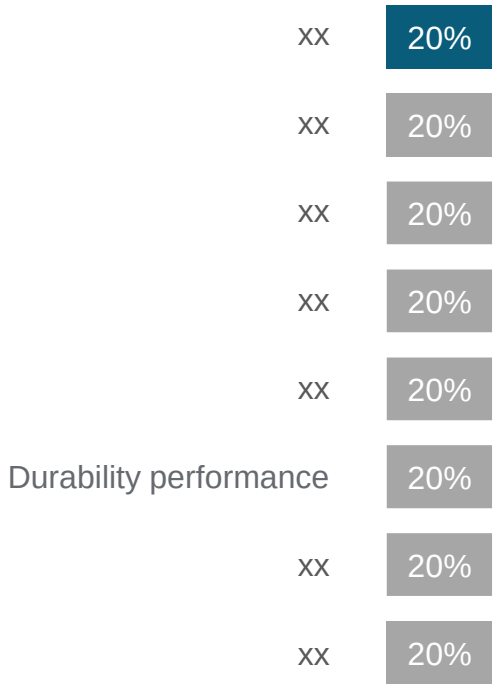
What kind of information/ data do you share with these parties using BIM software?

	Total	United Kingdom	Germany	France	Spain	Italy	Netherlands	Belgium	Poland
xx	20%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%
xx	20%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%
xx	20%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%
xx	20%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%
xx	20%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%
xx	20%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%
Project planning (costs)	20%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%
xx	20%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%

Conclusion

Did you specify the following building parts within your last project in BIM?

Which performances of building products are specified in projects by using BIM?



Conclusion

The data type used

Do you work more with open file data or with native file data?

	Q4 2023	Q2 2021	Q4 2019	Q4 2017
xx	20%	xx%	xx%	xx%
xx	20%	xx%	xx%	xx%
xx	20%	xx%	xx%	xx%
xx	20%	xx%	xx%	xx%

Platforms or libraries for specific BIM information/objects

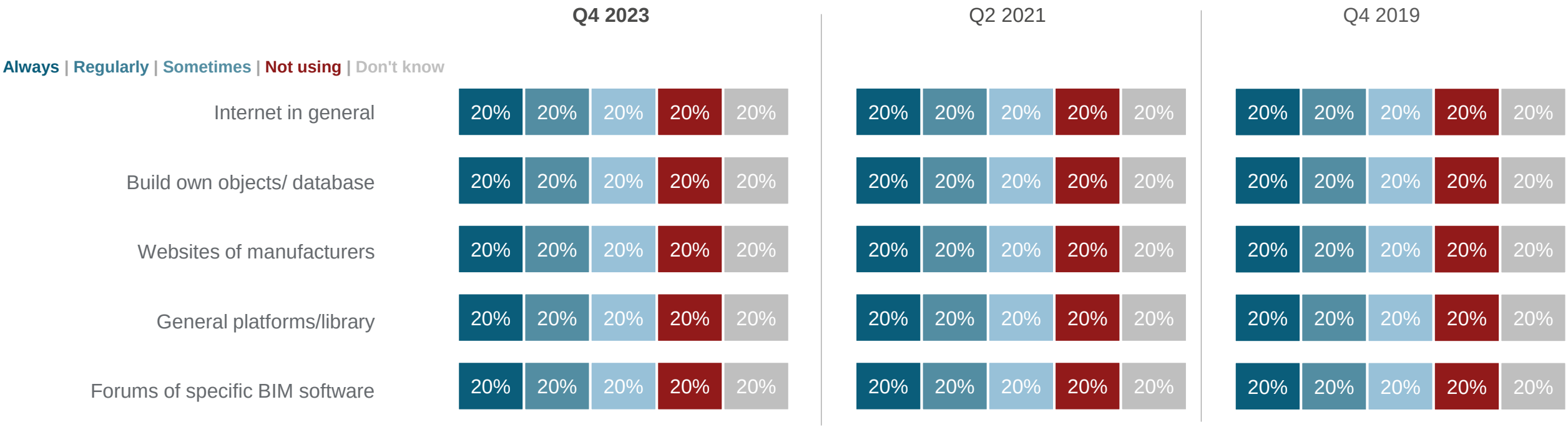
Can you mention any platform or library where you get your specific BIM information and objects?

	Q4 2023	Q2 2021	Q4 2019	Q4 2017
xx	20%	xx%	xx%	xx%
xx	20%	xx%	xx%	xx%
xx	20%	xx%	xx%	xx%
xx	20%	xx%	xx%	xx%
xx	20%	xx%	xx%	xx%
xx	20%	xx%	xx%	xx%

Conclusion

Channels used for BIM information/objects

To what extent do you use the following channels for specific BIM information/objects?



Conclusion

Statements

To what extent do you agree or disagree with the following statements?

	Total	UK	GE	FR	SP	IT	NL	BE	PL
Implementing BIM is difficult because other stakeholders would prefer traditional methods	25% 25% 25% 25% 25% 25%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%
BIM can significantly improve our collaboration among different stakeholders	25% 25% 25% 25% 25% 25%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%
Implementing BIM improves efficiency of the design and documentation process	25% 25% 25% 25% 25% 25%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%
BIM can contribute to a reduction in errors and rework during the design and construction phases	25% 25% 25% 25% 25% 25%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%
The use of BIM results in improved cost estimation accuracy throughout lifecycle	25% 25% 25% 25% 25% 25%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%
Regulatory environments in our region do not fully support or mandate the use of BIM	25% 25% 25% 25% 25% 25%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%
BIM facilitates more sustainable and environmentally conscious design practices	25% 25% 25% 25% 25% 25%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%
Concerns about data security are hindering our adoption of BIM.	25% 25% 25% 25% 25% 25%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%

Strongly agree | **Agree** | **Neutral** | **Disagree** | **Strongly disagree** | **Don't know**

In the country split the strongly agree + agree responses are shown

Conclusion

	Total	UK	GE	FR	SP	IT	NL	BE	PL
Lighting designers should be included in the BIM process directly from the first planning phase	20% 20% 20% 20% 10% 10%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%
Various LoD (level of detail)/ LoI (level of information) models are needed	20% 20% 20% 20% 10% 10%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%

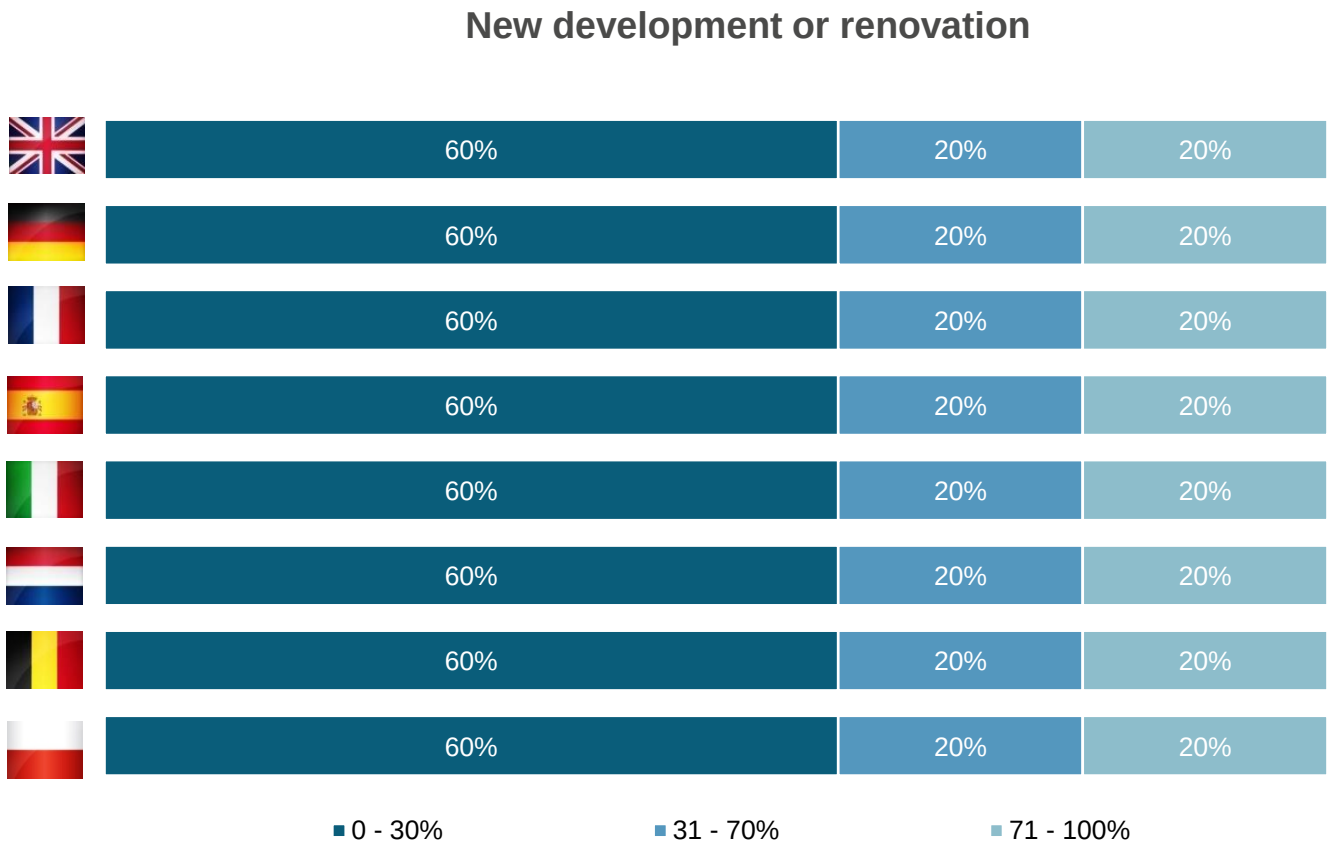
Strongly agree | **Agree** | **Neutral** | **Disagree** | **Strongly disagree** | **Don't know**

In the country split the strongly agree + agree responses are shown

Index

Background of the architects

...conclusion



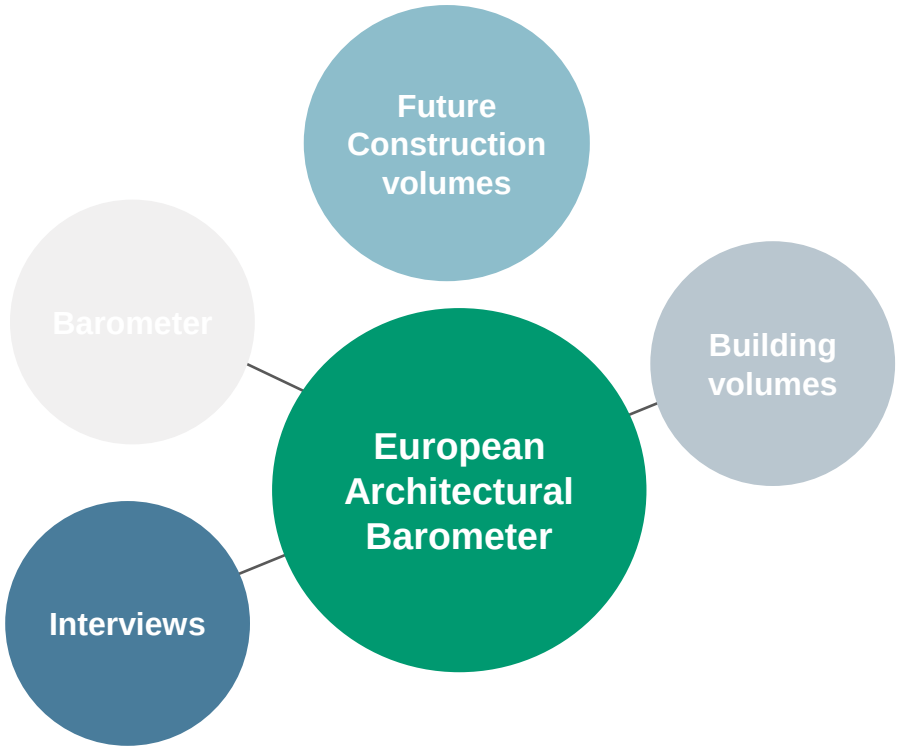
About European Architectural Barometer

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

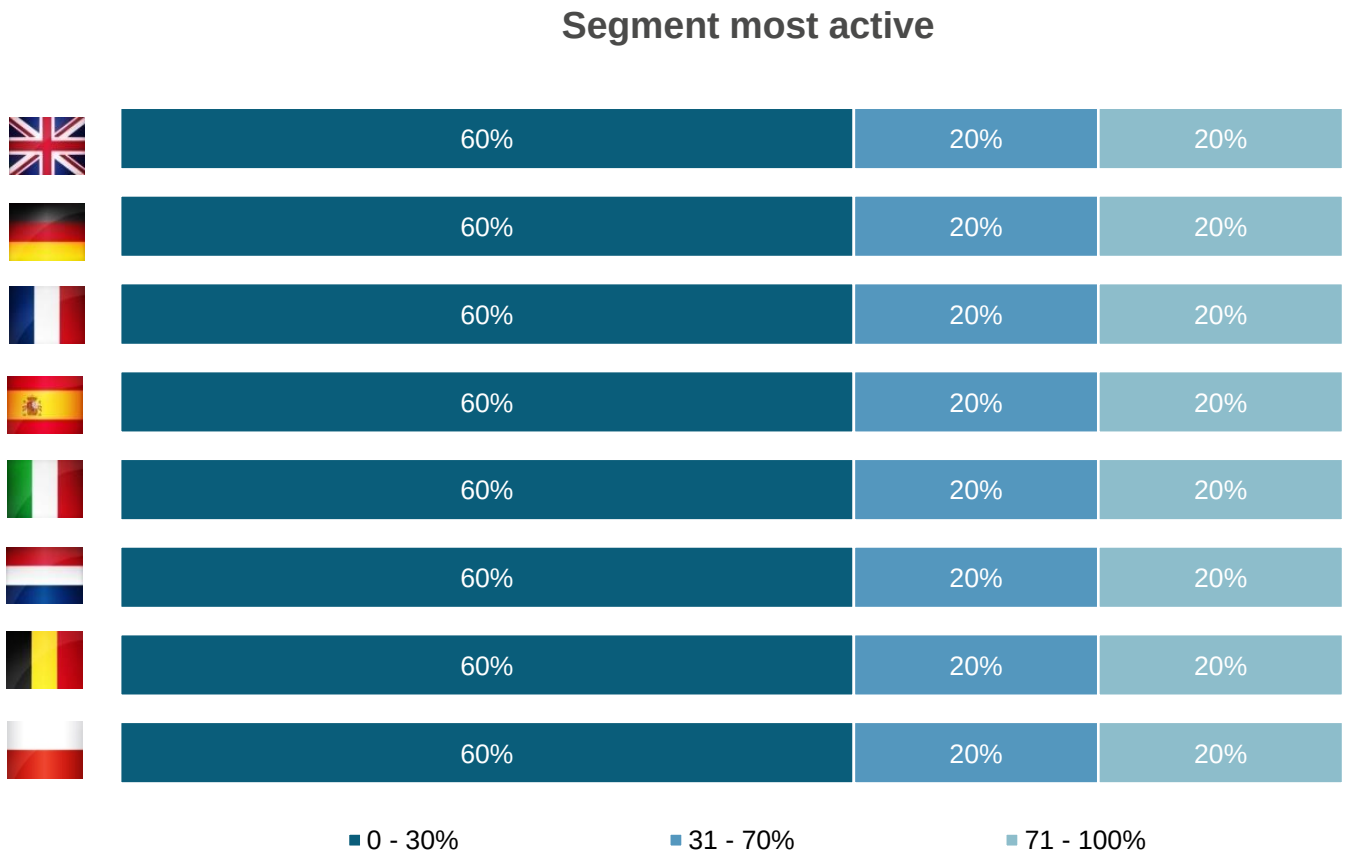
For decision makers charged with considerations of company resources, staffing and marketing strategy, a clear insight into future construction volumes is essential. However, economic indicators seldom provide an adequate picture of these volumes.

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.

Results per segment

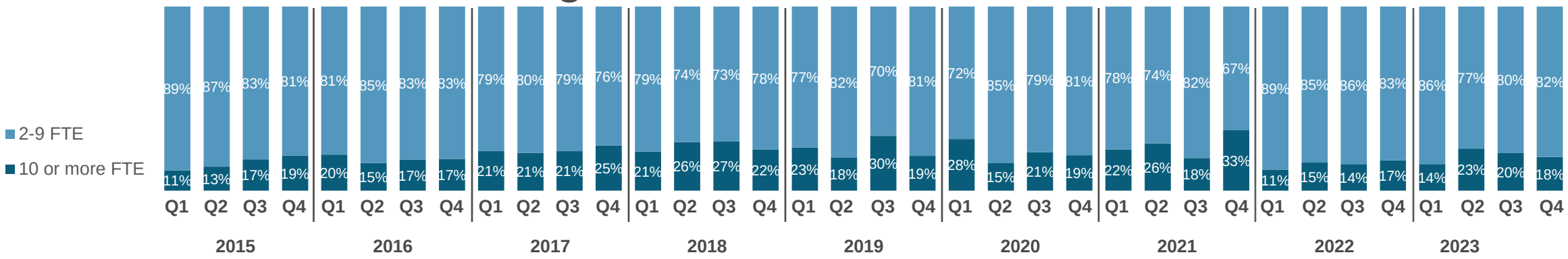
For three key questions from the current measurement of the European Architectural Barometer, the results are divided by architects that realise most of their sales in the residential segment (0% – 30% non-residential), by architects that realise sales in both segments (31% - 70% non-residential), and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

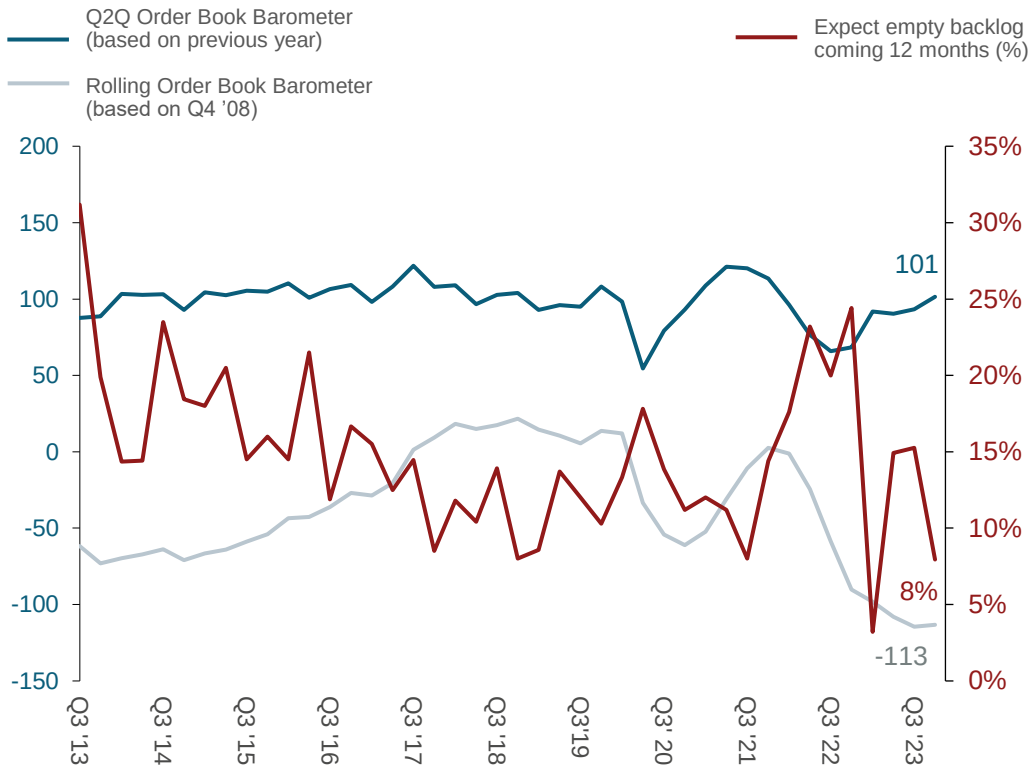


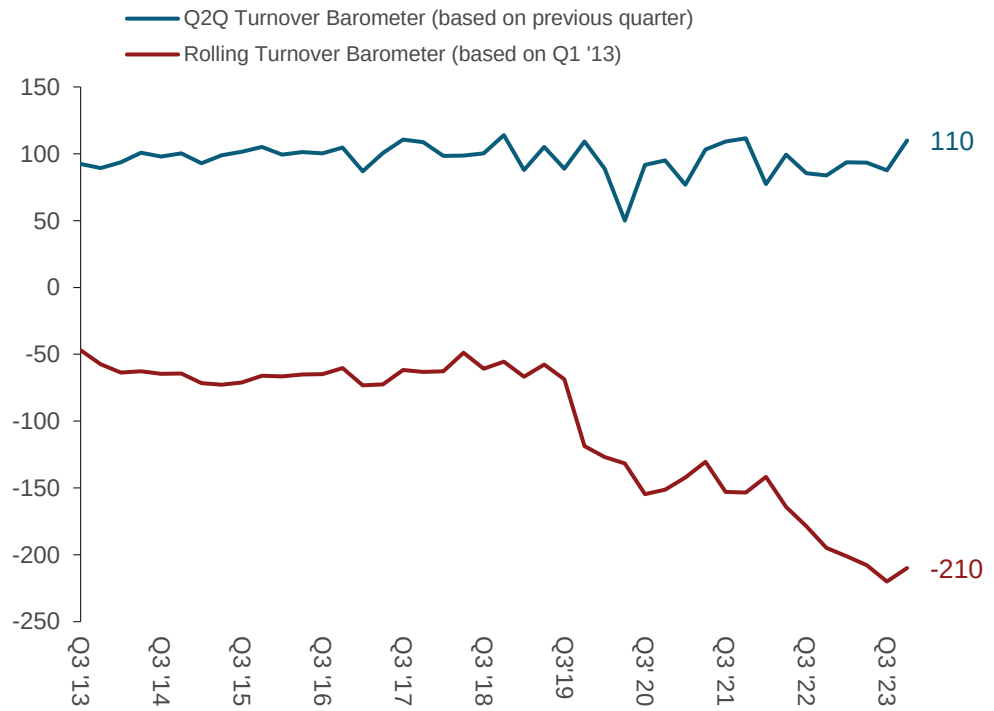
The tables on the following pages show the abovementioned split with regard to the following questions:

- **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 Polish architects







Data of the short-term outlook is available per country

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	0 - 30	31 - 70	71 - 100
Strongly increased (>5%)	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%
Slightly increased (0-5%)	x%	x%	x%	x%	x%	x%	x%	x%	x%	x%	x%	x%	x%	x%	x%	x%	x%	x%	x%	x%	x%	x%	x%	x%	x%	x%	x%
Stayed the same (0%)	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%
Slightly decreased (0-5%)	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%
Strongly decreased (>5%)	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%
Barometer turnover	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx

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	0 - 30	31 - 70	71 - 100
Strongly increased (>5%)	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%
Slightly increased (0-5%)	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%
Stayed the same (0%)	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%
Slightly decreased (0-5%)	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%
Strongly decreased (>5%)	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%
Barometer order book	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx

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**	**0 - 30**	**31 - 70**	**71 - 100**
Yes	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%
No	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%
Do not know	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%	xx%

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)	1934	1032	476	384	608	396	667	1218
Net sample (all approached respondents)	732	210	237	230	239	270	234	457
Completed interviews	125	125	125	125	125	100	101	126
Response percentage (interviews/ net sample)	17%	60%	53%	54%	52%	37%	24%	28%

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.

Barometer order book

	Q1'09	Q2'09	Q3'09	Q4'09	Q1'10	Q2'10	Q3'10	Q4 '10	Q1 '11	Q2 '11	Q3 '11	Q4 '11
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
Rolling Barometer Values	-29	-54	-54	-69	-69	-59	-65	-71	-60	-59	-65	**-66**

+ (-25) + (0) + (-15) + etc.

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 is the name of the CAD software your firm uses?
2. Are you familiar with BIM?
3. What is the share of projects in which BIM is used?
4. What percentage of the turnover/ revenue comes from BIM projects?
5. When will your company start developing BIM capability?
6. When did your company start to work with BIM?
    - Why is your organization not (yet) started with using BIM?
7. Which of the following features of BIM do you use?
8. To what level of detail or level of development (LOD level) do you specify in your BIM models?
9. Did you specify the following building parts within your last project in BIM?
10. Which performances of building products are specified in project by using BIM?
11. Which BIM-related software do you use?

Questionnaire – Theme questions

12. Which other parties do you already cooperate with using BIM processes in your projects?
13. What kind of information/ data do you share with these parties using BIM software?
14. Who is responsible for the data within the model?
    - To what extent do you agree with the following statements about the implementation of lightning design in BIM?
15. To what extent do you use the following channels for specific BIM information/objects?
16. Can you mention any platform or library where you get your specific BIM information and objects?
17. Do you work more with open file data or with native file data?
18. Some manufacturers offer plug-in tools compatible with BIM-software. Is this interesting for you or do you already use this?
19. From which manufacturers do you use the plug-in tools?
20. Can you give a rough estimation how much percent the failure costs are lower when BIM is used?
21. To what extent do you agree or disagree with the following statements?

What we do

Examples

- **Segmentation**
- **Customer journey**
- **Branding**
- **Concept/ product research**
- **Customer satisfaction**
- **Trends**
- **Distribution research**
- **Market exploration**
- **Pricing**
- **Market size**

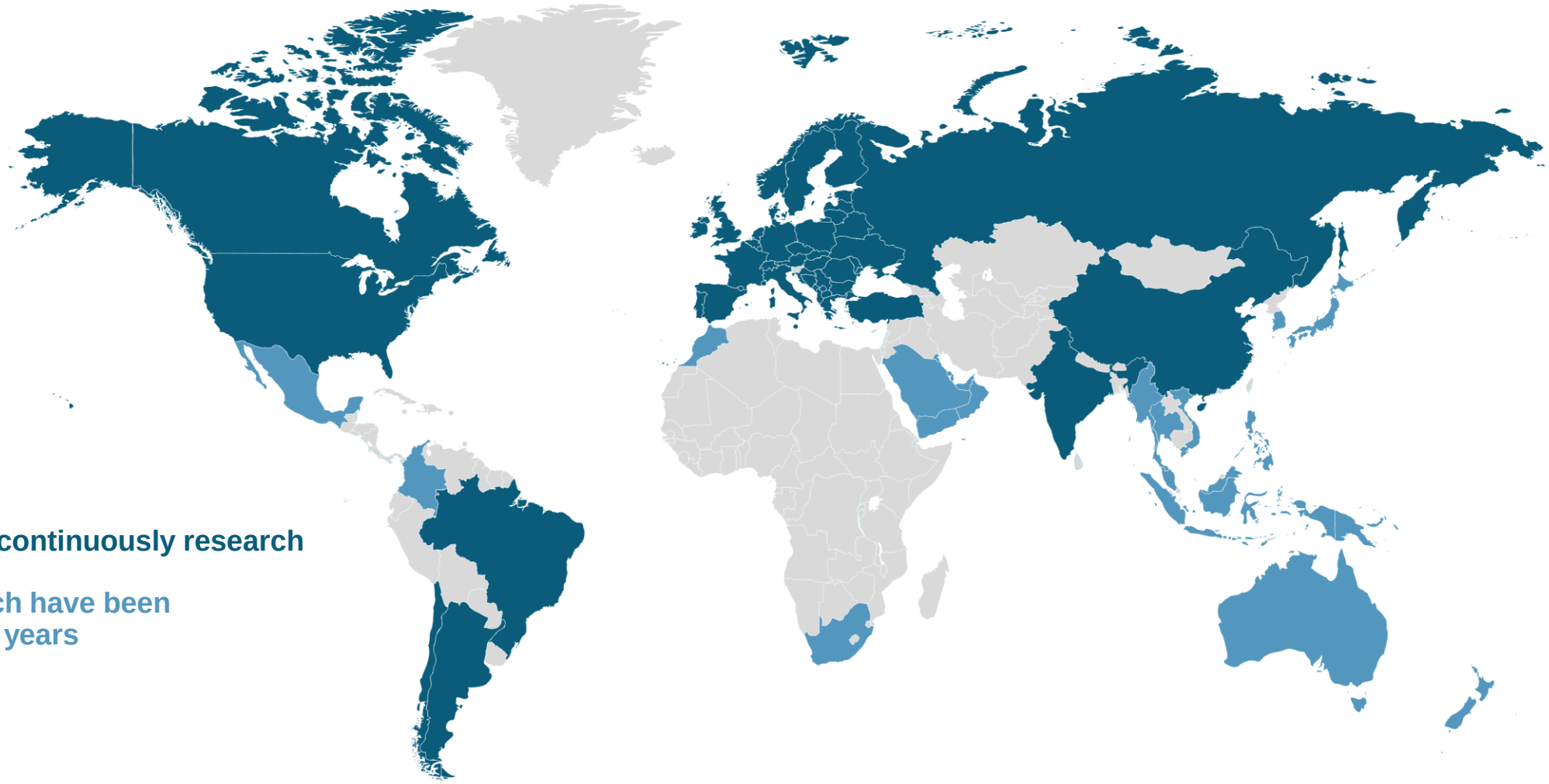
Dedicated market research

- 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

USP Marketing Consultancy